website

PHYSICS TUTORIAL

DEVELOPED

BY

ASMAA AWAIS

COMPUTER CENTER
QUAID-E-AZAM UNIVERSITY
ISLAMABAD

WEB SITE

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بسم الله الرحمن الرحيم

Physics Tutor

Developed By

ASMAA AWAIS

This project is submitted

To

Computer Center, Quaid-e-Azam University

In

Partial Fulfillment of Requirements of PGD-IT

COMPUTER CENTER
QUAID-E-AZAM UNIVERSITY
ISLAMABAD
2006

CERTIFICATE

Report Title: - Physics Tutor

It is certified that I have read the thesis submitted by Asmaa Awais. It is my judgment that this is sufficient to warrant its acceptance by Quaid-e-Azam University Islamabad for the Post Graduate Diploma in IT- 2005-2006

Supervised by

Sir Abdul Subhan
Computer Center
Quaid-e-Azam University Islamabad

Signature of Supervisor

DEDICATED TO

My Beloved Parents & Respectable Teachers

To whom

I owe my whole life.

Project Brief

Title:-	Physics Tutor
Supervised By: -	Sir Abdul Subhan
Offered By: -	Computer Center Quaid-e-Azam University
Undertaken by: -	Asmaa Awais
Date of Commencement:-	7th March, 2006
Date of Completion: -	30th May, 2006
Source Tools:-	ASP, HTML VB / JAVA SCRIPT IIS 5.0 Dream weaver-MX Microsoft Access
Operating System: -	WINDOWS XP

Acknowledgement

With the blessings of my Almighty Allah, most Merciful and Compassionate, most Gracious and Beneficent, my this task has accomplished successes fully.

I am extremely grateful to my Project Supervisor, Mr. Abdul Subhan and Sir Anees-ur-Rehman for providing his guidance and help I needed for completion of the Project. Their professional comments, positive criticism and the continuous vigilance on my work help me a lot.

I extend my special appreciation and thanks to all the teachers and staff of the faculty of Computer Center for their co-operation during the studies in the university.

I thankful to my class fellows whose cooperation provided me peaceful working atmosphere.

A very special note of thanks goes to my parents and friends for encouraging me, praying for my success and their love for me.

CHAPTERS

Introduction

Chapter: 1

About this chapter

This chapter includes the Introduction of this website , including the information About services provided by The system.

This chapter includes:

- The need of online Learning system.
- Benefits of System
- Use of Technology
- System Services
  - ✓ User Services
  - ✓ Admin Services

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The need of online learning system

Now a days the most commonly used system for teaching is that teachers deliver lectures to a group of student normally 50 to 60 in one class room. Due to big gathering it is not possible for the teachers to pay equal attention to all the students. Teachers only give hints of the relevant chapter and due to large number of students and shortage of time the detailed discussion among the teachers and students normally don't take place.

Traditional face-to-face tutoring requires students to block off extended time periods in advance, Brain fuses allows students to work with a tutor when they want, where they want, for as long as they want.

So for this reason there is need to develop such a system through which the student get easily access all the information on one platform.

The modern technological advancement has provided such platform. The computer technology gives many solutions for easy way of study. Online Learning System is one of the most cheaper and easy media for spreading education.

Being Master in Physics. it is my ambitious to transfer my professional knowledge to others. For this purpose I have made an attempt to develop a Site under title 'PHYSICS TUTOR' so as the needy students may be benefited. This Site is designed in such a professional and simple way that a student of normal caliber can also easily follow the subject. The System details are explained in next paras.

Proposed System

The physics tutorial is an online physics tutorial written for high school physics students. I want to form a system "PHYSICS TUTOR" that provides complete information to student about the updated lectures, about different type of help. It helps the students to learn basics physics concept and review them in physics tutorial. Check your understanding quizzes let them know they got it.

With each question provide its correct answer, so if the student is not able to choose the correct answer, then he can see the answer by depress the mouse on the pop-up menu next to each question. Explain each lecture with the help of relative diagrame that help the students to understand he topic in a convenient way. Another section that is provided in this tutor is the physics help section, from where the students gets the help

* Physics terms * Physics formulas * Exams tips

Some help topic that is included now in the help section is

- Graphing practice

Test yourself with a multitude of problems involving the analysis and interpretation of position-time and velocity-time graphs.

- Recognizing forces

See if you can recognize the presence or absence of a variety of forces in different physical situations.

- Vectors direction

Identify the magnitude and direction of a vector from a scaled vector diagram.

- Vector addition

Use an accurately drawn scaled vector diagram to determine the resultant from head-to-tail addition of two vectors. Other way to teach the students that is used in this system is through the quick time movies.

For example in the proposed system the quick time movies that are used show you projectiles, collisions, and roller coasters in motion

So the students can see how the acceleration, energy and velocity change as the action progresses.

Feedback is another valuable part that is provided in this tutorial through which all the user feedback via the electronic mail. Suggestions and constructive criticism is pondered and evaluated and often leads to the revision of the pages. Including an online objective type quiz on a web lesson allows the students to

- Engage in a meaningful self-assessment.
- Assesses themselves at their convenience in terms of time and place
- Gain immediate feedback.
- Recognize their strength and weakness.

Benefits of system

Interactive online learning focuses on the belief that communication and dialogue are the key processes of learning, wherever, and whenever it occurs.And online help are excellent and effective low-cost vehicles for integrating the interactive dialogue into previously predominately faculty to student "transmission" learning models. With these new strategies, students also tend to become more active learners and quickly form communities of collaborative learners.Links to relevant information can occur at points of correspondence rather than at the end of a linear textual presentation, there by facilitating integration among concepts and to other insights about the topic. Writing hypertext and structuring navigation for learning purposes.

Publishing learning resources to the World Wide Web has the obvious advantage of anytime, anyplace access.

Benefits to students

- Rethink the lecture
- Provide information and access to resources
- Provide lecture to students anytime, from anywhere
- Distribute assignments and exercises easily
- Convenience of learning at home
- Able to conduct a simple search using search engines
- Assessing learning at a distance;
- Course material is available to students anytime, anywhere.
- Communicate Effectively: Students must have a range of skills to express themselves not only through paper and pencil, but also audio, video, animation, design software as well as a host of new environments (e-mail, Web sites, message boards, streaming media, etc.).

Benefits to teacher

- Teacher organizes learning materials into a package, transmits it to the students often via lecture
- The instructor can provide a fuller package of information, including multimedia elements, to support a variety of learning styles and linkages to outside

resources and experts frequently not available in a classroom-setting topic.

- Computer mediated communication provides a rich resource for discussion, reflection, and personal understanding. While the visual cues present in face-to-face communication are not presently capabilities of e-mail and discussion forums, the benefits of these tools should not be underestimated.
- Teachers Coordinate technology implementation efforts with core learning goals, such as improving students' writing
- Skills, reading comprehension, mathematical reasoning, and problem-solving skills.

Use of technology

Students can learn "from" computers—where technology used essentially as tutors and serves to increase students basic skills and knowledge; and can learn "with" computers—where technology is used a tool that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher order thinking, creativity and research skills Teacher Determine the purpose of using technology in the classroom, as determined by the specified educational goals. Is it used to support inquiry, enhance communication, extend access to resources, guide students to analyze and visualize data, enable product development, or encourage expression of ideas? After the purpose is determined, select the appropriate technology and develop the curricula. Create a plan for evaluating students' work and assessing the impact of the

technology.

Various technologies deliver different kinds of content and serve different purposes in the classroom. For example, word processing and e-mail promote communication skills; database and spreadsheet programs promote organizational skills; and modeling software promotes the understanding of science and math concepts These findings have implications for every district and school using or planning to use technology. Research on successfully Developing, evaluating, studying, and implementing a wide range of technology-based educational programs suggests that the value of technology for students will not be realized unless attention is paid to several important considerations that support the effective use of technology.

Using the internet as a classroom provides the instructor the ability to conduct classes with students from across multiple time zones,

Encourage students to broaden their horizons with technology by means of global connection, electronic visualization, electronic field trips, and online research and publishing.

Learn how various technologies are used today in the world of work, and help students see the value of technology applications.

Internet based resources and tools have transformed education by expanding the world that can be experienced and learned. Immediacy and interaction are essential for student success. The internet is evolving to find new ways to engage students in interactions and explorations that seize the teachable moment. This is the promise of technology: it will allow students to learn more physics, more deeply, in the way and at the time the student chooses.

Features provides by Proposed System

User services

User registration

User must register yourself. If he/she wants to use the site.

User can register by providing the following information:

- User registration number
- user name
- user father name
- user login id
- user password
- email
- address
- phone number
- user interests

Login

Login is the user service, user (who is already registered) can login by entering

- User name
- Password

Editing profile

Editing profile is another service that provides the facility to user to change his given information by using the editing profile option.
To edit the profile user should enter his

- User name
- Password

If the username and password matches, then user can change his given information.

Searching

User can search his required topic or information through search engine
He can search either by entering the

* Category name * Topic name

Or if he enter any word in the search field, search engine provide the detail description of that word.

Feed back

Feedback is another valuable part that is provided in this tutorial

Through which the user feedback via the electronic mail. Suggestions and constructive criticism is pondered and evaluated and often leads to the revision of the pages.

Lectures

User can get the information from the updated lectures, where ever and whenever they want.

Lectures contains the detail description about the topic

With each lecture provide some question through which the students can judge his level of understanding.

With each topic its relevant picture is provided that explain the topic in proper way.

Each lecture not contains more than three pictures.

Physics help

In this section that resources provides that will help you master basics physics principles.

Physics terms

Physics formulas

Exams tips

Like some resources that is provided here are

- Graphing practice
- Recognizing forces
- Vectors direction
- Vectors addition

Quiz

Including an online objective type quiz on a web lesson allows the students to

- Engage in a meaningful self-assessment.
- Assesses themselves at their convenience in terms of time and place.
- Gain immediate feedback.
- Recognize their strength and weakness.

Admin Services

These services only used by an admin user.

User administration

User administration is a service through which the admin user can cancel the member ship of any registered user.

Lecture administration

Through this service the admin user can

- Add
- Edit
- Delete

The provided lectures.

Topic administration

If add a new lecture we must mention which is the topic with this lecture belongs. So topic administration provides the facility to add the lecture in their respective topic, we can edit, add or delete any topic from the list.

Quiz administration

Admin user can perform the following action through quiz administration:

- Edit, add or delete quiz name and description.
- Edit, add or delete quiz option
- Edit, add or delete quiz question

Software Management Plan

Chapter :-2

About this chapter

This chapter sums up The Activities of the Project Management plan of Physicstutor.

This chapter includes:

- Version Statistics
- Introduction of SMP
- Project Organization
- Gantt Chart
- Work Products
- Project Responsibilities

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Version	Primary Author(s)	Description of Version	Date Completed
Draft	Asmaa Awais	Initial Draft was created for distribution and review comments.	18-04-2006
Preliminary	Same as above	Second draft incorporating initial review comments, distributed for final review.	25-04-2006
Final	Same as above	First complete draft, which is placed under change control.	30-04-2006
Revision 1	Same as above	Revised draft, according to the change control process and maintained under change control.	08-05-2006
Revision 2	Same as above	Revised draft, according to the change control process and maintained under change control.	15-05-2006

1. Introduction

1.1. Project Overview

The physics tutorial is an online physics tutorial written for high school physics students .The basics purpose of this site is to provide the information-updated lectures, their help, explains different phenomena with the help of quick time movie, and quizzes (that help the students to check their understanding) on one platform.
It provides complete information to student about the updated lectures, about different type of help. It helps the students to learn basics physics concept and review them in physics tutorial. Check your understanding quizzes let them know they got it.

