WEB BASED FACEBOOK APPLICATION

THE WRITER'S CLUB

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Acknowledgment

I would like to start acknowledgement by praising ALLAH ALMIGHTY, without HIS help I would never have been able to accomplish anything or produce even a small amount of work. I would like to express my special appreciation and thanks to my supervisor Ma’am Sidra Batool Kazmi. She has been a tremendous mentor for me. It was a great experience working under her supervision and she was always there when I needed any sort of help. Words cannot express how grateful I am to every person who has helped me throughout this project.

Finally, I would like to thank family and friends who supported me not only during the project but also during the two years of Master’s program. They always motivated and encouraged me.

ABSTRACT

The writer's club is a web based Facebook application. It provides a platform to Facebook users to write stories or plays collaboratively. The good feature about this application, which would also be the reason of inspiration, is that you do not need to stay at one place and write instead you will be able to move anywhere and write anytime as long as you are connected to the internet.

The idea of collaborative writing is not new, there are a number of websites operating on the same idea but I have introduced this scope to Facebook. With this application you can do a number of things. You can collaboratively write a story or a play with friends on Facebook. You will also be able to see your friends using this application and their contributions. You can start writing with your own document or you can also write in any of your friend's document. In addition to this, you can also invite your friends to use this application and take part in your writing. You can also publish document on Facebook wall after which your friends will be able to read the document and rate it with Facebook likes.

Project Brief

Project Title: Facebook application “The Writer’s Club”

Undertaken by: Ayesha Javaid

Supervised by: Ma’am Sidra Batool Kazmi

Operating System: Microsoft Windows 7

System Used: Intel Pentium Processor, 2GB RAM

Date Started: 1st Oct 2013

Date Completed: 10th Jan 2014

Software Tools Used: Adobe Dreamweaver
Adobe Photoshop
WampServer
Draw.io

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Chapter 1
Introduction

1.1 About The Writer's Club

The Writer's Club is a web-based Facebook application. This application provides a platform where number of authors from different social backgrounds gathers at one place to work collaboratively in order to write stories or plays. The stories can be based on some serious stuff/fiction or they can be humorous/ funny fiction as well. It depends on the author/writer. I personally believe that anyone can carve few minutes to write some funny or imaginary stuff and those who are into writing serious stuff can easily have an hour or two to weave their ideas into words and expressions to form a fable/story. People who hate to write will be greatly enthused by the esthetics of this application. The astonishing feature about this application is that you don't need to stay at one place and write; instead you'll be able to move anywhere and can use this application at any time as long as you are connected to the internet.

1.2 Description

The system is a web based application which is specifically designed to facilitate the communication between authors who share thoughts and ideas to work in a collaborative atmosphere. Also people with different ideas and creativity will be able to fabricate a better story or play as compared to an individual person thinking on the same topic but with limited ideas. The system is designed to maximize productivity by automating the writing process. More specifically, the proposed application will allow two or more authors to work on the same idea and work collaboratively to write a story or play. Any Facebook user can use this application. After logging into Facebook, the user may open this application to enter the world of fiction. A user can be a moderator who initiates the writing of a document or he/she may be an author who just participates in writing. The moderator will be able to initiate a writing project by setting up a title and then inviting friends to join him/her in proceeding with the writing. When friends accept the invitation, they will become authors and work on the same title to write/create a document. If it is a play to be written, each author will choose a character from a list of characters every time he/she writes a sentence or a dialogue. This means that author is allowed to choose a different character every time. Each author will contribute to the document by writing his/her part. Each author can select a color and font size for the text. Once completed

with writing a dialogue or sentence, each author will be able to submit his/her part for review by other Authors. Every author will also be an editor who could edit only his/ her sentence that has been posted. An author will be able to remove his/ her text from the document. During the writing process any author can publish the document anytime he/ she wish. Once an author publishes the document, any of the authors' Facebook friends will be able to read that document. Readers will be able to rate the document through Facebook likes. The system will also contain relational database which would keep data of all authors including their information and written documents. This is a web based application so a user must have an access to the internet to take part in writing.

1.3 Project Statement

The problem is that if a group of authors have to write a document collaboratively, they have to gather at one place and then write. Initially lied in websites but it was lacking in Facebook.

1.4 Motivation

A good story can move everyone of us with emotions. A well framed story can not only motivate us but also teach us .The main thing is all stories should entertain us. Collaborative storytelling involves a group where one writer starts the story and others keep on adding threads to it, and thus the story evolves. The imagination of the community gives a digital story a path one wouldn't have thought of at the start. The thing which has motivated me is that people has almost lost their interest in writing. They have time to waste in surfing useless stuff over internet but have no interest in utilizing their spare time in some productive activity. This made me to think that there must be a platform where people can use their brains to produce some creative and innovative stuff, at least for few minutes. And to bring this platform over Facebook is because it is the most popular social networking site which is a part of everyone's daily routine.

1.5 Contemporary References

There are a numerous websites operating on the same idea of “The writer’s club”. Some of the websites worth mentioning are; story mash, ficly, fabulate, storybird, and one million monkeys typing. All these websites offer you to write stories.

1.6 Proposed Idea

The idea behind “The writer’s club” is to provide a platform to the Facebook users to contribute creative writing in a collaborative manner. It allows the user to write a document either it is a story or a play and also allows to edit or modify the document. It enables a user to read a published document. User can share the document and can rate it using Facebook likes. Facebook users can also appreciate or criticize the documents through Facebook comments.

1.7 Main roles of the application

The application consists of three main roles i.e. moderator that initiates the story/play, author who contributes in creating stories/plays and reader who reads and rates the published documents.

1.7.1 Moderator

A moderator can perform the following tasks:

- Invite friends for writing a document.
- Initiates a writing process by setting up a title and a plot for a document.
- Remove any document from the list of documents.
- Select number of authors for writing any type of document.
- Setup title for story/play.
- Set characters list for play.
- View other authors with collaboration.

1.7.2 Author

An author can perform the following tasks:

- Write a document.
- Comment on each other's work.
- For play, can choose the characters of their own choice.
- Any author can edit the text of their own document.
- Any author can publish his/her part.

1.7.3 Reader

A reader can perform the following roles:

- Read a document.
- Give comments.
- Rate document using Facebook likes.
- Share document.

1.8 Scope

This software system is a Facebook application for Facebook users. The dilemma which made me think to do this project was that if number of authors wants to write a document collaboratively, they have to gather at one place to write. This application is a solution to this dilemma which would eliminate the need of gathering at one place for sharing ideas or thoughts for writing. In addition, this application includes some very interesting features. You will also be able to view your friends who will be using this application. It is so far observed that none of the websites contain both; stories and plays together at one place in their collaborative writing. Most important of all, this scope has been brought into Facebook by making this as a Facebook application because Facebook is one of the most popular social networking website. Hence, you can enjoy the experience of weaving your ideas within the boundaries of Facebook.

1.9 Resource Identification

1.9.1 Human Resources

This project is done by Ayesha Javaid under the supervision of Ma'am Sidra Batool Kazmi (lecturer IIT, QAU, Islamabad).

1.9.2 Software Resources

XHTML, CSS, and JavaScript are used as coding standards to develop the system. This application requires certain system interface requirements in order to operate. The application would need a database to save all the required data. For this WampServer, or in other words, PHP myAdmin is used. To manipulate the data (in database), it would require the use of MYSQL. As this application is a Facebook application so it would be compatible with the Facebook.

1.9.3 Hardware Resources

- Intel Pentium Processor (2.2 GHZ) or above
- 2GB of RAM
- 500 GB of hard disk

1.10 Process Model Selection

Agile software development process is adopted, which incorporates the changes as they are encountered during the project. From a number of agile methodologies, Extreme Programming is used for the development of my project. This project is developed iteratively and incrementally. Procedural approach is adopted, which is procedure oriented, to programming.

1.10.1 Reason behind selected model

Agile methodology is used, as shown in Figure 1, because agile development methodology provides opportunities to evaluate the direction of a project throughout the development lifecycle. This is achieved through regular iterations/sprints. By focusing on

the repetition of work cycles as well as the functional product they yield, this methodology is described as ‘iterative’ and ‘incremental’. Agile assumes that the first idea is not necessarily the best and final one and that learning happens continuously throughout the process. It encourages a tight feedback loop to incorporate new knowledge, emerging requirements and innovative ideas even late in the process. Incrementing in addition to iterating towards a solution hugely increases the chances of success.

Agile methodology is selected over others because of the reason that it is difficult to predict in advance that which software requirements will persist and which will change. Customer’s priorities also change during the lifecycle of a project so that is why agile methodology is being used which has a characteristic of ‘the ability to respond to change’. Among many agile methodologies extreme programming is used because it is an approach to programming which is appropriate for; small team, high risk, unstable requirements, requiring testability.

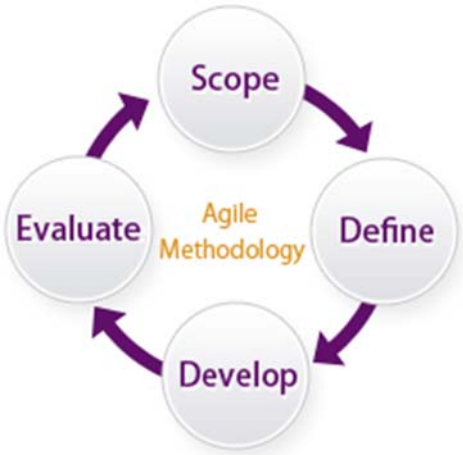

Figure 1: Agile methodology

1.11 Project Schedule

Project scheduling is concerned with the techniques that can be employed to manage the activities that need to be undertaken during the development of a project.