With each question provide its correct answer, so if the student is not able to choose the correct answer, then he can see the correct answer by depress the mouse on the pop-up menu next to each question. .

Explain each lecture with the help of relative diagram that help the students to understand he topic in a convenient way.
Other way to teach the students that is used in this system is through the quick time movies.
Feedback is anther valuable part that is provided in this tutorial through which all the user feedback via the electronic mail. Suggestions and constructive criticism is pondered and evaluated and often leads to the revision of the pages.

The application will perform following functionalities.

- ✓ User registration/Subscription
- ✓ Tutorial
- ✓ Downloads
- ✓ Physics help
- ✓ Quizzes
- ✓ Feed back
- ✓ Administrative Tasks
- ✓ Database validation
- ✓ User validation

1.2 Project Deliverables

Project deliverables are:

Deliverables	Delivery Location	Delivery Method	Quantity	Expected Date
Physics tutor	Vision Islamabad	Installing Disk	1	June, 05, 2006
User manual	Vision Islamabad	Book let	1	June, 05, 2006

1.3 Evaluation of Software project Management Plan

Version	Primary Author(s)	Description of Version	Date Completed
Draft	Asmaa Awais	Initial Draft created for distribution and review documents	18-04-2006
Preliminary	Same as above	Second draft incorporating initial review comments, distributed for final review.	25-04-2006
Final	Same as above	First complete draft, which is placed under change control	30-04-2006
Revision 1	Same as above	Revised draft, according to the change control process and maintained under change control	08-05-2006
Revision 2	Same as above	Revised draft, according to the change control process and maintained under change control	15-05-2006

1.4 Reference Materials

1. IEEE Standard 1058.1-1987 for Software Management Plans.
2. Software Engineering by Roger.S.PressMan (4^{th} Edition).

1.5 Definition, Acronyms, or abbreviations

SDK	Software Development Kit
SRS	System Requirement Specification
RSD	Requirement Specification Document
I/O	Input Output
SDS	Software Design Specification

2. Project Organization

2.1 Process Model

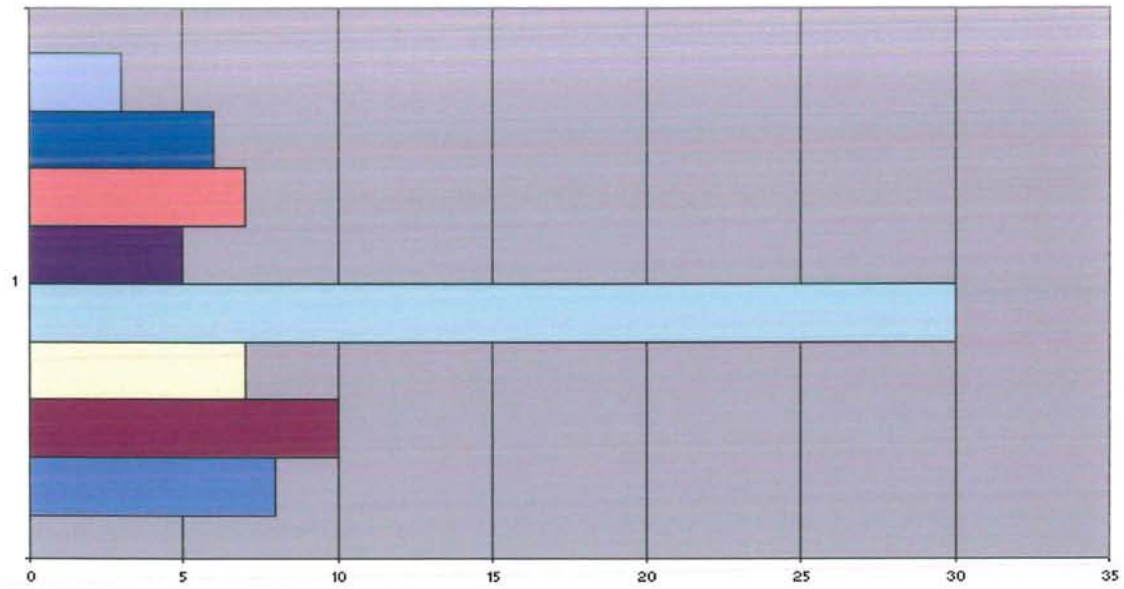
Milestones	Description	Content	Expected Date
Problem Analysis	The problems described by the user for software.	Scope Product Perspective Product functions Constraints Assumptions and Dependencies External Interface Requirements Design constraints Functional	**April 15, 2006**
Detailed Requirement Analysis	Getting Requirements from the customer in detail		**April 18, 2006**

Software Requirement Specification	This document will contain the basic requirements of the customer in detail for providing basis for the software development.	Scope Product Perspective Product functions Constraints Assumptions and Dependencies External Interface Requirements Design constraints Functional Requirements Logical Database Requirements	**April 23, 2006**
Software Design Specification	This document contains the design suitable for development.	Actors Use cases Main Components Functionality of each component Component interaction	**May 01, 2006**

		Component Interaction Model	
Coding Plan	Tool selection for development of modules		**May 06, 2006**
Development	Implementation of the design	Different Modules	**May 22, 2006**
Integration	Integration of different components.	Software components	**May 25,2006**
Interface	Development of user interfaces	Interface components	**May 30,2006**
Testing	Black box testing Focuses on the functional requirements of the software. Is a test case design method that uses the control structure of the procedural design to derive test cases?	White Box testing Back Box Testing	**June 02, 2006**
Final Presentation	Final presentation of the software	Software Document	**June 05,2006**

2.2 Gantt chart:

Activity	Description	Duration	Dependencies
A1	Problem Analysis	3 days	None
A2	Detailed Requirement Analysis	5 days	No of requirements
A3	System Requirement Specification	5 days	Same as above
A4	Software Design Specifications	8 days	No. Of modules
A5	Coding Plan	5 days	Modules interactivity with each other
A6	Development	15 days	
A7	Interface	5 days	
A8	Testing	3 days	No. of users
A9	Integration	3 days	
A10	Final Presentation	3 days	Type of technology, team members



2.3 Work Products:

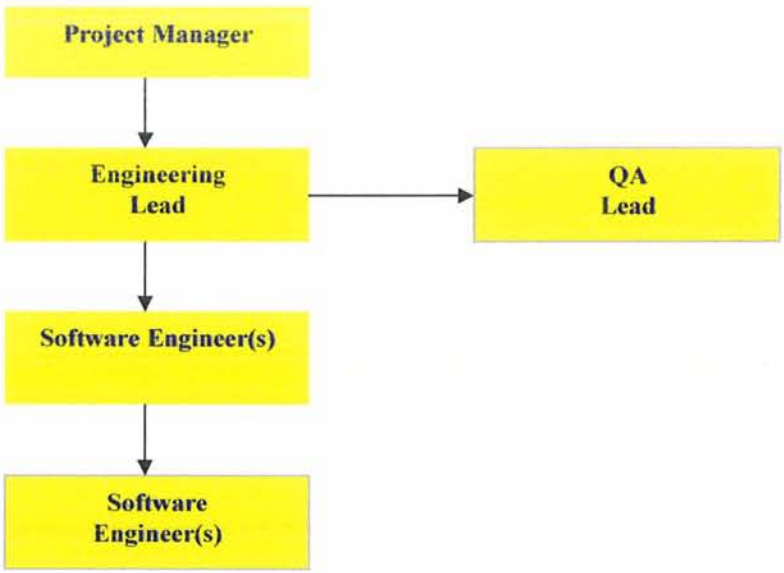
Work Product Name	Planned Completion Date	Placed under change control?	Deliverable to customer?	People who must sign off on the Work Product
Software Project Management Plan	18-04-2006	YES	NO	Project Manager, Engineering Lead, QA Lead, Documentation Lead

Change control Plan	27-04-2006	YES	YES	Project Manager, Engineering Lead, QA Lead, Documentation Lead
Top 10 Risk List	29-04-2006	YES	NO	
	29-04-2006			Same as above
Change Proposals		YES	YES	
Vision Statement	02-05-2006	YES	NO	Same as above
				Same as above
Software Development Plan, including project cost and schedule estimates	30-05-2006	YES	YES	Same as above
User Interface Style Guide	05-06-2006	YES	YES	Same as above
User Manual / requirements specification	21-04-2006	YES	NO	Same as above
Quality Assurance Plan	24-04-2006	YES	NO	Same as above
Software Architecture	24-04-2006	YES	NO	
	25-04-2006			Same as above

		YES	YES	
Software		YES	YES	Same as above
Integration				Same as above
Procedure	25-04-2006			
Staged Delivery Plan	01-05-2006	YES	YES	
Individual stage plans, including				Same as above
miniature milestone schedules	06-05-2006	YES	YES	Same as above
		YES	YES	
Coding Standard	25-05-2006			Same as above
Detailed design documents		YES	NO	Same as previous
Software construction plans	31-05-2006			
		YES	NO	Same as
Deployment document	03-06-2006			previous
	05-06-2006			Same as previous
		YES	NO	
Release Checklist				

Release Sign-off Form Document				Same as previous

2.4 Organizational Structure:



Organizational Boundaries and Interfaces

- ✓ Parent Organization: Computer Centre, Q.A.U.
- ✓ Customer Organization: Vision
- ✓ Subcontracting Organization(s): Not Specified (Any Interested customer)
- ✓ QA Organization: Quality Control Department of Computer Center
- ✓ Documentation Organization: Computer Center
- ✓ End User Support Organization: Computer Centre

2.5 Project Responsibilities:

Responsibility	**Persons Responsible**
Overall Project Manager	Asmaa awais
Engineering Manager	Asmaa awais
Quality Assurance	Asmaa awais
End-user Documentation	Asmaa Awais
Requirements Development	Asmaa awais
Software Architecture	Asmaa Awais
Technical Self-Reviews	Asmaa Awais

3. Managerial Process

Management Objectives and Priorities

- Risk Management procedure used is proactive risk strategy.
- Relative priorities are functionality, schedule and resources (budget, time, and technical people).
- PERT charts will be available for quick management assessment.
- MS Project will be used for management purposes.

4. Assumptions, Dependencies and Constrains

Assumptions

- This product will be used only by this enterprise internationally for their Testing Department and by the management staff to track the activities of the product.

Dependencies

- The database depends upon MS-Access, with maximum size (10 MB approx)
- The number of concurrent users can be limited by MS-Access.

Hardware Constraints

- **Monitors**: 800*600 minimum resolutions at 256 colors minimum.
- **Memory**: Approximately 64 megabytes.
- **I/O**: One or two button mouse and standard 101-key keyboard.
- **CPU:** At least 600 MHz should be on the computer.

5: Risk Management

- Technology being used is new to the organization.
- Specialized user interface is required for the project.