Task Name	Start Date	End Date
Requirement Analysis	10/01/13	10/07/13
System Design	10/08/13	10/21/13
System Implementation	10/22/13	11/20/13
Testing & Evaluation	11/21/13	12/15/13
Conclusion & Future work	12/16/13	12/23/13
Final Report	12/24/13	12/31/13
Documentation	01/01/14	01/10/14

Figure2: Project Schedule

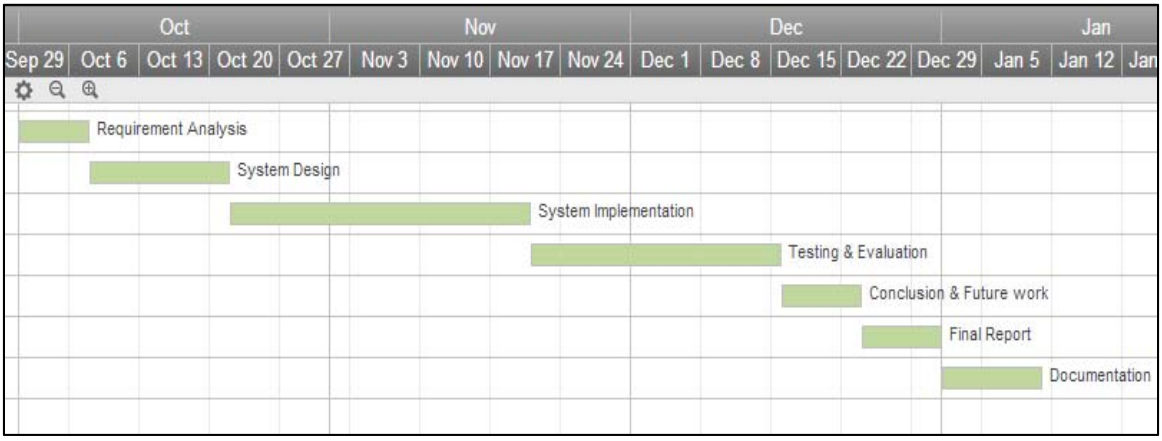

Figure3: Gantt chart

Chapter 2
Requirement Analysis

2.1 Introduction

This chapter focuses on the functional and non-functional requirements of a system and it also includes the use cases in order to make it clear to the user/reader that how each functionality is being carried out.

2.2 Requirement Engineering

Requirements are statements of what the system must do, how it must behave, the properties it must exhibit, the qualities it must possess, and the constraints that the system and its development must satisfy.

There are two types of requirements.

- Functional Requirements
- Non-Functional Requirements

2.2.1 Functional Requirements

The functional requirements are grouped according to the roles of the application.

Moderator

1. Moderator can send requests or invite friends for story writing.
2. Moderator can view the list of friends/authors with collaboration.
3. Moderator can view the list of document (story/play).
4. Moderator can remove any story from the story list.
5. Moderator can remove any play from the play list.
6. Moderator can set a title of the story/play.
7. Moderator can set characters for a play.
8. Moderator can initiate a plot for a document to create it.

Author

9. Author can edit his/her text (already posted).
10. Author can remove his/her text (already posted).
11. Author can choose a character from the horizontal list of characters (in play).
12. Author can publish the document during the writing process only on his/her FB wall.
13. Authors can write/create sentences to update his/her part in a story/play.
14. Author can change the font and color of his/her text.

Reader

15.Reader can view/read any document (story/play).

16. User/reader can share any document with friends on his or their FB timeline.

17. Reader can rate the shared or published document using Facebook likes.

System (Facebook App)

18. System provides access rights to the friends only.

19.The system provides a text box where Authors are able to write.

20. Each author is assigned a unique facebook id.

2.2.2 Non-Functional Requirements

The non-functional requirements are given below:

2.2.2.1 Usability

- **Understandability:**

Interface elements (e.g. menus, buttons) should be easy to understand.

- **Learn ability:**

The user documentation and help should be complete.

The required training time would be a few minutes due to its simple and user friendly interface.

- **Operability:**

The interface elements should be consistent.

Where error occurs, user should be informed about the error by popping up an error message.

- **Interface:**

Interface should be user friendly and must be easy to use.

- **Ease to use:**

The system should allow beginner users to operate system with little or no training.

2.2.2.2 Reliability

- **Availability:**

The application will be available 7 days a week and 24 hours a day.

- **Recovery:**

The system shall be able to recover or heal up when an error occurs. If it does not heal then it should at least display an error message.

2.3 Object Oriented Design

2.3.1 Actor Identification

The main actors which will interact with this system application are given below:

- User (Moderator/Author/Reader)

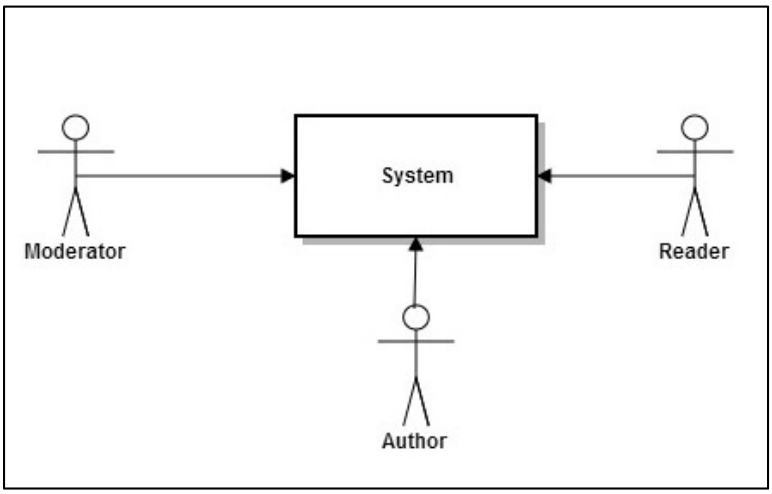

Figure 4: actor identification.

2.3.2 Use case Diagram

A use case diagram is usually referred to as a behavior diagram used to describe a set of actions (use cases) that some system or systems should or can perform in collaboration with one or more external users of the system (actors). It is a graphic depiction of the interactions among the elements of a system. A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. Use case diagrams are

employed in UML (Unified Modeling Language), a standard notation for the modeling of real-world objects and systems. The use case diagram of the system is attached in system design.

2.3.3 Use Case Description

2.3.3.1 Invite friends

Table 1: Invite friends

USE CASE ID.	1
USE CASE NAME	Invite friends
PRIMARY ACTOR	Moderator
BRIEF DESCRIPTION	Moderator will login, open a document and invite friends to join him/her in writing that document.
Normal Flow	
1. Moderator will login to the Facebook. 2. Moderator will open the application. 3. Moderator will select the type of writing a document (story/play). 4. Moderator will enter the title of the story/play. 5. Moderator will initiate the plot for a document to create it. 6. Moderator will select ‘invite’. 7. Moderator will enter the name of the friend and then click on done. 8. Moderator will repeat step 6 for more friends.	
Alternate Flow	
1.1. Moderator enters incorrect username/password. 1.1.1. enter again. 1.2. Moderator enters incorrect password. 1.2.1. enter again. 1.3. The login fails. 1.3.1. refresh the page. 8.1. Moderator enters incorrect name. 8.1.1. enter again. 11.1. server down 11.1.1.refresh page. 11.1.2. try later again.	

2.3.3.2. Edit the text

Table 2: Edit the text

USE CASE ID.	2
USE CASE NAME	Edit the text
PRIMARY ACTOR	Author
BRIEF DESCRIPTION	Author will write a sentence/dialogue and can edit his/ her own part only.
Normal Flow	
1. Author will login to the Facebook. 2. Author will open the application. 3. Author will then select the type of writing (story,/play). 4. Author will then select the name of the document. 5. The system will display that specific document. 6. Author will write his/her part and post. 7. Author will edit his/her part that has already been posted. 8 Author will update his/her part. 9. System will 'save' the changes.	
Alternate Flow	
1.1 Author enters incorrect username/password. 1.1.1. enter again. 1.3. the login fails 1.3.1. refresh the page 4.1. the document no longer exists. 9.1. server down 9.1.1. try again later	

2.3.3.3. View authors in collaboration

Table 3: View authors in collaboration

USE CASE ID.	3
USE CASE NAME	View authors in collaboration
PRIMARY ACTOR	Moderator
BRIEF DESCRIPTION	Moderator will open the application and click on Friends to view authors in collaboration.
Normal Flow	
1. Moderator will login to the Facebook. 2. Moderator will open the application. 3. Moderator will click on Friends from the main menu. 4. The system will display the names of authors. 5. Moderator will view the authors with collaboration.	
Alternate Flow	
1.1. Moderator enters incorrect username/password. 1.1.1. enter again. 1.3. the login fails 1.3.1. refresh the page 6.1. Author list is not shown. 6.1.1. no authors have been invited yet. 6.1.2. server down 6.1.2.1 refresh page	

2.3.3.4. Choose a character

Table 4: choose a character

USE CASE ID.	4
USE CASE NAME	Choose a character
PRIMARY ACTOR	Author
BRIEF DESCRIPTION	Author will choose a character from list of characters and post a dialogue for that character.
Normal Flow	
1. Author will login to the Facebook. 2. Author will open the application. 3. Author will select the 'play'. 5. The system will display the dialogue room for writing. 6. Author will view characters from the horizontal list. 7. Author will choose desired character. 8. Author will type the dialogue for that character and post. 9. To choose any other character next time, step 7 to 9 will repeat.	
Alternate Flow	
1.1.Author enters incorrect username/password. 1.1.1. enter again. 1.3. the login fails 1.3.1. refresh the page 5.1. system does not display the dialogue room. 5.1.1. the desired document does not exist. 7.1. character list is empty 7.1.1. Moderator has not added characters yet. 8.1. dialogue can't be sent 8.1.1. server down 8.1.1.1. refresh page 8.1.1.2. try again	

2.3.3.5. View/Read a document

Table 5: View/read a document

USE CASE ID.	5
USE CASE NAME	View/Read a document
PRIMARY ACTOR	Reader
BRIEF DESCRIPTION	Reader will login and open a document to view it.
Normal Flow	
1. Reader will login to the Facebook. 2. Reader will open the application. 3. The system will display the categories of writing. 4. Reader will select document (story/play). 5. Reader will select the name of the desired document. 6. They system will display the entire story for reading. 7. Reader will close the document after reading. 8. Step 3 will repeat. 9. To read more documents, step 5 to 8 will repeat.	
Alternate Flow	
1.1. Reader enters incorrect username/password. 1.1.1. enter again. 1.3. the login fails 1.3.1. refresh the page 5.1. story cannot be opened 5.1.1. story has been removed permanently 5.1.2. server down 5.1.2.1. refresh page 5.1.2.2. try again	

2.3.3.6. Remove/Delete a document

Table 6: remove/delete a document

USE CASE ID.	6
USE CASE NAME	Remove/delete a document
PRIMARY ACTOR	Moderator
BRIEF DESCRIPTION	Moderator will login, open the application, select a desired document and remove that document.
Normal Flow	
1. Moderator will login to the Facebook. 2. Moderator will open the application. 3. The system will display the main screen which shows different categories of writing. 4. Moderator will then select a document (story/play). 5. Moderator will then select the name of the desired document. 6. Moderator will press ‘remove’. 7. System will remove it from database.	
Alternate Flow	
1.1. Moderator enters incorrect username/password. 1.1.1. enter again. 1.3. the login fails 1.3.1. refresh the page 5.1. story cannot be opened 5.1.1. story has already been removed permanently 5.1.2. server down 5.1.2.1. refresh page 5.1.2.2. try again	

2.3.3.7. Publish a document

Table 7: Publish a document

USE CASE ID.	7
USE CASE NAME	Publish a document
PRIMARY ACTOR	Author
BRIEF DESCRIPTION	Author will login and publish the document during the writing process.
Normal Flow	
1. Author will login to the Facebook. 2. Author will open the application. 3. The system will display the main screen which shows the categories of writing. 4. Author will select the specific writing category. 5. Author will select specific document. 6. The system will display a dialogue room. 7. Author will select 'publish on wall'. 8. System will display a FB pop-up, to share the publish document on wall. 8. The document will get published only on the author's wall.	
Alternate Flow	
1.1. Author enters incorrect username/password. 1.1.1. enter again. 1.3. the login fails 1.3.1. refresh the page 6.1. dialogue room is not displayed 6.1.1. document has been removed permanently 6.1.2. server down 6.1.2.1. refresh page 6.1.2.2. try again	

2.3.3.8. Write sentences/ dialogues in a document

Table 8: write sentences/dialogues in a document

USE CASE ID.	10
USE CASE NAME	Write sentences/ dialogues
PRIMARY ACTOR	Author
BRIEF DESCRIPTION	Author will login, open the application and write a dialogue/sentence in the dialogue room.
Normal Flow	
1. Author will login to the Face Book. 2. Author will open application. 3. Author will select the type of writing and select the desired document, for which the author wants to write sentences. 4. The system will display the dialogue room for writing. 5. Author will write his/her part and post it. 6. The system will display the dialogue on the screen. 7. To write more, author will repeat step 4 to 5.	
Alternate Flow	
1.1. Author enters incorrect username/password. 1.1.1. Enter again. 1.3. the login fails 1.3.1. refresh the page	

2.3.3.9. Set up a title

Table 9: Setup a title

USE CASE ID.	11
USE CASE NAME	Set up a title
PRIMARY ACTOR	Moderator
BRIEF DESCRIPTION	Moderator will login, open the application, create a new story/ play and set up a title for it.
Normal Flow	
1. Moderator will login to the FaceBook. 2. Moderator will open the application. 3. The system will display the main screen which contains the categories of writing. 4. Moderator will select the specific category (play/story). 5. Moderator will select create (story/play). 6. Moderator will then write a title and few sentences to plot the document. 7. Moderator will then click on 'create'. 8. System displays a pop-up msg as story saved.	
Alternate Flow	
1.1. Moderator enters incorrect username/password. 1.1.1. enter again. 1.3. the login fails 1.3.1. refresh the page 7.1. the title specified already exists 7.1.1. choose a new title	

2.3.3.10. Rate a document

Table 10: Rate a document

USE CASE ID.	12
USE CASE NAME	Rate a document
PRIMARY ACTOR	Reader
BRIEF DESCRIPTION	Reader will login and open a specific document, read it and then rate it.
Normal Flow	
1. Reader will login to the Face Book. 2. Reader will open the application. 3. The system will display the categories of writing. 4. Reader will select desired document. 5. Reader will select the name of the document (story/play). 6. The system will display the entire document. 7. Reader will Rate the document after reading and sharing it using fb likes.	
Alternate Flow	
1.1. Reader enters incorrect username/password. 1.1.1. enter again. 1.3. the login fails 1.3.1. refresh the page 5.1. document cannot be opened 5.1.1. document has been removed permanently 5.1.2. server down 5.1.2.1. refresh page 5.1.2.2. try again	

2.3.3.11. Share a document

Table 11: Share a document

USE CASE ID.	13
USE CASE NAME	Share a document
PRIMARY ACTOR	Reader
BRIEF DESCRIPTION	Reader will login and open a specific document, read it and then share it, if he/she wants to.
Normal Flow	
1. Reader will login to the Face Book. 2. Reader will open the application. 3. The system will display the categories of writing. 4. Reader will select desired document. 5. Reader will select the name of the document (story/play). 6. The system will display the entire document. 7. Reader will share the document with friends after reading.	
Alternate Flow	
1.1. Reader enters incorrect username/password. 1.1.1. enter again. 1.3. the login fails. 1.3.1. refresh the page. 5.1. document cannot be opened 5.1.1. document has been removed permanently. 5.1.2. server down. 5.1.2.1. refresh page. 5.1.2.2. try again.	

Chapter3
System Design

3.1 Introduction

The software design aims to establish a design approach that provides the functions that are described in the system requirements. System design will establish a disciplined and integrated engineering plan for the proposed design, understand the technical risks, and determine estimates for performance and cost to completion. In the software design, a design subject represents in the form of conceptual entities and their relationships.

The software design shows the interaction of the user to the system. It is an important part for the system. Some diagrams are included here to describe the flow of the system.

- Use Case diagram
- ER diagram
- Activity diagram

3.2 Use Case diagram

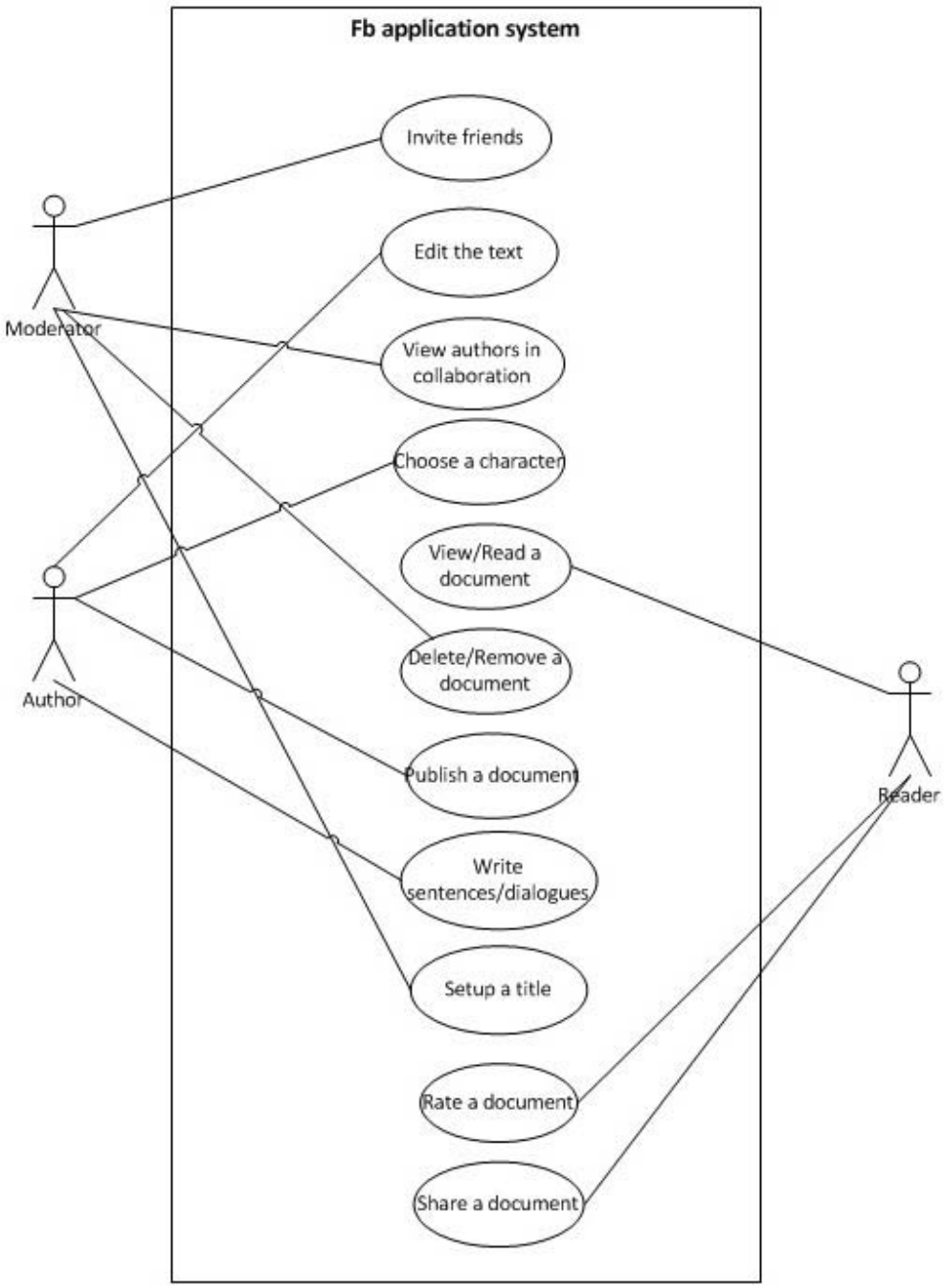

Figure5: Use case diagram

3.3 ER diagram

An entity-relationship diagram (ERD) is a data modeling technique that graphically illustrates an information system's entities and the relationships between those entities. An ERD is a conceptual and representational model of data used to represent the entity framework infrastructure. An ER diagram is crucial to creating a good database design. It is used as a high level logical data model that is useful in developing a conceptual design for database.