6: Monitoring and Controlling Mechanics

- Must work on network because it is a web base application.
- Must be Browser independent
- Must have clear help/error messages.
- Text should be kept minimum to facilitate the user.
- Color choices should be appropriate to accommodate users of all kinds.

7: Staff Plan

Staffing Factor	Required
Number of Personnel	3
Software Engineer	1 full time, 1 part time
Senior Software Engineer	1
Engineering Lead	1
Quality Assurance Lead	1
Duration of the Project	49 days for the first release
Training Days	1 week

8: Technical process

Methods, Tool and Techniques

Hardware Environment

- Monitors: 800x600 minimum resolutions at 256 colors minimum.
- Memory: Approximately 64 mega bytes.
- I/O: One or two button mouse standard 101-key keyboard.

Operating System

Microsoft Windows (95, 98, 2000, XP, NT Workstation, NT Server) platform preferred.

Software Tools Methods and Techniques

- Microsoft Word
- ASP
- Java Script
- Rational Rose
- Object Oriented methodology for analysis, design and testing
- Unit Testing
- Integration testing

Software Documentation

Software Development plans, including project cost and schedule estimates.

Project Support Functions

- System Requirement Specification
- Software Design Document

9: Work Packages, Schedule and Budget

9.1 Work Packages

Work Products:

Work Package Identification	Work Packages
W1	Software Project Plan
W2	Change Control Pan
W3	Change Proposals
W4	Vision Statement
W5	Top 10 Risks List
W6	Software Development Plan, including project cost and schedule estimates
W7	User Interface Style Guide
W8	User Manual / Requirement Specification
W9	Quality Assurance Plan
W10	Software Architecture
W11	Software Integration Procedure
W13	Individual stage plans, including milestones.
W14	Coding Standard

W15	Detailed design documents
W16	Software construction plans
W17	Deployment Document
W18	Release Checklist
W19	Release Sign-off log
W20	Software Project Log
W21	Software Project History Document

Resource Requirements

Resources Required	**Duration**
Personnel	7 Weeks
Software Engineers	7 Weeks
Senior Software Engineer	7Weeks
Engineering Leader	7 Weeks
Quality Assurance Lead	4 Weeks
Training Leader	1 Week
Computers	2

Schedule

Already described in Gantt chart

Risk Management Plan

Chapter: 3

About this chapter

This chapter sums up The Activities of the Risk Management Plan , Roles and Responsibilities, Tools and Budget.

This chapter includes:

- Introduction (Risk Management Sys
- Purpose of Risk Management Syste
- Roles and Responsibilities.
- Risk Documentation
- Activities
- Risk Management Budget.
- Risk Management Tools.

1. Introduction (Risk Management System)

Despite much research and progress in the area of **Software Project Management**, software development projects still are not achieving the target of delivering desired systems on time, within the available financial resources and desired quality. Much of the failure in achieving those targets could be avoided by managers proactive planning for dealing with risk factors rather than waiting for problems to occur and then trying to react on the time of occurrence. Usually this reaction is too little and too late, because by the time the problem is fully recognized, the schedule has already been disturbed, a considerable amount of resources has been utilized, and the product quality has suffered due to introduction of errors. Risk management has been proposed as a solution to for overcoming errors appeared insight into potential problem areas and to identify these problems, address and eliminate them before they can create any problems in the project.

In order to implement a successful risk management program, project managers need tools to help them reduce risks. Risk Management helps project managers in identifying risks in earlier phases of the project cycle, defining risks in earlier phases of the project cycle and defining risk containment actions. The system should support Risk Assessment during the initial phase of the development as well as during project delivery phase.

A good measurement program helps managers:

- Communicate unambiguously throughout the organization.
- Identify and correct technical and management problems by focusing on early discovery of errors.
- Make key tradeoffs by assessing the impact of decision.
- Defend and justify decisions by providing data to explain how issues are prioritized and managed.

Using these as the evaluation criteria a detailed search and evaluation of the Risk Management System available in the industry was made.

2. Purpose

The purpose of this document is to describe how we can perform the job of managing risks for online testing. It identifies risks which may occur in the project, defines roles and responsibilities for participants in the risk management process, the risk management activities that will be carried out, the schedule and budget for risk management activities and tools and techniques that will be used during this process.

3. Roles and Responsibilities

3.1 Project manager

The project manager will assign a Risk Officer to the project, and identify this individual on the project's organization chart. The Project Manager and other members of the Project Management team will meet every week to review the status of all risk resolving efforts, review the exposure assessments for any new risk items, and redefine the project's Top Ten Risk List.

3.2 Software Quality Assurance involvement

The Project Manager and other members of the project will check about the quality of the project and will assign role for each member of the team for making quality assured software

3.3 Risk Officer

The Risk officer has the following responsibilities and authorities:

- ✓ Coordinating between risk identification and analysis activities
- ✓ Maintaining the project's risk list
- ✓ Notifying project management of the new risk items discovered
- ✓ Reporting risk resolution status to management
- ✓ The Risk Officer should normally not be the project Manager.
- ✓

3.4 Project Member Assigned a Risk

The Risk Officer will assign each newly identified risk to any member of the project, who will assess the exposure and probability for the risk factor and report the results of that analysis back to the Risk Officer. Project members who have assigned the responsibilities for performing the steps of the mitigation will report progress about the risk mitigation to the Risk Officer biweekly.

4. Risk Documentation

4.1 Risk List

The risk factors identified and managed for this project will be accumulated in a risk list. The Risk list contains the following items:

1. Personal Risk
2. Unrealistic schedules and budgets.
3. Developing wrong software solution.
4. Developing wrong user interface.
5. Continuing streams of requirement changes.
6. Shortfall in extremely furnished components.
7. Shortfall in externally performed tasks.
8. Real time performance shortfall.
9. Wrong assessment of requirements.

The ten risk items that currently have the highest estimated risk exposure are referred to as the project's Top Ten Risk List.

4.2 Risk Data Items

The following information will be stored for each project risk:

- **Risk ID**
- **Classification**
- **Description**
- **Probability**
- **Impact**
- **Risk Exposure**
- **First Indicator**
- **That risk is becoming a problem**
- **Mitigation approaches**
- **Owner**
- **Date due**
- **Contingency plan**
- **Contingency plan trigger**

4.3 Closing Risk

A risk item can be considered closed when it meets the following criteria:

The planned lessening actions have been completed and the estimated risk exposure of probability time's impact is less than 2.

5. Activities

	Task	Participants
Risk Identification	State the techniques that will be used to identify risk factors at the beginning of the project and on an on-going basis. This may involve a formal risk assessment workshop, a brainstorming session, and interviews at the beginning of each life cycle phase. Describe any consolidated lists of risk items that will be used to identify candidate risks for this project.	**Risk Officer**
	The Risk **Officer** will assign each risk factor to an individual project member, who will estimate the probability the risk could become a problem and the impact this risk on either scale of units of dollars or schedule days, as indicated by the Risk Officer)	**Assigned Project Member**
	The individual analyzed risk factors are **collected, reviewed,** and **adjusted** if necessary. The list of risk Factors are sorted by descending risk exposure.	**Risk Officer**
	The top ten risks, or those risk factors having an estimated exposure greater than *<state exposure. Threshold>* are assigned to individual project members for development	**Risk Officer**

	and execution of a risk mitigation plan.	
	For each assigned risk factor, recommend actions that will reduce either the probability of the risk materializing into a problem, or the severity of the exposure if it does. Return the mitigation plan to the Risk Officer.	**Project Members**
	The mitigation plans for assigned risk items are collected into a single list. The completed **Top Ten Risk List** is created and made available for the management.	**Risk Officer**
	Each individual who is responsible for executing a risk mitigation plan carries out the mitigation activities	**Assigned Individual**
	Constructive Cost Model (COCOMO)	**Risk Officer**
	The status and effectiveness of each mitigation action is reported to the Risk Officer every two weeks.	**Assigned Individual**
	The probability and impact for each risk item is reevaluated and modified if appropriate for risk management.	**Risk Officer**
	If any new risk items have been identified, they are analyzed as were the items on the original risk list and added to the risk list.	**Risk Officer**
	The Top Ten Risk List is regenerated based on the updated probability and impact for each remaining risk.	**Risk Officer**
	Any risk factors for which mitigation actions	**Risk Officer**

	are not being effectively carried out, or whose risk exposure is rising, may be escalated to an appropriate level of management for visibility and action.	
	If the project will be storing lessons learned about mitigation of specific risks in a database, describe that database and process here and indicate the timing of entering risk-related lessons into the database.	**Risk Officer**

5.1 Schedules for Risk Management Activities

Risk Identification	A risk workshop will be held on approximately 5 June 2006.
Risk List	The prioritized risk list will be completed and made available to **the project team** by approximately 5 June 2006.
Risk Management Plan	The risk management plan, with mitigation, avoidance, or prevention strategies for the top ten risk items, will be completed by Approximately 13 June 2006.
Risk Review	The Risk Management Plan and initial Top Ten Risk List will be reviewed and approved by the Project Manager on approximately 11 May 2006.
Risk Tracking	The status of risk management activities and mitigation success will be revisited as part of the gate exit criteria for each life cycle phase. The risk management plan will be updated at that time

6. Risk Management Budget

6. Risk Management Budget

Based on Meeting with Customer

7. Risk Management Tools

RiskTrack Version 5.0

7.1.1 Introduction

Risk Track is a Risk management tool from Risk Services and Technology. It allows the identification of different kinds of risks that may occur during the different phases of software project development. It also allows the specification of the probability of these risks. The interface is more attractive and easy to use. It does not use the rather outdated spreadsheet like interface which the other risk management and management software use. To start a new project, first it provides a screen for project definition where we can specify the project title, creation date, project description, project manager, project leader, risk, mitigation parent and mitigation. Project ID is generated automatically.

We can also add, modify and delete all possible users, phases, risk class, risk cause, attributes, objectives, risk status, and risk types that can occur during the development of the project. After specifying all these, we can add a new risk through the **Add Risk function**.

In the add new risk screen you can give the Risk name, risk ID, and select the risk status, class, cause, type and phase. You can also provide a risk statement and its consequences, the risk probability, At Risk Cost, Risk exposure, mitigation exposure,

mitigation exposure, cost allocation, assigned to, date assigned on, assigned by, and action date. You can also add a mitigation using the add mitigation title screen. Here you can give the mitigation title, the effectiveness, risk exposure, cost of mitigation, mitigated exposure, cost allocation, assignee, assigned by and action date while the mitigation ID, creation date, created by, modification date and date assigned on are automatically generated. There is also a mitigation screen where we can see the cost, slip and effect on performance.

7.1.2 Usability

Risk Track is very easy to use software. It does not use the spreadsheet like interface rather it uses a simple interface where you provide input through input boxes and dropdown lists. It generates easily comprehendible reports, which are also a plus point of the software.

7.1. 2 Strength

Its strength lies in its ease of use and straight forwardness. It also covers all the phases of Risk Management Process.