Entity Relationship Diagram (ERD)

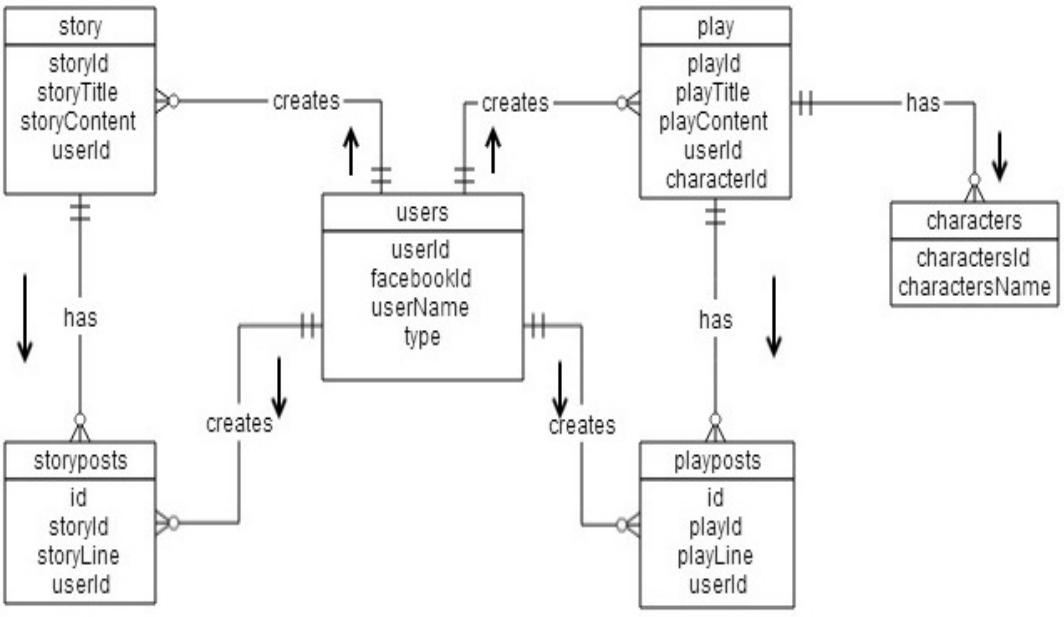

Figure 6: ER diagram

3.4 Activity Diagrams

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the UML, activity diagrams are intended to model both computational and organizational processes Activity diagrams show the overall flow of control.

Activity Diagrams are useful for describing complicated methods and for describing use cases, since, after all, a use case is an interaction, which is a form of activity. These diagrams are like Flow Charts, but Flow Charts are usually limited to sequential activities while Activity Diagrams can show parallel activities as well.
The activity diagrams of the system are given in figure.