Database Description

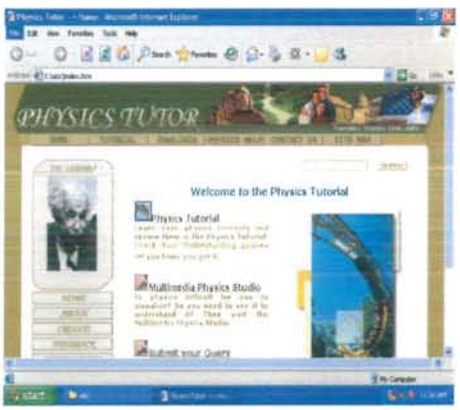
Chapter: **4**

About this chapter

This chapter sums up the Database tables along Their type & description.

This chapter includes:

- Database description
- Platform
- Database Connectivity Type
- Short Description of Table



Database		
Name	Physics Tutor	
Introduction	It contains all information regarding Physics tutor.	
Platform	Window XP	
Connectivity	OLEDB	
No	**Table Name**	**Description**
1-	Administrator	This table contains the admin user name & password, Admin user can use the admin services by entering the user name & password.
2-	Topic Configuration	This table includes the options for the topic such as Font Color, Font Size,Url Color, Number of Topics per page etc.
3-	Category	Category table contains the main Chapter or Topics that include in this tutorial.
4-	Quiz	Quiz Table contains the questions enter in the quiz having four number of choices.
5-	Topic	In topic table name of topic, its short & full description is provided.
6-	Registration	This table includes all the information given by the visitor at the time of registration to become the member of our site.

Data Dictionary

Administrator			
FIELD NAME	**DATA TYPE**	**SIZE**	**DESCRIPTION**
LoginID	Text	15	Id of the administrator
Password	Text	15	Password of the administrator.

Topic Configuration			
FIELD NAME	**DATATYPE**	**SIZE**	**DESCRIPTION**
No _of _records_page	Number	Integer	No of records /page
Message_char_no	Number	Long Integer	no of character of message
Email_Address	Text	50	Email address
Email_notify	Yes/No	True/False	Email notification
Mail_component	Text	10	Mail component
Mail_server	Text	60	Mail server
Code	Yes/No	True/False	show the code existence
Title_image	Text	70	Title image
Cookie	Yes/No	True/False	cookies
Ip_bocking	Yes/No	True/False	show either IP is block or not.
No_of_preview_item	Number	Long Integer	Show the number of preview item

Topics			
FIELD NAME	**DATA TYPE**	**SIZE**	**DESCRIPTION**
Topicid	Auto number	Long integer	This show the id of the topic.
Topic name	Text	100	Topic name is mention here
categoryid	number	Long integer	Show category number from which this topic belongs.
Topicdesc	memo		Short description
Topicfull	memo		Detail description

Category			
FIELD NAME	**DATA TYPE**	**SIZE**	**DESCRIPTION**
categoryid	Auto number	Long	Show the number of the category
Categoryname	Text	50	Category name
Categorydesc	memo		Category description

Quiz			
FIELD NAME	**DATA TYPE**	**SIZE**	**DESCRIPTION**
Qno	Number	Long	Quiz number
quiz	Text	255	Quiz question
Ch1	Text	50	Choice 1
Ch2	Text	50	Choice 2
Ch3	Text	50	Choice 3
Ch4	Text	50	Choice 4
ans	number	Long	Correct choice number is store in this field.

Rgistration			
FIELD NAME	**DATA TYPE**	**SIZE**	**DESCRIPTION**
userRegNo	Number	Long	User registration number
Usrname	Text	50	User name
userFatherName	Teat	50	User father name
userLoginId	Text	50	Login id of the user
userPassword	Text	50	User Pssword
userEmail	Text	50	User email
userAdd	Text	50	User address
userPhRes	Text	50	User residence phone number
userPhCell	Text	50	User cell number
UserSex	Text	50	Sex
userInterests	memo		User interests

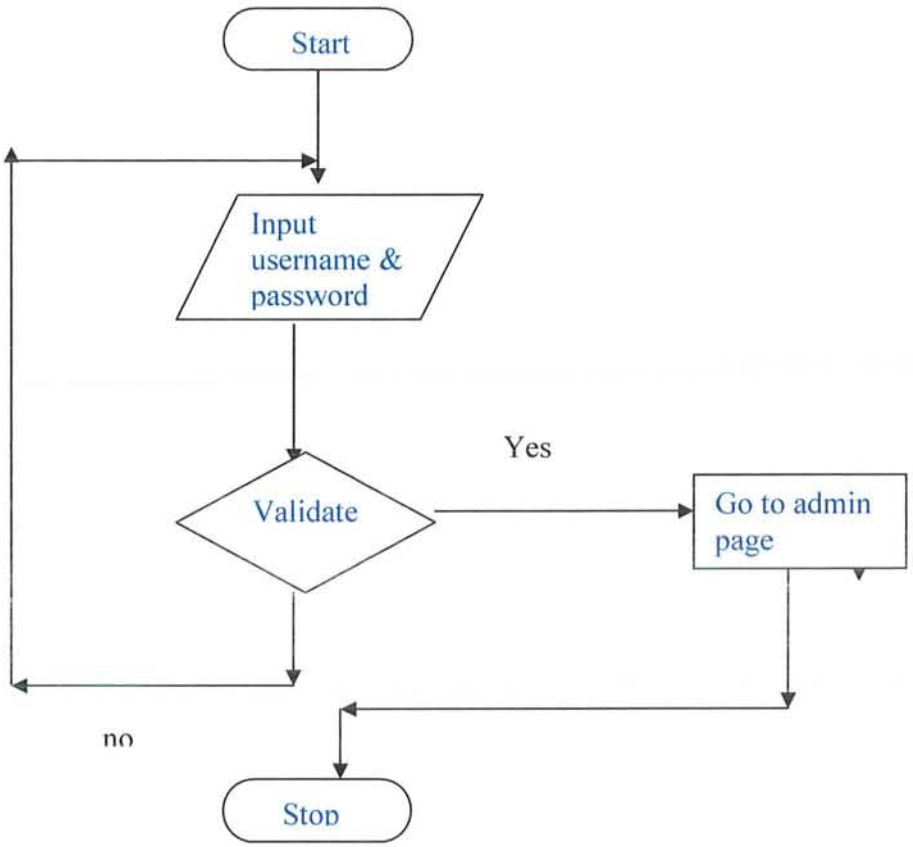
System Design Specification

Chapter: **5**

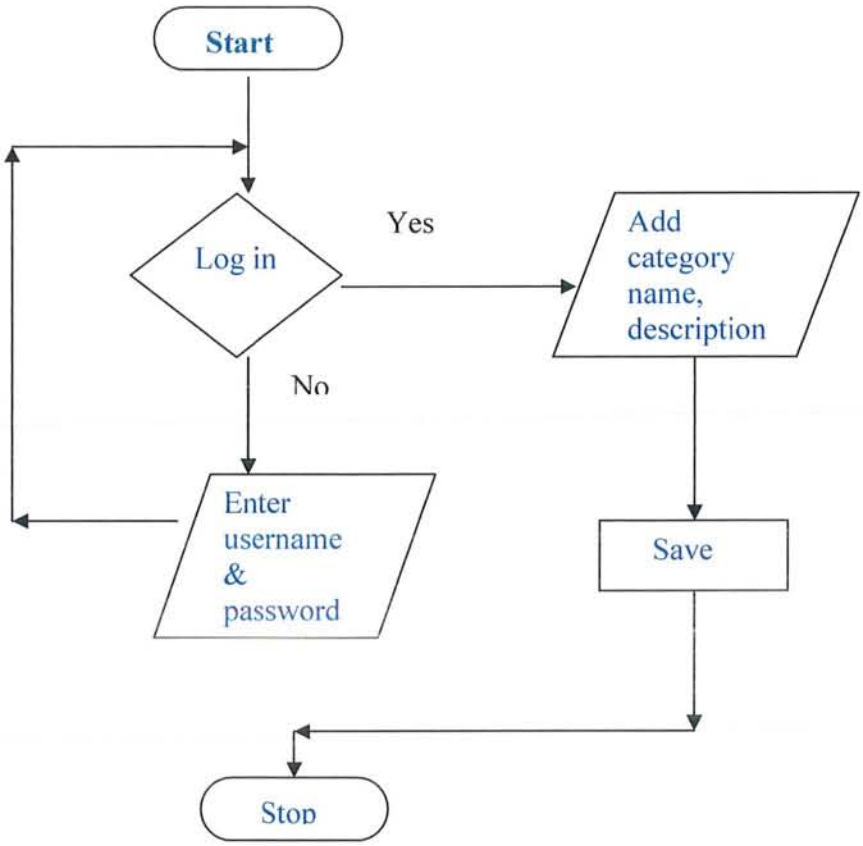
This chapter includes:

The dataflow diagrams of Each service provided in This website.

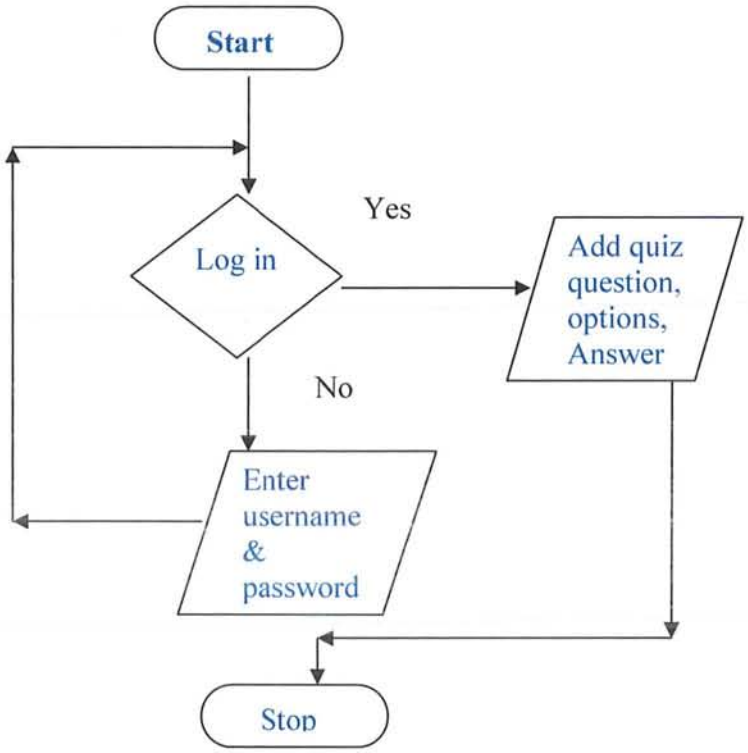
Physics tutor.com


Start
Input username & password
Validate
Yes
Go to admin page
no
Stop

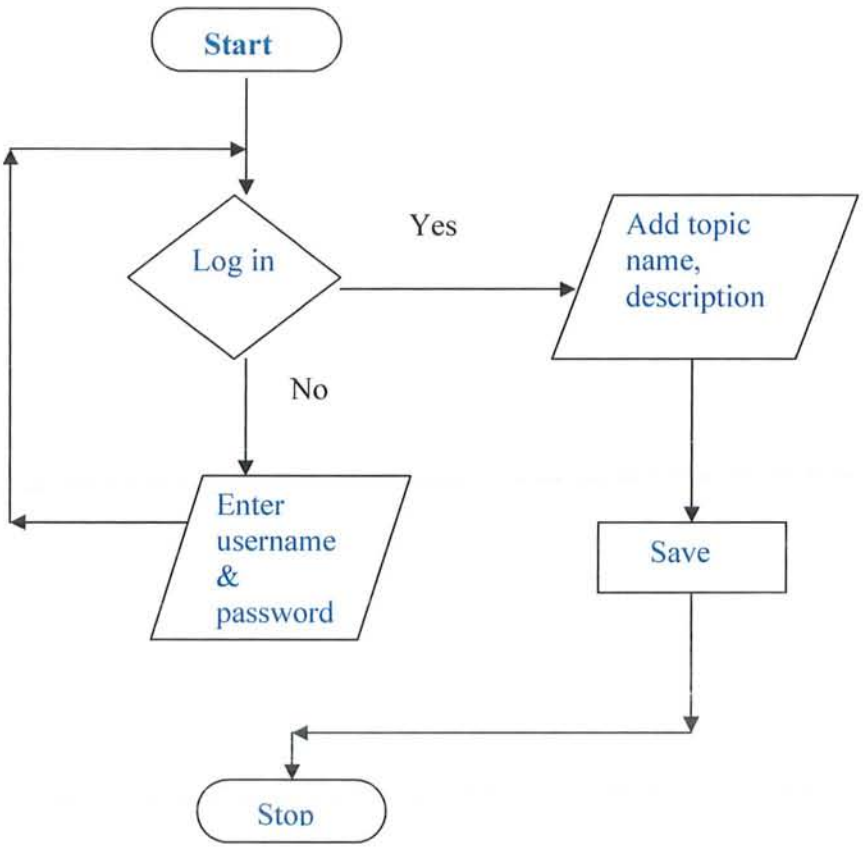
Admin Login



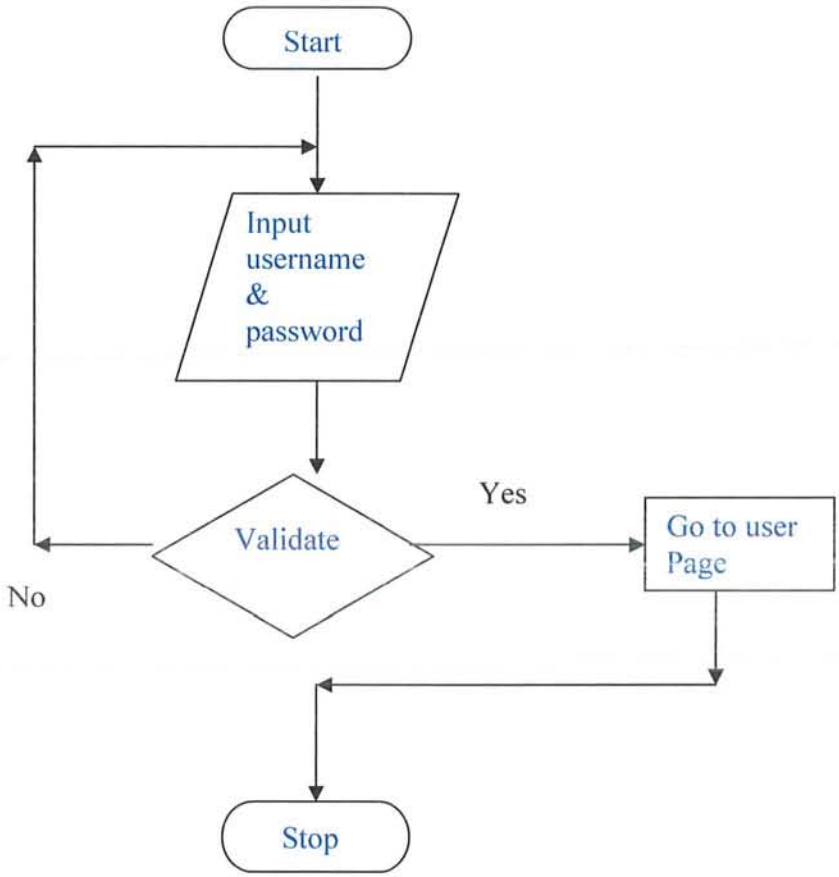
Add Category


Start
Log in
Yes
Add quiz question, options, Answer
No
Enter username & password
Stop

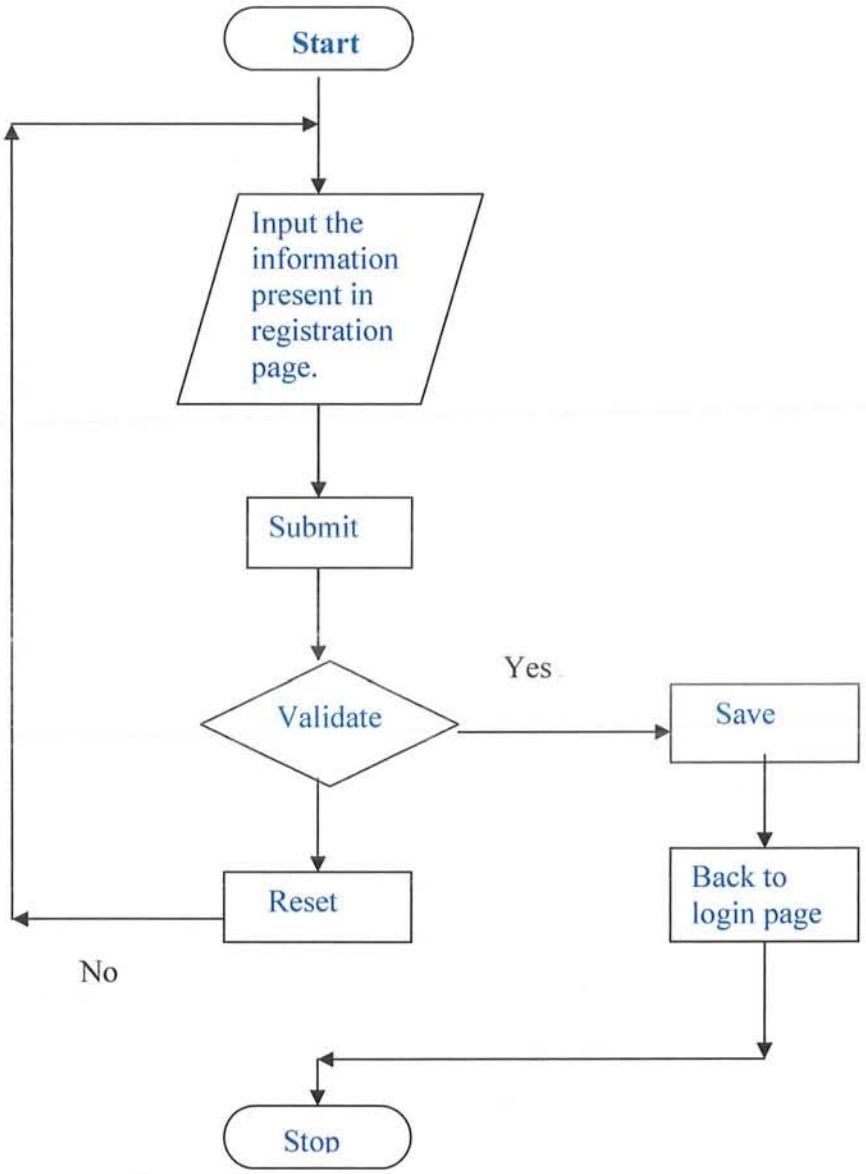
Add Quiz


Start
Log in
Yes
Add topic name, description
No
Enter username & password
Save
Stop

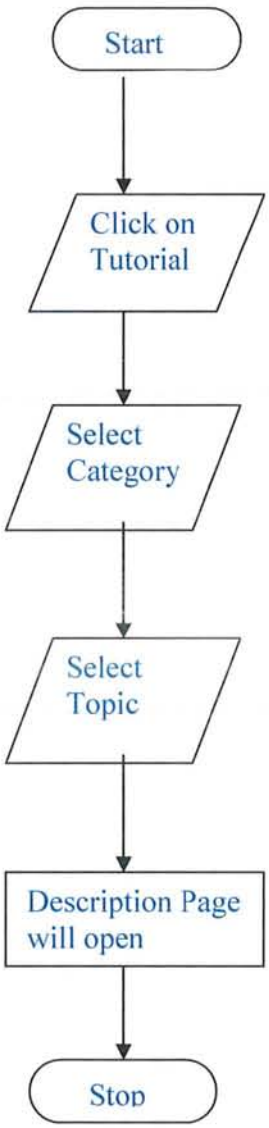
Add Topic


Start
Input username & password
Validate
Yes
No
Go to user Page
Stop

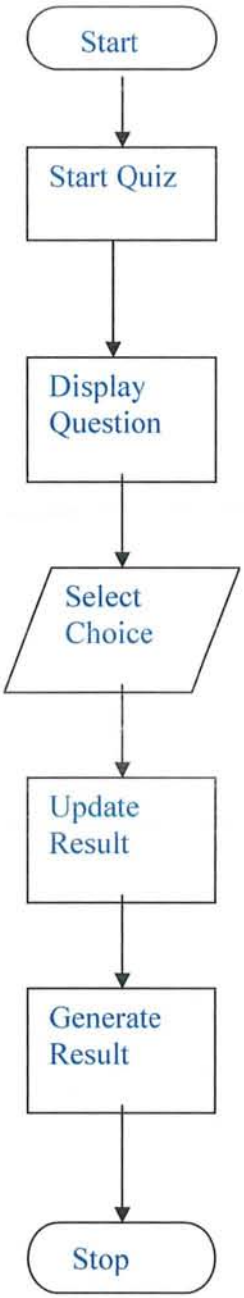
User Login



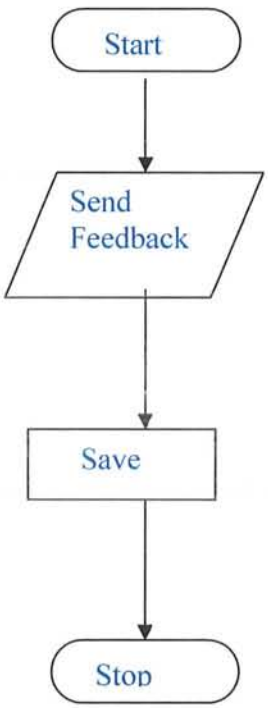
Registration


Start
Click on Tutorial
Select Category
Select Topic
Description Page will open
Stop

Add Topic



Attempt Quiz



Feed Back

Test Management Plan

Chapter: **6**

About this chapter

This chapter sums up the Activities of the testing Plan of the physics tutor Website.

This chapter includes:

- Testing Plan
- Team of Testing
- Decomposition of Modules
- Level of testing
- Desc. Of Plan
- Test cases

Software Test Plan

Product Visualization

The physics tutorial is an online physics tutorial written for high school physics students .The basics purpose of this site is to provide the information-updated lectures, their help, explains different phenomena with the help of quick time movie, and quizzes (that help the students to check their understanding) on one platform.
It provides complete information to student about the updated lectures, about different type of help. It helps the students to learn basics physics concept and review them in physics tutorial. Check your understanding quizzes let them know they got it.