1. Invite friends

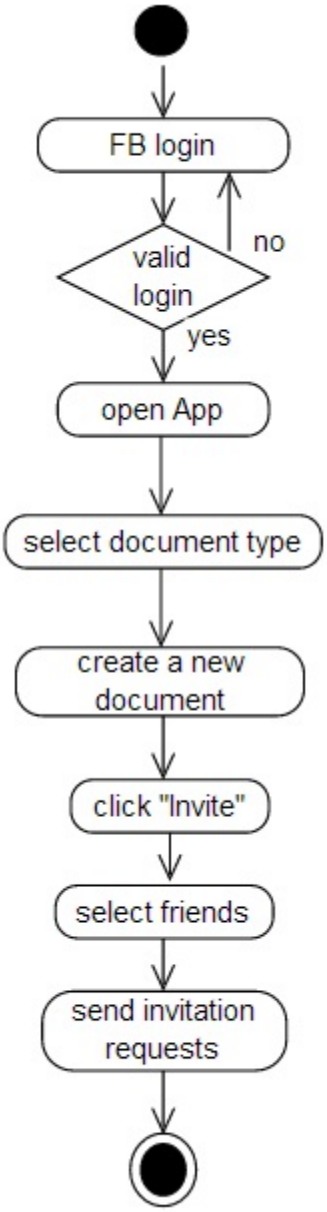

Figure 7: Invite friends

2. Edit the text

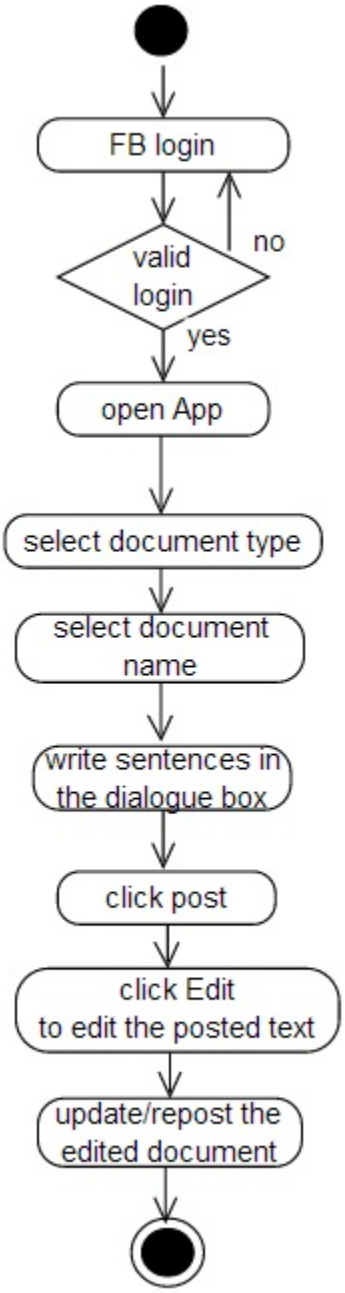

Figure 8: Edit the text

3. View authors in collaboration

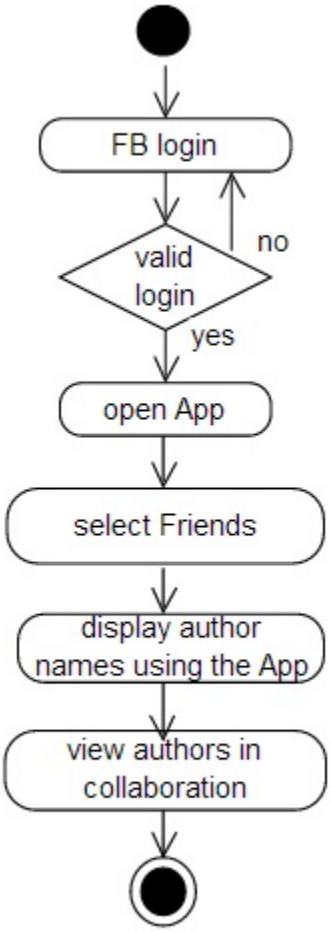

Figure 9: View authors in collaboration

4. Choose a character

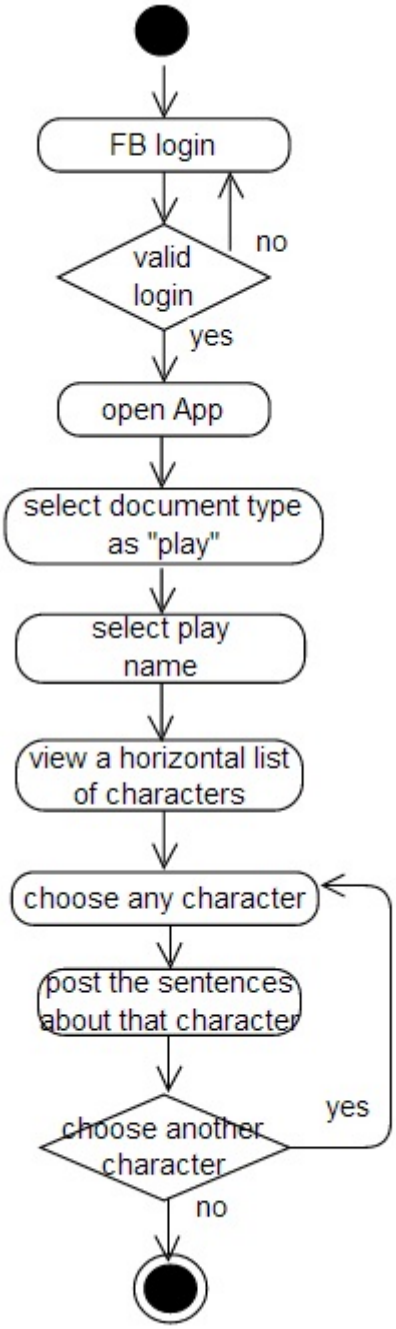

Figure10: choose a character

5. View/Read a document

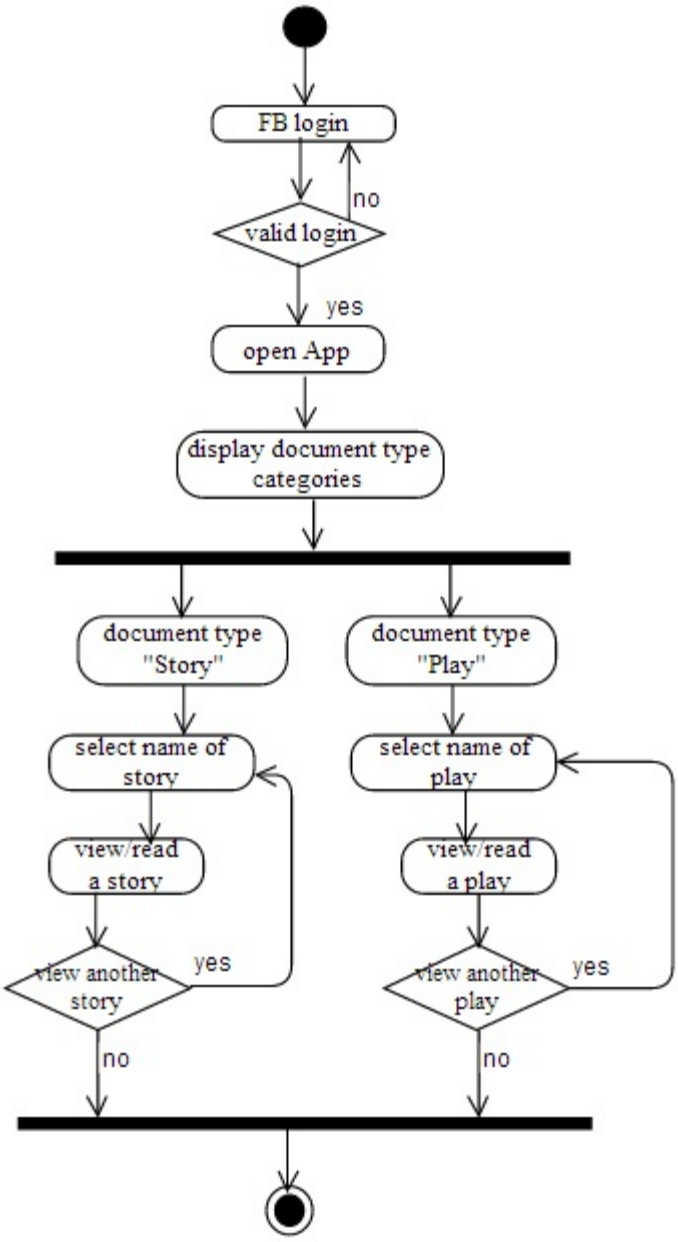

Figure11: view/read a document

6. Delete/remove a document

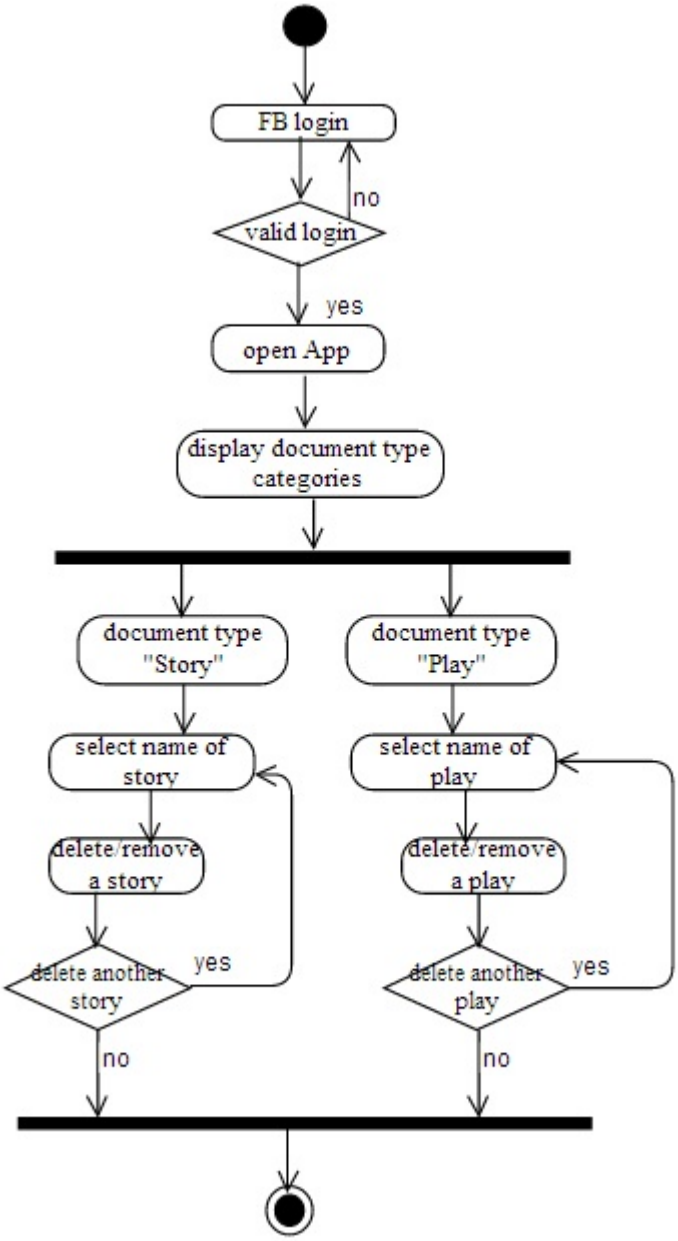

Figure12: delete/remove a document

7. Publish a document

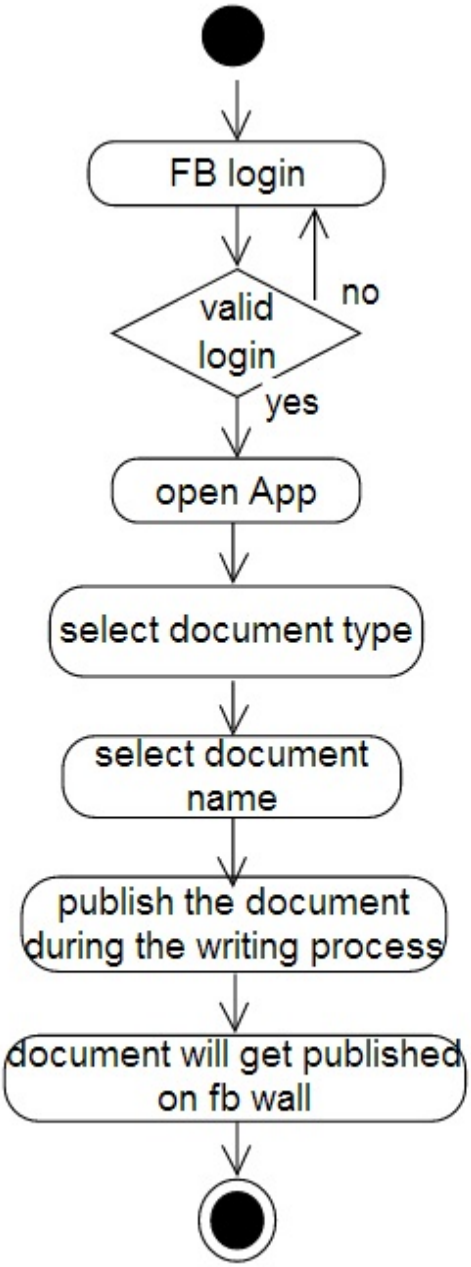

Figure13: publish a document

8. Write sentences/ dialogues in a document

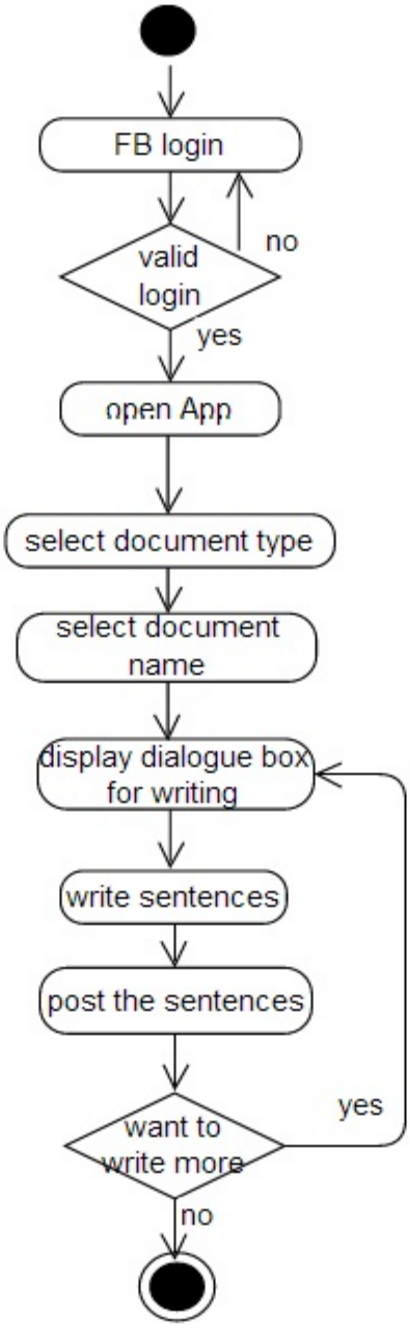

Figure14: write sentences/dialogues in a document

9. Set up a title

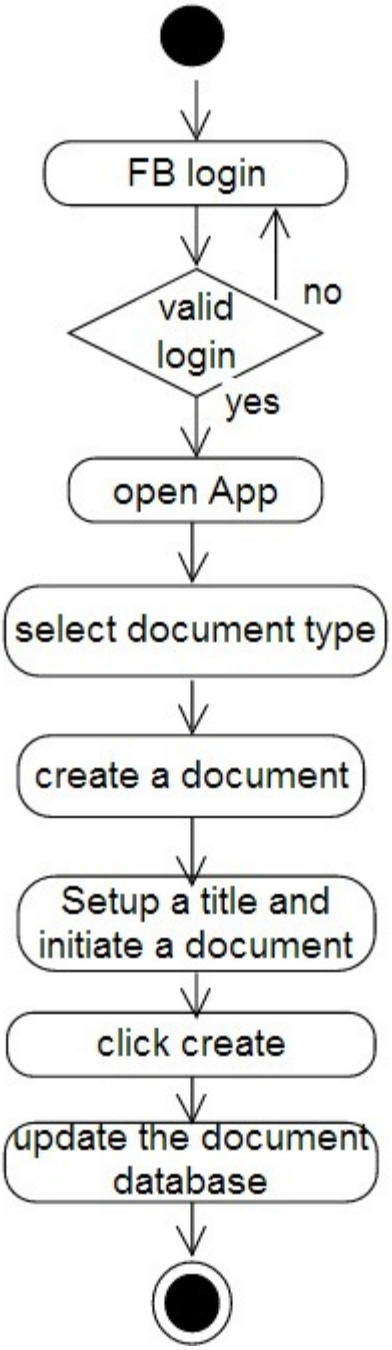

Figure15: Setup a title

10. Rate a document

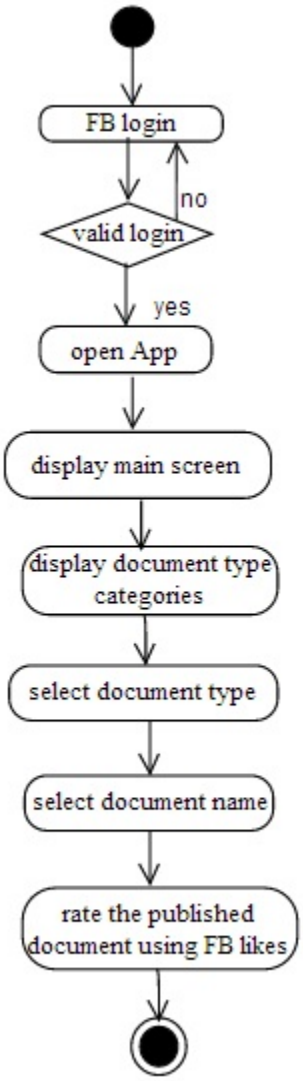

Figure16: Rate a document

11. Share a document

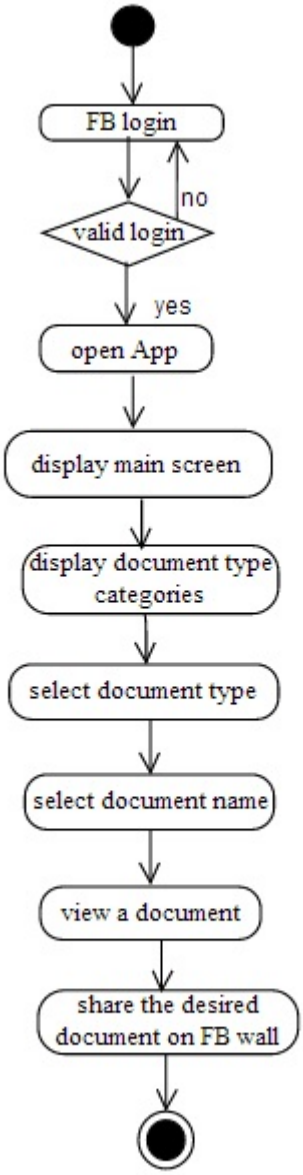

Figure17: Share a document

3.5 Table Descriptions

3.5.1 User

Table14: User

Field	Type	Width	Constraints	Description
userId	Int	10	Not Null	Primary key
facebookId	Int	10	Not Null	Name of User
userName	Varchar	50	Not Null	Email of the User
type	Varchar	50	Not Null	Type of User