With each question provide its correct answer, so if the student is not able to choose the correct answer, then he can see the correct answer by depress the mouse on the pop-up menu next to each question. .

Explain each lecture with the help of relative diagram that help the students to understand he topic in a convenient way.
Other way to teach the students that is used in this system is through the quick time movies.
Feedback is anther valuable part that is provided in this tutorial through which all the user feedback via the electronic mail. Suggestions and constructive criticism is pondered and evaluated and often leads to the revision of the pages.

Time Limit

We have a time of eight, so we will take Six days for testing, as we don't require an exhaustive testing.

Team for Testing

Our testing team is composed two members including

No	Name	Contribution
1.	Asmaa Awais	User Registration, Login, Validation and modification
1	Asmaa Awais	User services
.	Same above	Updating of lecture
	Same above	Physics help section
	Same above	Downloads
	Same above	Quiz
	Same above	Feed back
	Same above	Related Administration section

Decomposition of Modules

I have divided project into different modules for the testing purposes being considering our manpower, resources and expertise. The modules for physics tutor are

1. **User Registration, Login, Validation and modification**
2. **User Services**
3. **Updating of lecture**
4. **Physics help section**
5. **Downloads**
6. **Quiz**
7. **Feed back**
8. **Related Administrative Tasks**

Level of Testing

We require a medium level of testing for physics tutor, so i will perform testing on this level and try to make it a quality product. I will also try to find as many bugs as i can and try to achieve the goal.

Description of Plan

As far as the overall description of our testing plan is concern i have planned it by considering different factors including

- Nature of product
- Tool used for development
- Platform of the product deployment
- Development and design constraints
- User consideration
- Architecture of software
- Resources constraints

TESTING

1. Introduction

1.1 Product Name	Version
Physics tutor	1.0

1.2 Test Cases Developed by		
No	Name	Contribution
1.	Asmaa Awais	User Registration, Login, Validation and modification
2-	Asmaa Awais	Lectures, help section, downloads, contact_us Site_map
3-	Same as above	Administration section

1.3 Document Generated by	Signature
Asmaa Awais	Asmaa

1.4 Date		
Saturday	June	2006
Day	Month	Year

1.5 Test Report Reference No
786/physics tutor/03/01

2. Test Cases:

2.1 Test Case	
Test Case No	1
SRS Functionality Code	001
Functionality	User Registration, Login, Validation and modification
Description	This module is related to the validation of the user for login, user registration, and modification in user's registration information. When the user enters information for login it will initially check, is it valid user or not. If valid then allow him/her to login other wise a message will be generated displaying that invalid user. When new user enters his/her registration information it will initially check, is the information given is valid or not or user name is already exist or not. User can modify/edit his personal or registration information after successful login.

Test Results

No	Input	Expected Output	Observed Output	Discrepancy
1.	Login info.	Valid	Login	Nil
2.	Login info.	Invalid	Not login	Nil
3.	Administrator login info.	Valid	Login	Nil
4.	User login	Valid	Login	Nil
5.	New User Registration Info	Valid	Registered then Login	Nil
6.	New User Registration Info	Registered	Not Registered (Try Again)	Nil
6.	Edit User Registration Info	Update	Try Again	Nil

General Observations

- Being a database project, storage of Administrator and User info was very critical and significant.
- The client is particularly interested in friendly user interface and correct output.
- The user will initially be checked, is he/she valid or not. If valid then allow the user to login and use his/her account.
- If new user registration, the information entered by the user will initially be checked is user name entered is already exist or not and all the information is valid or not. If valid then allow the user to be registered and automatically login to use his/her account.
- Already registered can edit his/her personal profile after successful login along with additional services.

Tested By

Name	Asmaa Awais
Date	31/5/2006
Signature	

2.2 Test Case	
Test Case No	2
SRS Functionality Code	002
Functionality	Feed back
Description	Feedback is another valuable part that is provided in this tutorial Through which the user feedback via the electronic mail. Suggestions and constructive criticism is pondered and evaluated and often leads to the revision of the pages

Test Results

No	Input	Expected Output	Observed Output	Discrepancy
1.	Subject	Valid	Valid	Nil
2.	Comments/Query	Valid	Valid	Nil
3.	Send	Save	Save	Nil

General Observations

- Member wants to query or suggest changes to your web site.
- Member will request for Feedback Page.
- Member will specify the Subject and Message in the given Feedback form.
- Message will be stored to the database.

Tested By	
Name	Asmaa Awais
Date	2/6/2006
Signature	

2.3 Test Case	
Test Case No	3
SRS Functionality Code	003
Functionality	Tutorial
Description	User can get the information from the updated topics, where ever and whenever they want. topics contains the detail description about the topic With each topic provide some question through which the students can judge his/her level of understanding. With each topic its relevant picture is provided that explain the topic in proper way.

Test Results

No	Input	Expected Output	Observed Output	Discrepancy
1.	Select tutorial	Selected tutorial	Tutorial Active Topics	Nil
2.	Select Active Topics	Selected Topic	Topic detail	Nil
3.	Select topic by category.	Topic By category	Active topic	Nil
4.	Post New category	Select Forum	Database will be updated	Nil
5.	Post Reply	Select category	Database will be updated	Nil

General Observations

- Users can select any topic from added topics .
- Users can select category to view relative topics.
- To see the required topic click on the topic name.
- A full description page will open.
- Now to move to next page ,user can jump to the next page by clicking the page number that is present at the bottom of the page..

Tested By

Name	Asmaa Awais
Date	3/6/2006
Signatures	

2.4 Test Case	
Test Case No	4
SRS Functionality Code	004
Functionality	Help
Description	In this section that resources provides that will help you master basics physics principles. Physics terms Physics formula Some practice section.

Test Results

No	Input	Expected Output	Observed Output	Discrepancy
1.	Select help section	Open the help list	Help list will open	Nil
2.	Select the required help topic	Open the topic help page	Page will be opened	Nil

General Observations

- The person who wants to use the help section. Click the help section
- .select the required help topic.
- Page will opened that contains the whole description of related topic.

Tested By

Name	Asmaa Awais
Date	2/6/2006
Signature	

2.5 Test Case	
Test Case No	5
SRS Functionality Code	005
Functionality	Quiz
Description	Including an online objective type quiz on a web lesson allows the students to • Engage in a meaningful self-assessment. • Assesses themselves at their convenience in terms of time and place. • Gain immediate feedback. • Recognize their strength and weakness.

Test Results

No	Input	Expected Output	Observed Output	Discrepancy
1.	Click the quiz	Quiz open	Quiz page will display	Nil
2.	Select options answer	Selected options	Option will be selected	Nil
3.	Submit	Submitted	Result will display	Nil

General Observations

- ❖ Enter in the quiz section user click on the quiz button.
- ❖ Select the quiz.
- ❖ Choose the answers.
- ❖ Submit the quiz.
- ❖ After checking the answers with the database the result will be generates.

Tested By	
Name	Asmaa Awais
Date	3/6/2006
Signature	

2.6 Test Case	
Test Case No	6
SRS Functionality Code	006
Functionality	Searching
Description	User can search his required topic or information through search engine He can search either by entering the • Category name • Topic name Or if he enter any word in the search field, search engine provide the detail description of that word

Test Results

No	Input	Expected Output	Observed Output	Discrepancy
1.	Enter the topic name in search field. And click search button.	Opened the description page.	Description page will open.	Nil
2	Enter the category name in search field. And click search button.	Opened the description page.	Description page will open.	
3.	Enter the word/term	Opened the description	Description page will open.	Nil

	in search field. And click search button.	page		

General Observations

- Through search engine we can search topic, category or word/term by entering topic ,category name, or any word/term.
- Click the search button.
- The respective result will generated.

Tested By	
Name	Asmaa Awais
Date	3/6/2003
Signature	

2.7 Test Case	
Test Case No	7
SRS Functionality Code	007
Functionality	Editing profile
Description	Editing profile is another service that provides the facility to user to change his given information by using the editing profile option. To edit the profile user should enter his • User name • Password If the username and password matches, then user can change his given information.

Test Results

No	Input	Expected Output	Observed Output	Discrepancy
1.	Click the edit button.	Open the form	A form will opened	Nil
2	Enter the information which we want to edit.	entered	entered	
3.	Click the submit button	Submitted.	Database will be updated	Nil

General Observations

- User who want to edit his/her profile , click the edit button.
- A form will open
- Now enter the information which he/she wants to edit in respective field.
- Click he submit button.
- Database will be updated.

Tested By	
Name	Asmaa Awais
Date	3/6/2006
Signature	

2.8 Test Case	
Test Case No	8
SRS Functionality Code	008
Functionality	Related Administrative Tasks
Description	This module is related to the maintenance and modification of different records related to User administration, lecture administration, topic administration, and quiz administration.

Test Results

No	Input	Expected Output	Observed Output	Discrepancy
1.	Configure topic	Configured	Database will be updated	Nil
2.	Add New topic	Added	New topic Added	Nil
3.	Delete Existing topic	Deleted	Topic Deleted	Nil
4.	Edit Existing topic	Edited	Topic Edited	Nil
5.	Add New help section	Added	New help section Added	Nil
6.	Delete Existing help section	Deleted	Help section Deleted	Nil
7.	Edit Existing help section	Edited	Help section Edited	Nil
8.	Configure quiz	Configured	Database will be updated	Nil
9.	Add new quiz	Added	Quiz added	Nil
10.	Delete the quiz	Deleted	Quiz deleted.	Nil

General Observations

- In this module the Administrator must have to login in order to Maintain and modify all of its entire functionality. This module is related to the maintenance and modification of different records related to User, login registration, topics,quiz, help,Email Feed Back etc records. By using this module Administrator can add new records and can delete and modify the existing records of all the Modules infect configuration of all the Modules

Tested By	
Name	Asmaa Awais
Date	5/6/2006
Signature	

Tools & Technology

Chapter: 7

bout this chapter

is chapter sums up the tivities of the tools & chnology used to develo ysics tutor

This chapter includes:

- Dynamics Web Pages
- Dynamics VS Statistics Web I
- Active Server Pages (ASP)
- Server Side Scripting
- Client Side Scripting
- ASP Project Model
- Ado's

9.1 What Is A Dynamic Webpage?

If you surf around the Internet today, you will see that there are a lot of static web pages out there. A static web page is essentially a page whose content consist of some HTML pages that was typed directly into a text editor and saved as an HTM or HTML file. Thus the author of the page has already completely determined the exact content of the page.

Static web pages are quite easy to spot, some time you can pick them out by just looking at the content of the page. The contents (e.g. text, images hyperlink etc) and appearance of the static web page is always the same regardless of who visit the page, or when they visit, or how they arrive at the page, or any other factors.

9.2 Static Pages Vs Dynamic Pages

- ✓ Lets think for a moment how a static, pure HTML page finds its way into a client Browser
- ✓ A web author writer pages composed of pure HTML, and save it within an HTML file.
- ✓ Some time later a user type a page request into a Browser, and the request is passed from the Browser in to the web server.
- ✓ The web server locates the .html page.
- ✓ The web server sends the HTML stream back across the network to the Browser.
- ✓ The Browser processes the HTML and displays the page.