3.5.2 Play

Table15: play

Field	Type	Width	Constraints	Description
playId	Int	11	Not Null	Primary key
playTitle	Varchar	20	Not Null	Name of play
playContent	varchar	100	Not Null	Content of play
userId	Int	11	Not Null	Foreign key
characterId	Int	11	Not Null	Foreign key

3.5.3 Story

Table16: Story

Field	Type	Width	Constraints	Description
storyId	Int	11	Not Null	Primary key
storyTitle	Varchar	100	Not Null	Name of play
storyContent	varchar	Longtext	Not Null	Content of play
userId	Int	11	Not Null	Foreign key

3.5.4 Character

Table17: Character

Field	Type	Width	Constraints	Description
charactersId	Int	6	Not Null	Primary key
charactersName	longtext	13	Not Null	Name of the Character

3.5.5 Storyposts

Table18: Storyposts

Field	Type	Width	Constraints	Description
Id	Int	11	Not Null	Primary key
storyId	Int	11	Not Null	Foreign key
storyline	varchar	1000	Not Null	Lines of story
userId	Int	11	Not Null	Foreign key

3.5.6 Playposts

Table19: Playposts

Field	Type	Width	Constraints	Description
Id	Int	11	Not Null	Primary key
playId	Int	11	Not Null	Foreign key
playline	varchar	1000	Not Null	Lines of play
userId	Int	11	Not Null	Foreign key

Chapter 4
System Implementation

4.1 Introduction

Implementation is the development phase of the software. Its aim is to transfer the system design into executable form. This includes the performance of hardware devices, software's utilities or tools that aid in development and the problems faced during their installation. The goal of implementation is to implement a system correctly, efficiently and quickly using particular tools and programming languages.

4.2 Programming Language Selection

PHP has been chosen as the programming language for the development of Facebook application "The Writer's Club".

4.2.1 PHP

"PHP: Hypertext Preprocessor" is actually a backronym. It originally meant "Personal Home Page." It is a recursive acronym for PHP: Hypertext Preprocessor which is re-designated.PHP is an HTML-embedded scripting language. Much of its syntax is received from C, Java and Perl with a couple of unique PHP-specific features thrown in. The target of the language is to allow web developers to write dynamically generated pages speedily.PHP is a reflective programming language planned particularly to blend with HTML, and often in association with MySQL; it is used in Content Management Systems and other web applications. It is accessible on many platforms, including Windows, Unix/Linux and Mac OS X, and is open source software. Apart from manipulating the content of your pages, PHP can also send HTTP headers. You can set cookies, manage authentication, and redirect the users. In addition to this, it offers remarkably good connectivity to many databases and ODBC, and integration with various external libraries that let you do everything from generating PDF documents to parsing XML.PHP is a server-side scripting language for creating dynamic Web pages. This is the most traditional and main target field for PHP. You can create pages with PHP and HTML. When a visitor opens the page, the server work on the functions of PHP commands and then sends the results to the visitor's browser, just as with ASP or Cold

Fusion. Contrary to ASP or Cold Fusion, PHP is Open Source and cross-platform. PHP runs on Windows NT and many UNIX versions, and it can be construct as an Apache module and as a binary that can run as a CGI. When mold as an Apache module, PHP is markedly lightweight and speedy. Without any process creation overhead, it can send back results quickly, but it doesn't require the tuning of mod_ perl to keep your server's memory image small.

4.2.2 Why use PHP

There are many reasons to why use PHP. It is a very popular scripting language used by most of the website developers to enhance the functions and appearance of the websites. It is mainly known to create dynamic web pages. This programming language is basically used for custom web solutions. As it can be easily mixed with HTML, most of the web developers prefer to use this programming language. Moreover, it is quite easy to use as it includes simple formats, techniques and features which can be grasped easily by programmers. There are many benefits of using this scripting language and some of the most significant advantages include the following.

- **Increased efficiency and usability**: It offers incomparable usability and efficiency when used for website development.
- **Data processing**: Any website which is developed with the use of PHP functions easily and includes fast data processing features.
- **Compatible**: It is also compatible on all OS systems such as Windows, UNIX and so forth.
- **HTML**: Another greatest benefit of using PHP is its capability to upload into HTML.
- **Cost advantages**: It is quite affordable to design, develop, modify and customize PHP based websites.
- **Easy to comprehend**: In comparison to other scripting languages, PHP is quite easy to comprehend with its simple features and techniques.
- **Integration**: It is also easy to integrate major web applications with this scripting language.

4.2.3 HTML

HTML is the main markup language for creating web pages and other information that can be displayed in a web browser. It is used to represent the user interface of the system. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page. Web browsers can also refer to Cascading Style Sheets (CSS) to define the appearance and layout of text and other material. CSS is a style sheet language used for describing the look and formatting of a document written in a markup language. CSS makes it easy to improve the appearance of a website by allowing us to create a much more “stylish” website since CSS offers a wide array of expressive style capableness. With CSS, we can make our system more attractive. It adds the new looks to HTML.

4.2.4. JavaScript

JavaScript is the world's most popular programming language. It is the language for HTML, for the web, for servers, PCs, laptops, tablets, phones, and more. A scripting language is a lightweight programming language. JavaScript is programming code that can be inserted into HTML pages. JavaScript code can be executed by all modern web browsers. JavaScript is easy to learn.

4.3 Database Design

4.3.1 MySQL

MySQL database is a web hosting database that is used to store web site information like blog posts or user information. A MySQL database is the most popular type of relational database on the web today. This is partly because it is completely free but also very powerful.

In basic terms, a MySQL database is capable of storing any type of that we want. It will let us quickly store and retrieve information and multiple web site visitors can use it at one time. MySQL is the database of choice for several different web programming

languages including PHP, Ruby on Rails, and Python. These programming languages make is extremely easy to connect to a MySQL database.

4.3.2 Why choose MySQL

MySQL is a Database Management System. A Database Management System or DBMS allows us to create tables that store data in them. The project needs a database to save all the required data of our application. To manipulate the data (in database), it requires the use of MYSQL.

4.4 Built-in APIs used

API access is required for building an application for Facebook.

4.4.1 Facebook SDK for PHP

The Facebook SDK for PHP enables developers to implement a rich set of server-side functionality for accessing Facebook's API. This includes access to all of the features of the Graph API and FQL. It also works alongside the Facebook SDK for JavaScript to help you implement Facebook Login.

4.4.2 Facebook Canvas Application

Building an app on Facebook gives you the opportunity to deeply integrate into the core Facebook experience. Your app can integrate with many aspects of Facebook.com, including the News Feed and Notifications. All of the core Facebook Platform technologies, such as Social Plugins, the Graph API and Platform Dialogs are available to Apps on Facebook. The app you add to your profile and use from within Facebook.com is called canvas application.

4.5 Coding conventions and standards

4.5.1Coding standards

HTML, CSS, and JavaScript are used as coding standards to develop the system.

4.5.2 Naming conventions

The naming conventions specified in W3Schools have been followed.

4.6 User Interface

User interface should be easy to use because it is the interface through which user interacts with a system. When user will open the application a main screen will be displayed, providing user with the options of play and story. Whatever option a user chooses, the next screen will display the categories of create, add, read and will also display the list of the document. A user will make his/her selection accordingly. A dialogue screen will be provided for the user to write and edit text. If a user just wants to read a document then the document will be opened in a read mode.

1.Main Screen

- When user will open the application, this main screen will be displayed.
- User will choose the type of writing by selecting ‘STORY’ or ‘PLAY’ from the right side menu.