9.3 The Limitations Of Static Web Pages

If we want to enhance our page so that it displays the current time or a special message that is personalize for each user. It will not be possible using HTML alone.

9.4 Active Server Pages (ASP)

So far we have analyzed the difference between static and dynamic web pages , but we have barely mentioned the active server pages (ASP) , here is a simple definition of ASP.

Active Server Pages is a technology that allows for the programmatic construction of HTML pages just before they are delivered to the Browser.

In other words ASP we can write a set of instructions that can be used to generate HTML, just after the web page has been requested by a client, and just before it delivered .It is a perfect tool for any HYML write to add to the toolkit, because it gives us the power and flexibility to generate fresher HTML and ultimately to reduce more spectacular, interactive, personalized, up-to-date web pages.

How can we describe ASP? It is not a language like other high level languages like (Pascal & C++) although it does make use of existing scripting languages such as VB Script and Java script, more ever it is not really an application like Front page and MS Word, Instead we describe ASP using rather a more ambiguous term technology.

9.5 ASP Code Is Browser Independent

ASP code is always executed on the web server, and generates pure HTML. The client machine does not need to provide any kind of ASP support at all. Infact the

web Browser handles .html pages an ASP page in exactly the same way because from the Browser point of view, the process involves the sending the page request to a web server and receiving a stream of pure HTML.

The Browser is blissfully ignorant of any ASP processing that might be happening on the server, it only ever get to see pure HTML, so dynamic ASP pages are just view able in internet explorer, Netscape Navigator and other Browsers as their static .html counter parts.

9.6 Advantages Of Using A Server Side Technology

We have stressed that ASP is processed on the web server to generate HTML. While HTML is processed solely on the Browser, so what see what are the main advantages of performing actions on the web server first? Here are some main advantages of that:

- ✓ Allow you to run programs in programming language that are not supported by your Browser.
- ✓ Enable you to program dynamic web applications Browser independently, without recourse to client side programming features such as Java applet, Dynamic HTML, Active X control, all of which are Browser specific.
- ✓ Can provide the client (Browser) with data that does not reside at the client.
- ✓ Often makes for quicker loading time than with client side dynamic web technologies such as Java applet or Active X controls, because at the en you are actually downloading a page of HTML.
- ✓ Provides improper security measures, since you can write code, which can never be viewed, from the Browser.

That is not to say that the ASP pages are perfect e.g. they increase the workload on the server so if your web site becomes popular you may need to invest more hardware, but this is true, server-side functionality outweigh any disadvantages.

9.7 Virtual Directories

How does this relationship works? In fact it can work by creating a second directory structure on the web server machine, which reflects of our web site.

The first directory structure is what we see when we open windows explorer on the web server these are known as physical directories (e .g c:\My document)

The second directory structure is the one that reflects the structure of the web site. This consists of hierarchy of virtual directories. We use the web server to create virtual directories, and to set the relationship between the virtual directories and the real directories.

Virtual directory is in fact a nickname or alias for a physical directory that exist on the web server machine. The idea is that when the user Browser to the web page that is contained in the physical directory on the server. They don't use the name of the physical directory to get there instead; they use the physical directory nickname.

To see how this might be useful, consider a web site that publishes news about many sporting events. In order to organize this web site carefully the web master has to build a physical directory structure on the hard disk, which looks like this.

Now to visit this web site in order to get the latest news on the javelin event in the Olympics: If the URL of this web site were based on the physical directory structure, then it would be something like this:

http://www.oursportsite.com/sportsnews/atletics/field/javelin/default.asp

It's the webmaster who can understand this directory structure, but its fairly unmemorable web address! So to make it easier for the user, they web master can assign a virtual directory name or alias to this directory its act just like a nick name of this directory

Let's assign the virtual name javelin news to the c:\inetpub\...\javelin\directory. Then the URL of the latest javelin news would be as:

http://www.oursportsite.com/javelinnews/default.asp

Not only thus this saves the user from long and wide URLs but it also serves as a good security measures, because it hides the physical directory structures from all the web site visitors.

9.8 Microsoft FrontPage

It comes as a part of MS office 2000 suite. It is one of the tools for creating and designing web pages but it does not offer all functionality of visual Interdev. It is ultimately a weaker but easier application to use.

It offers three views of the web page. The normal vie gives a WYS? WYG page creation view, which allows you to write pages without having to code to HTML explicitly. The HTML view allows you to write your code explicitly and the preview tabs gives a quick view of what a page should look like in a Browser.

Again a normal and a preview tabs are unable to process any ASP. In order to view the results of ASP script in Front page select file view in the Browser to see what your processed Asp will look like.

9.9 Notepad

Certainly helps in sustaining its popularity it does not highlight the ASP in any way and also it doesn't generate any extra code even having less additional functionality. It is still very popular in use due to its simplicity and less complexity in Windows 2000. Notepad offers a "Goto" feature, which helps in quickly moving around the document using the line number.

It does not really matter which editor is to be used. We will avoid any attempt to provide a tutorial on additional tools at its beyond the scope of this book.

9.10 Identifying a Script

How do we identify the script when it is embedded in a small or large amount of pure HTML? Because the ASP which will be enclosed in a special tag < %.....%> e.g. if we want to print a time on a web page we will use the following piece of code:

The current time is <%=time %>

Every thing within<% and %> this tag is assumed to be the ASP and a sent to the ASP script host for processing.

But there are other kinds of scripts , what are not ASP code , but which still need to o be distinguish from the HTML and the text in which they are embedded . For this reason HTML provides a special tag called <script> tag e.g.

```
<SCR IPT LANGUAGE =VB SCRIPT RUNAT=SERVER>
        Response.Write time
</ SCRIPT>
```

Any thing that lies between the opening and the closing tags <SCRIPT> and closing tag </SCRIPT>is dispatched for processing to the appropriate script engine, according to the instructions given by the SCRIPT tags attributes.

9.11 Server-Side Scripting

A script that is interpreted by the web server is called a server side script . A server side script is an instruction set that is processed by the server and which generates the HTML is sent as a part of the HTTP response to the browser.

As we have gathered by now ASP is server side scripting, however it is not true to say that all server side scripting as not ASP as we will elaborate in the following section.

If we are going to place any kind of server side script so that the server can identify them as a server side scripts and hence arrange for them to be interpreted correctly. There are two ways to label server side scripts

- ✓ Use the < %...%> server script delimiters, which donate ASP code.
- ✓ Use the HTML< script> tag specifying the RUNAT= SERVER attribute within the tag. If a tag look this is found within an ASP file, then it is treated as an ASP. If such a tag is found within an .html file, then it is treated as a non-Asp client side script.

We must highlight an important difference here namely that the choice of HTML or ASP for the suffix of the web page file is not trivial. It really does have a bearing on how your code is processed. If you have any ASP at all, you can label it, using either of the techniques used above. How ever in order to ensure that it is processed as an ASP then it must be included as a part of the ASP file.

Within an HTML file, it is only possible to use the <SCRIPT>…</ SCRIPT> tags. Script contained within these tags will be interpreted as non-ASP script. If you try to include any ASP script within these tags or if you write <%...%>into an HTML file, then the script will not be executed and your web page would not look the way you intended .

9.12 Client-Side Scripting

The script that is interpreted by the browser is called a client side script. A client side script is also an instruction set but is not processed by the web server. Instead it is sent to the Browser (as part of the HTTP response) and is processed by the Browser, the Browser on the monitor then displays the result.

Client side scripting is not directly related to ASP at all, it involves scripting that will be processed by the Browser. When a web page source contains a client side script, it does not attempt to process the script; instead, it simply downloads the script to the Browser as part of the HTTP response, and assumes that the Browser will know how to deal with it.

When the Browser receives the HTTP response, it needs to process the HTML contained within, which describe how it is to display the page. The Browser must also take care of the client side script that when downloaded as part of the page.

9.13 Advantages of Client-Side Scripting

- ✓ The main advantage of client-side scripting over pure HTML is that it allows the developer to create the more functional, interactive web pages.
- ✓ Response time is often quicker because the script is interpreted on the Browser machine, there is no network involves and there is no round – trip to ask the server to calculate things.
- ✓ Executing script on the Browser reduces the web server's workload as less script will be executed on the server, and it can be more advantageous when lots of people use web site.

9.14 Disadvantages of Client-Side Scripting

The main disadvantage of client side scripting is teat we can't depend on the functionality of the Browser to support the script we write. If you have two different client machines hosting two different Browsers, and you view a page containing client side scripting on each independently then you can reasonably expect the results to be quite different. This means that the client side scripting is Browser specific because some browser does not support certain scripting language e.g.

- ✓ Recent version of Internet explorer comes with script engines for both VBScript and Jscript, where as the older version of the Browser by default come with the older version of the scripting engines.
- ✓ Netscape navigator comes with Java script engine only so there is no support for VBScript.

Another potential disadvantage of client-side scripting is that the code in your client-side scripts is completely visible to the user. By selecting view source option in the Internet explorer will show how the HTML source code plus client – side scripting

used in that page. If you want to keep your client – side script to be hidden then you will have to use complex encryption techniques.

9.15 Alternatives to ASP

What other technologies could do the same job as ASP? Or if Microsoft provides ASP then what are the non-Microsoft alternatives?

ASP is only one of several technologies that can be used to create more dynamic and interactive web pages. Microsoft is not the only organization pulling in the direction of interactive web sites many of its competitors are also chipping away at the boundaries of interactive web capability.

Interactive web sites can be build with a combination of languages and technologies you can use any one of these alone, or any number of them together and they are all independent (in the sense that you do not have to learn one technology before you can learn another). Some exist on the client side while other on server side.

9.16 What Is Active Server Pages Object Model?

In the Active Server Pages programming model, there is a wide range of functionality that is access able to the programmer. ASP helps us to track the site of a user dynamic generate HTML output and take data from forms to be inserted into a data base. All of the functionality makes ASP a rather complex beast. Microsoft was task with finding the best compromise between offering a simple programming model and providing access to all of the power that ASP provides. These objects were then related together into what is known as an object model.

An object model is a representation of a set of objects and there relationships to one another. These relationships can take to form of containment, where one object is embedded inside of another or they can take the form of a parent child relationship, where one object has a set of child objects associated with it.

9.17 Object Model Structure

Seven objects make up the core of Active Server Pages. These are known as the built-in objects. These objects are:

- ✓ Server Object
- ✓ Application Object
- ✓ Session Object
- ✓ Request Object
- ✓ Response Object
- ✓ Object Context Object
- ✓ ASP Error Object

Each of these objects interacts with the different parts of the ASP system. This chart shows how they are related to each of them, and how they are related to the client and the server.

9.17.1 The Server Object

The server object is an object that provides a home to a miscellaneous ragbag of properties and methods that can be send in almost every Active Server Page. While seemingly unrelated, these methods and properties are in fact abstractions of the properties and methods provided by the web server itself. This object will allow you to do things such as:

- ✓ Set the amount of time a script can run before an error occurs.
- ✓ Take a user supplied string and encode it into an HTML format.
- ✓ Convert a Virtual path to a physical path on the server.
- ✓ Take a user supplied string and encode it into the proper format for a Uniform Resource Locator (URL) string.
- ✓ Create an instance of an Active X component. Change the course of execution by jumping to another page using the transfer and execute properties.