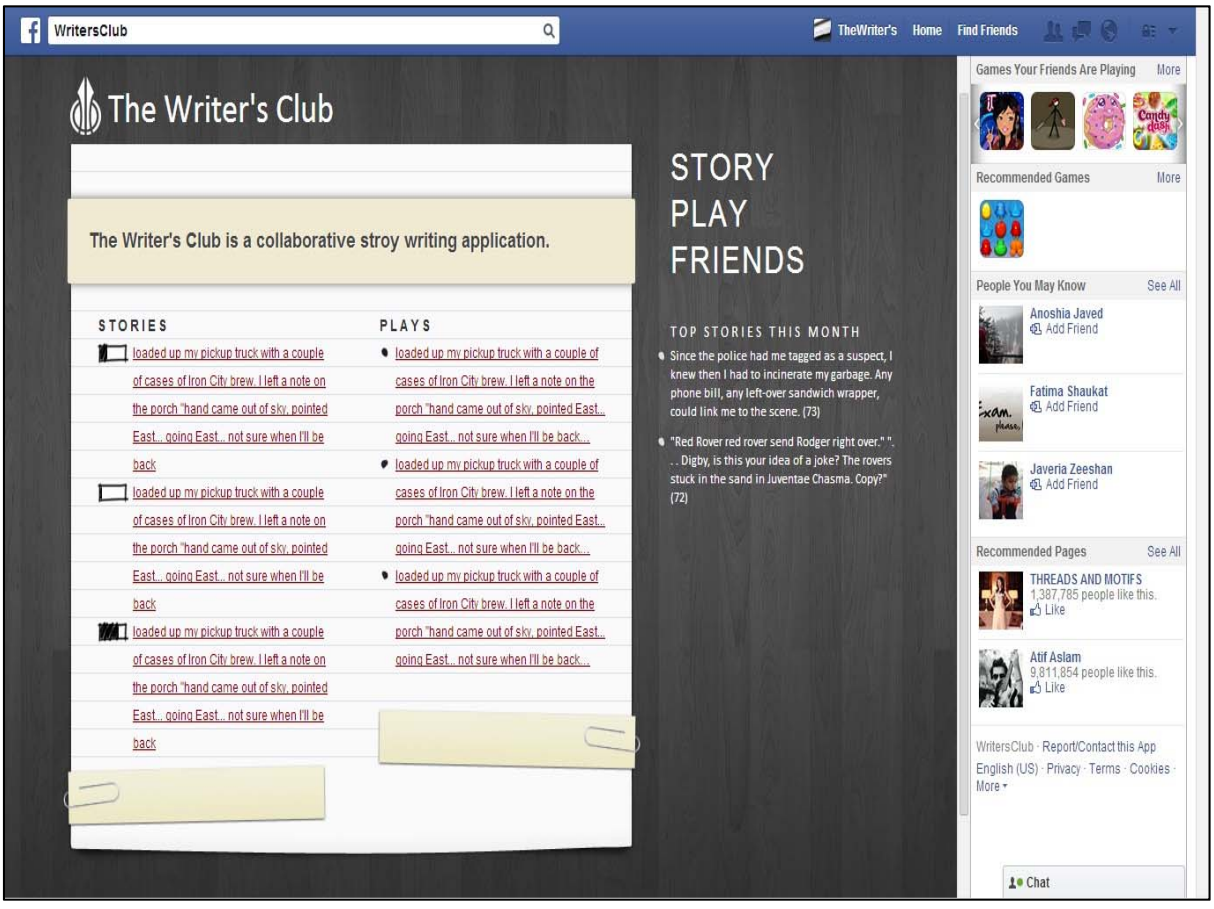

Figure18: Main screen

2. Click STORY from menu

- After selecting the type of writing i.e. Story, this screen will be displayed.

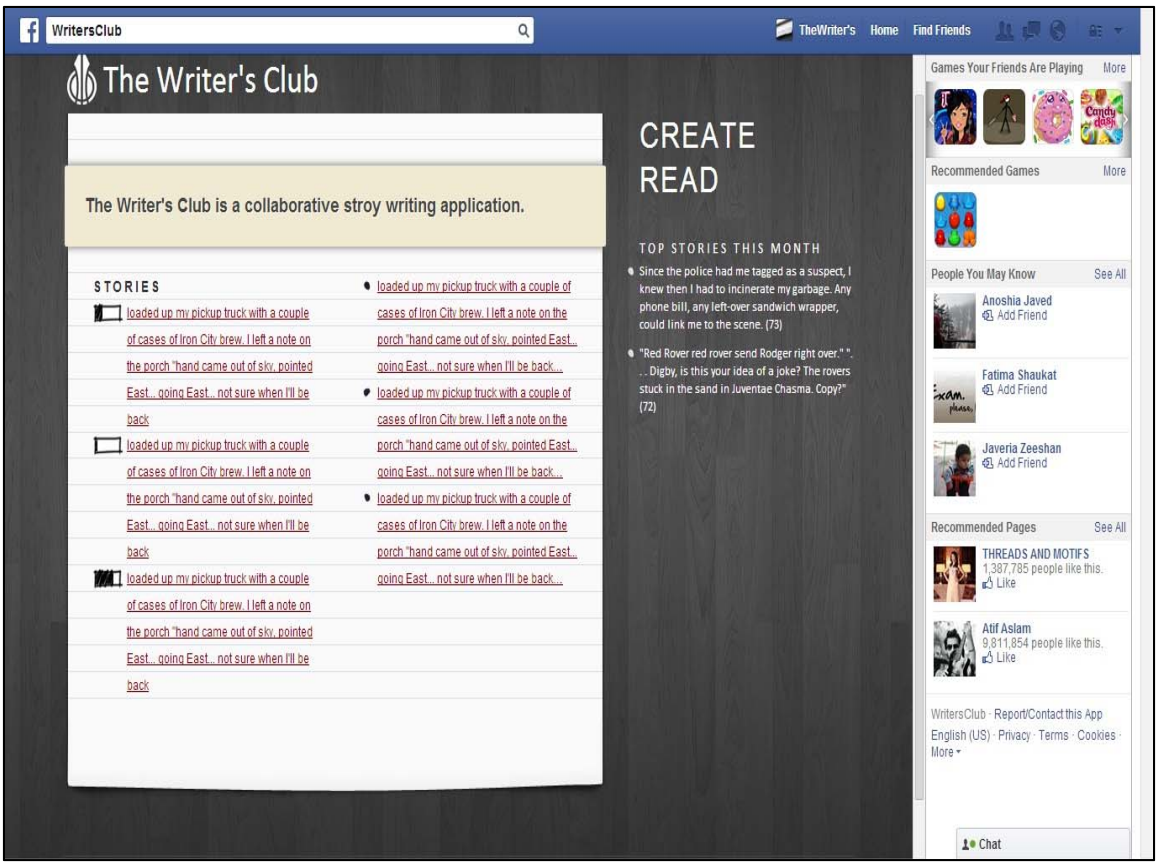

Figure19: Click STORY from menu

3. Create a story

- User will select Create to initiate writing a new story.

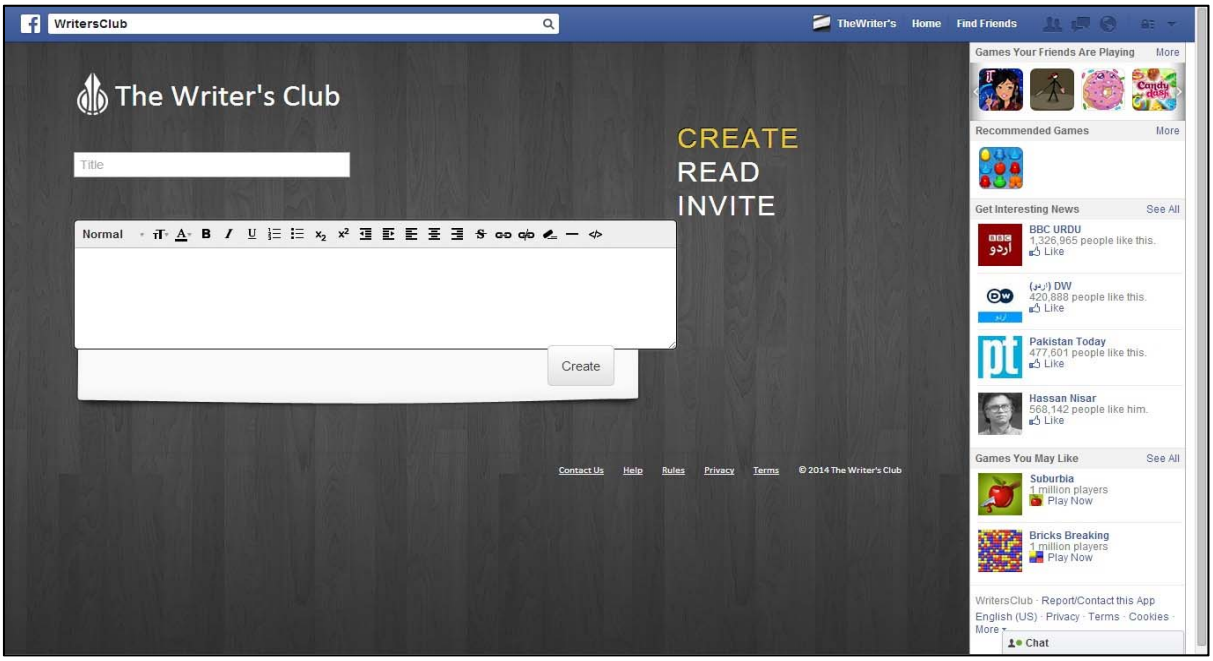

Figure20: create a story

3. Create a play

- User will select Create to initiate writing a new play.

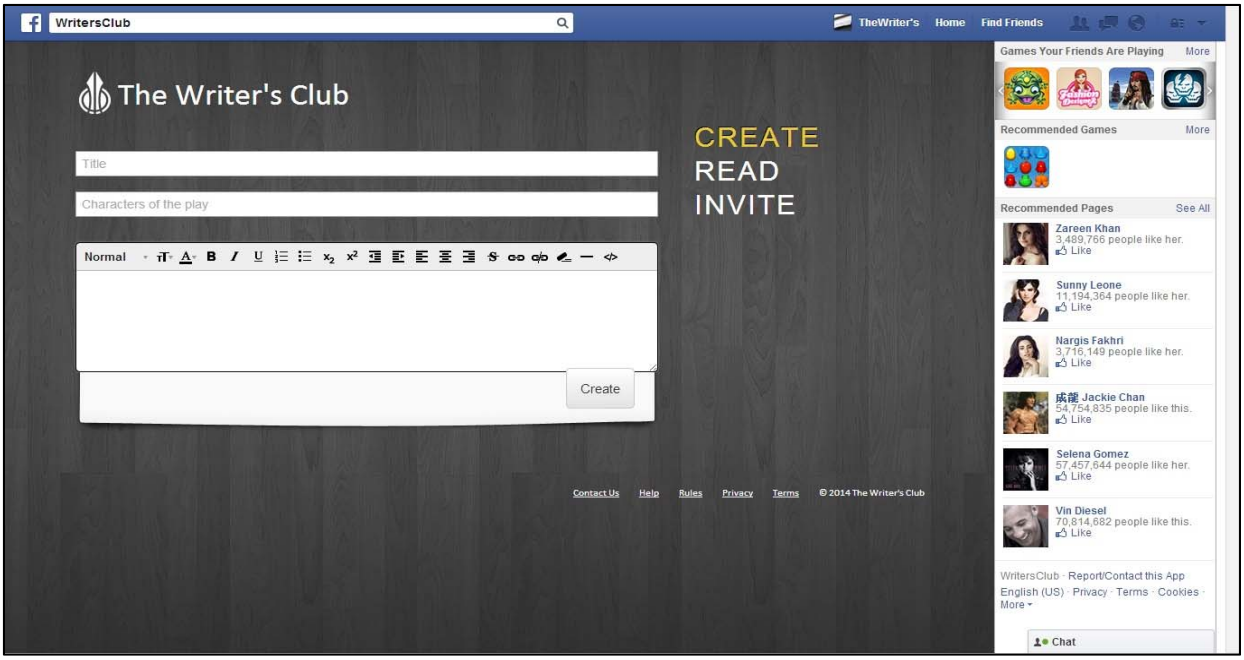

Figure21: create a play

5. Invite friends

- User will simply click on Invite to invite friends for writing.

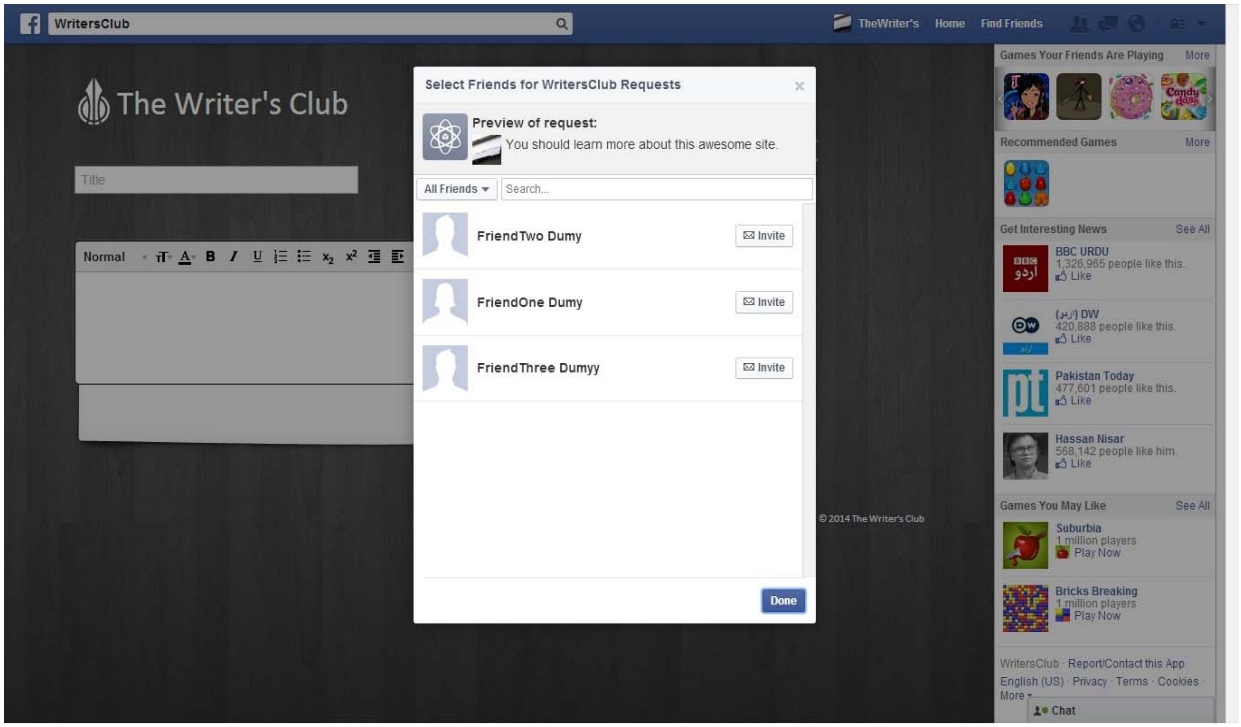

Figure 22: Invite friends

Chapter 5
System Testing

5.1 Introduction

In general software testing is the process of evaluation a software item to detect differences between given input and expected output. Different sets of test cases and testing strategies are prepared, all of which are aimed at achieving one common goal - removing bugs and errors from the code, and making the software error-free, and capable of providing accurate and optimum output. Software testing is a verification and validation process. This chapter includes test cases for verification and validation.

5.1.1. Verification

In verification, the software is inspected by looking into the code line by line. Verification involves checking that the software conforms to its specification. For this purpose, we tested the system in a way to check whether it meets the specified functional and non-functional requirements.

5.1.2. Validation

In validation, code is executed and software is run to find detects. Hence, validation is dynamic and includes black box testing. The aim of validation is to ensure that the software system meets the customer’s expectations.

5.2. System testing

In this testing, the entire system is tested for errors and bugs. This test is carried out by interfacing hardware and software components of the entire system, and then testing it. This testing is listed under the black-box testing method, where the software is checked for user-expected working conditions.

5.3 Black Box Testing

5.3.1. Overview

Black box testing is a type of testing in which the functionality of the software is tested without any reference to the internal design, code, or algorithm used in the program. The test cases are generally built around the requirements and specifications of the software application. In order to implement the black box testing strategy, the tester needs to have a thorough understanding about the requirement specifications of the system and how it should behave in response to a specific action.

5.3.2. Test Plan

A test plan documents the strategy that will be used to verify and ensure that a product or system meets its design specifications and other requirements. A test plan is usually prepared by or with significant input from test engineers. It is a document describing the scope, approach, resources and schedule of intended test activities. It identifies amongst others test items, the features to be tested, the testing tasks, who will do each task, degree of tester independence, the test environment, the test design techniques and entry and exit criteria to be used, and the rationale for their choice, and any risks requiring contingency planning. It is a record of the test planning process.

The test plan for this application is given as follows:

Table20: Test plan

Test No.	**Test case name**	**Description**	**Testing Approach**
1	Read/ view a document	Reader will open a document to read it	Black box
2	Add writing/update an existing document	Author will write his/her part in an existing document	Black box
3	Create a document	Moderator will initiate a new document for writing	Black box

4	Remove a document	Moderator will open the application and delete the document	Black box
5	Publish a document	Author will write a document and publish it	Black box
6	Setup title of a document	Moderator will initiate document by setting up a title	Black box
7	Enter invalid name for characters of a play	Moderator will enter an invalid name (numbers/special characters) for the characters of a play	Black box
8	Leave title field of a document empty	Moderator will not specify the title of the document and leaves the title field empty	Black box
9	Enter valid name for characters of a play	Moderator will enter letters for the characters of a play	Black box
10	Invalid title of a document	Moderator will enter an existing name for the title of a document	Black box

5.3.3. Test Cases

A test case is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly. The process of developing test cases can also help find problems in the requirements or design of an application. The test cases for this Facebook application are given in table19: test cases.

Table21: Test cases

Test No. 1					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**
1	Reader will click "READ" , then click a desired document	Reader will click "READ" , then click a desired document	Document will be opened for reading	Document will be opened for reading	success
Test No. 2					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**
2	Author will click "ADD" , then click a desired document , add document content and submit	Author will click "ADD" , then click a desired document , add document content and submit	Document will be updated	Document will be updated	Success
Test No. 3					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**
3	Moderator will click "CREATE" , write new document , and then submit	Moderator will click "CREATE" , write new document , and then submit	Document will be created	Document will be created	success
Test No. 4					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**

4	Moderator will open the document , click remove button	Moderator will open the document , click remove button	Document will be Removed	Document will be Removed	
Test No. 5					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**
5	Author will write in a document and select publish a document.	Author will write in a document and select publish a document.	Document will be published.	Document will be published.	success
Test No. 6					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**
6	Moderator will enter valid title/name of a new document using alphabets, numbers (& special characters)	Moderator will enter valid title/name of a new document using alphabets, numbers (& special characters)	Document will be created.	Document will be created.	Success
Test No. 7					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**

7	Moderator will enter numbers or special characters instead of alphabets for the name of characters	Moderator will enter numbers or special characters instead of alphabets for the name of characters	Invalid name for character. Field should only consist of letters	Invalid name for character. Field should only consist of letters	success
Test No. 8					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**
8	Moderator leaves the title field of the document empty and presses create button	Moderator leaves the title field of the document empty and presses create button	Document is not created. The title field is required	Document is not created. The title field is required	success
Test No. 9					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**
9	Moderator will enter alphabets for the name of characters	Moderator will enter alphabets for the name of characters	Valid name for character.	Valid name for character.	success
Test No. 10					
Test Case No.	**Expected Input**	**Actual Input**	**Expected Output**	**Actual Output**	**Remarks**
10	Moderator will enter an existing name as the title of a new document	Moderator will enter an existing name as the title of a new document	Invalid name, as the title entered is already existing	Invalid name, as the title entered is already existing	success

5.4. White Box Testing

White box testing strategy deals with the internal logic and structure of the code. In order to implement white box testing, the tester has to deal with the code, and hence is required to possess knowledge of coding and logic i.e., internal working of the code. White box test also needs the tester to look into the code and find out which unit/statement/chunk of the code is malfunctioning.

5.5. Acceptance Testing

In acceptance testing, test is performed to see if the requirements of a specification are met. The requirements are tested one by one on this application to check whether it meets those requirements or not.

Functional requirement No.	**Description**	**status**
1	Invite friends	Full filled
2	Add writing/update an existing document	Full filled
3	Create/write a document	Full filled
4	Remove a document	Full filled
5	Publish a document	Full filled
6	Setup title of a document	Full filled
7	Choose characters for play	Full filled
8	Set characters for play	Full filled
9	Rate and share a document	Full filled
10	View authors in collaboration	Full filled
11	Edit the text	Full filled

Table22: Acceptance testing

5.6 System Evaluation

System Evaluation involves checking that the desired objectives of the system have been met or not. While evaluating software, we have to assess software in terms of sustainability, maintainability, and usability.

Chapter 6
Conclusion & Future work

6.1 Conclusion

I conclude that with this Facebook application people from everywhere can collaborate to utilize their spare time by making better use of their skills and innovative ideas and can share them with their friends. This application will help you build memories with your friends. With this application you can write some serious stuff as well as funny n humorous stuff. I have provided people with a platform where they can spend more time with friends and can increase their social circle. This application will be a medium for Facebook users to stay in touch with their friends.

6.2. Future Work

In future, some more features can be added in this application like picture uploading and voice and text chatting. Another amazing feature is “Versioning”, to make new versions of a story. By jumping “anywhere” in an existing story and plotting it in any desired direction .With this feature user would be able to give a new turn to the theme of story exactly the way he/she wants the story to be. One feature that is planned to integrate as quickly as possible is of ‘report abuse’ so that users of this application do not use abusive language, that is, I have planned to make a check on the language the users are writing in order to avoid any abusive language. I would also extend this application to android because android has a huge market and bringing this application on android means increasing the number of users for this application.

References

The following are few resources used to develop the system.

1. http://foldingstory.com/
2. http://www.makeuseof.com/tag/7-collaborative-storytelling-websites-weave-digital-stories/
3. https://developers.facebook.com/
4. https://developers.facebook.com/docs/games/canvas
5. https://app.smartsheet.com/b/home
6. http://www.codeproject.com/Tips/351122/What-is-software-testing-What-are-the-different-ty
7. https://www.draw.io/