These method and properties are provided as utility functions for you to use in your pages. They are not directly used to affect the display of the page, but they still provide value able support in creating Active Server Pages

9.17.2 Application Object

As the web is moving from just serving up pages to providing access to dynamic information from a wide range of systems, the site that a user must access are beginning to look more like a traditional desktop application.

Since these pages are functioning together as an application, naturally the developer would want some control over the application as a whole; this is the responsibility of an application object. Let's just introduce the few things that it does. With this object one can:

- ✓ Be notified when an application is first started, so that you can perform some startup processing.

- ✓ Be notified when an application is ending, so that you have an opportunity to perform functions to enable the application to close down clearly.
- ✓ Store information that can be accessed by all clients accessing the application.

There is the one instance of an application object for each web application running on the web server. There may be many clients accessing the same application. They each can get a reference to the same application object. Next we will look at an object that is unique to each client of an application.

9.17.3 Session object

There is one application object for each application on the web server. Every client accessing that application can get a reference to it. Each of these clients opens a session therefore each of them has a reference to a unique session object. The session on object will allow you to:

- ✓ Be notified when a user session begins, so that you can take an appropriate action for a new client.
- ✓ Be notified when a client has ended their session, this can either be caused by a time out or an explicit method called Abandon.
- ✓ Store information that can only be accessed by the particular client through out the session.

The session object is the most powerful object for continuity when using an application in Active Server Pages. One of the problem s that has existed in creating web-based applications is that the connection between the client and the server is stateless. The web server itself has no mechanism for tying a request for a page by a client back to a previous request of the page by the same client. This means that each

request that one-client makes of a web server is treated independently from the rest. While this allows for a very efficient and fast web server, it makes writing application nearly impossible.

Think of it this way if you are writing an application using a standard web server, then every request to the server must carry along with it every thing that you have done related to the application up to this point. Since the web server has no way of sending and retrieving that information, it is up to you provide it every time you make a request to the server. Sounds pretty cumbersome? Well with the session object Active Server pages allow you to store and retrieve information about the client accessing your application.

9.17.4 Request Object

When a web Browser or other client application asks for a page from a web server, this is called making a request. Along with the actual page the client wants, it can send a great deal of information to the server as well. The request object is responsible for packaging up that information to make it easily accessible to the ASP application.

The client asks the server to create an HTML page by requesting an ASP script. When the server sees this request, it interprets this type of page as an active Server page. All of the information that the client is sending along with the request is then packaged into the request object. This information is then accessible to the actual ASP script that is used to construct the page.

The information is cauterized into five sets of information. Since each set of information can include multiple individual pieces of information, each set is stored as a collection. In a collection each piece of information is sent as a name-value pair. The collection holds information about:

- ✓ The values that are provided in the URL that are send by the client. In the URL the client can include name value pairs of information after the file name. This information is stored in the collection called query string.
- ✓ If the client is sending request, then the values of the form elements are stored in anothe4 collection the form collection.
- ✓ If the web server itself has a greater deal of information about the request, response and the general information about the server itself. These are called the HTTP server variables. This information is made available as a collection as well.
- ✓ If the client is sending any cookies along with the request, these are included in their own collection.
- ✓ In addition, if the client is sending any security certificates to the server, then these are included in there own collection.

By using the information that is included with the request, along with the script code in the active server pages script file, the server can dynamically generate a page for the client to display. In order for the client to display the information, the server needs a mechanism to replay the data back to the client. This is the job of the response object.

9.17.5 Response Object

The primary features of the Active Server Pages are the ability to dynamically create web pages. The basic task needed to execute this feature is the ability to tell the client what information to displays. There are a number of different ways to shape what the

client will display. The response object exists to provide an efficient interface to control the output to the client.

The response object provides the ASP script with a set of interface that allows the script to control what information is being sent back to the client. For now we will just touch the some of the functions that the response object provides.
With the response object the ASP script can:

- ✓ Insert information into the page being sent back to the client.
- ✓ Select instruction to the Browser to create cookies on the client.
- ✓ Send the client to another page via a redirection.
- ✓ Control whether the page is sent as it is created, or it is completely build and then sent at one time.
- ✓ Control the various properties of the page such as the HTML header or the type of content.

These interfaces give the designer of the script the ultimately flexibility to decode how the information is presented back to the client.

9.17.6 Object Context Object

The object context object helps you to develop application out of components. It does this by allowing you to handles transaction from within an ASP page. A transaction is a single unit of work that must either succeed in its entirely or if its fail, must be undone completely – returning the system to the state it was before the transaction was started.

When using applications made of out of components, its common to use transitions. If for example an action handled by a particular component fails then you'd want

details of the failure and be able to take an alternative course of action. If he user tried to change the details of their bank accounts and then bombed out mid – track it would be logical to want track back to what the bank to what the bank account details were previously, before trying to change the details again or continuing on alternative course.

The second type of application that uses transactions would be one that features data processing. If some one makes an other alternative to a data base via a web page and somebody else make another alternative at the same time, you need to be able to accept one alternation, while canceling or postponing, the other. The management of these types of transactions was handled in HS 4.0 and PWS 4.0 by a piece of software known as Microsoft Transaction Server (MTS). How ever with HSS and Windows 2000, the functionality of MTS is now integrated directly into part of the windows 2000 operating system known as COM+.

The object context object allows access to MTS in order to start or terminate a transaction. We don't want to go into how it does now, this hope fully gives you an over view of this useful object.

9.17.7 ASP Error Object

The ASP Error object contains the detail of any error generated by an ASP script or by an ASP-DLL itself. Previously there was no facility in ASP for storing details of errors that occurred. ASP Error object with help from the server. Get last error method; allow more complex customized handling of error messages. It directs the user to a standard error page or to user created page depending on the option selected in MMC.

9.18 Active Server Components

Active Server components are components or DLL that come freely with ASP (as opposed to components that are wended by third parties). There are ten common components provided by Microsoft with IIS 9.0 90(although different versions of the installation can add or remove components), and many more are available from third parties. Here is a brief summary of the components and what they do:

- ✓ The AD rotator component do exactly what you might expect, it is a rotator for the Ad's that appear on your page. More specifically we use this component by supplying with a list of images, it will arrange for one of the image to be displayed on the page each time the age is requested.
- ✓ The Browser capability components references a file called browscap.ini which details the every version of every Microsoft and Netscape Browser every created it uses this information to determine whether or not the browser currently used supported frame, tables and so.
- ✓ The content linking component uses a text file to manage (and provide) links for a sequential set of web pages. It allows the administrator to provide extra information about each page in the sequence, and keeps the link in an orderly list so that they can be easily mentioned. For example, it can be predetermined order used to guide a visitor through a sequence of pages in a
- ✓ The Content Rotator component is a slimmed –down version of the Ad rotator component, which just displays text.
- ✓ The content component creates an object that persists for the lifetime of n application and can be used to store, increment or retrieve a value. Counters are manually set, unlike page counter e.g. which are set automatically, and persist until deleted.

- ✓ The logging utility component allow your application to be able to read from your LLS log file which monitor who has been connecting to your site
- ✓ The My info component is used to store personal information about the server administration.
- ✓ The page counter components provide a page counter, which increments by one each time a page is accessed. This is an automatic process, rather than a user defined one.
- ✓ The permission checker component can be used to monitor whether a certain user has been given permission to read or execute a file.

The tools component provides a set of properties that are loosely grouped under the catchall heading of miscellaneous utilities, include checks to see if a certain file exist exists or if a certain user is the owner of the site.

9.19 Universal Data Access

Any persisted collection of information is a data store. We might want to access the data contained within and use it in our web pages and other applications we are particularly interested in how we can access data stores from our ASP pages, and use there data to influence the appearance and content of our dynamic web pages.

So the question is one of how to access the data contained within these data stores. There is a problem with using ODBC here generally, the information contained within each of the other media does not fit neatly into a data base type format and more often than not, ODBC can't help us to get at that kind of data.

In other words the notation of database access is not enough to fill the dreams of universal data access; we need a way of getting at the other forms of the data too, so how can we get at the contents of your data stores quickly and easily?

Microsoft UDA strategy has yielded a technology that has the potential to access the data contained in any kind of data stores. This technology is known as OLEE-DB

9.20 What Is ADO's?

You might like to think of the Active X Data Objects (ADO) as being the interface of OLE-DB. ADO is a set of objects that allow programmers to program their data access login from languages and scripting languages. ADO is a high level model than OLE-DB, which means that it simplifies some of the complexities of programming which OLE-DB thus, ADO is much easier to use than OLE-DB.

How thus ADO fit into over all structure? The ADO layer sit neatly between the application itself and the OLE-DB layer.
In this sense we can think of ADO as being as application-programming interface. ADO is a superset of DAO and ADO is much easier to understand.

9.21 ADO Features

- ✓ Access to all type of data. Various data sources including Email, text files ISAM/VSAM databases and all ODBC data sources.
- ✓ Support Free threading-ADO supports multiple client connections through multiple threads in such away that these threads don't interfere with each other.
- ✓ Support asynchronous queries. This basically means that after an SQL query is submitted to the data base server, the control

then immediately returns to the calling application, allowing the user to complete the query, the results are then sent to the client.

- ✓ Support client side and server side cursors –Cursor is a mechanism that allows access a navigation of the data in a record set. They are implemented as a client side or a server side. Traditionally, frequently updated record set is implemented as a server side while read only record set is implemented as a client side.
- ✓ Support disconnected record set – After a record set is returned on a execution of a query, it is stored as a client side cursor and the active connection is closed. After changes have been committed to the record set the connection is re established and all up dates arte sent in a batch to the data store. . This helps in reducing network traffic in a great extent.
- ✓ Support commands as a common method – The unique feature of ADO is that when a command is executed, a connection is first established internally before that commands get submitted for execution. Compare this to a traditional object model like DAO/RAO where a connection has to establish explicitly before a command can be submitted.

9.22 ADO Architecture

In the ADO model there are five objects

- ✓ Connection
- ✓ Command
- ✓ Record set
- ✓ Record
- ✓ Stream

The connection object sets up the connection to the data source. First the data source name, its location, user id, password is stored in a connection string object, which is passed to the connection object to establish z connection to the data source.

The command button is used to execute the SQL commands, queries and stored procedures.
When a query is executed it returns results that are stored in the Record set object. Data in a record set is manipulated and then updated to the database.

Records allow you to handle data kept in semi structured storage (such as files in a directory structure) as through they were record in a database.

The stream object is used to access the contents of the node, such as an Email message, or a web page.

9.23 ADO and ASP Are Different Technologies

Don't fall into the trap of assuming that ADO is a par5 of ASP or that it is designed specifically for use with ASP. It is true to say that ADO is the ideal tool to use for achieving data access from ASP pages and that Ado is shipped as part of the HS 9.0/ASP 3.0 package. But ADO is more generic than that .If you are planning to write other data – dependent applications such as Visual Basic, Java, VC++, there is nothing to stop you from using ADO is those application too.

Infact you can use ADO with any COM complaint programming language, so where does ADO come from? Infact ADO is one of a suite of components, which are known collectively as the Microsoft Data Access Components (MDAC). This sort of components has enjoyed a release schedule that a separate to that of HS/ASP.

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