

COLLABORATIVE BANNER & BILLBOARD DESIGN TOOL



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ZOBIA JAMIL

ABSTRACT

Banners/Billboards are considered as perfect sources to depict customer thoughts about a product when companies want to sell their products via advertisements. A banner/billboard design is a collaborative design activity in which multiple artists usually work on different portions of a banner/billboard.

Billboard design tools are available, but they often not support the performance of collaborative banner/billboard design activities. Collaborative Banner & Banner Designing tool is interactive web-based tool that allows various users to create interactively and collaboratively the banners/billboards for the advertisements.

Collaborative banner and billboard offer multiple designing and editing features that allows designers both professional and non-professional to design creative banners in a user-friendly collaborative environment. It allows designers to collaborate their work and design remotely. In addition, it provides an interactive environment where designers can share thoughts and ideas among themselves.

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CHAPTER 1

SOFTWARE PROJECT MANAGEMENT PLAN

1.1 INTRODUCTION

Software Project Management Plan is a document provided for supervision of a software project; it describes the software approach, milestones and other essential details to that satisfy the product requirements.

1.1.1 PROJECT OVERVIEW

Collaborative Banner & Billboard Design Tool is web-based tool designed to let designers create, design and edit banners/billboards collaboratively and interactively. Since banner/billboard design is a collaborative activity in which multiple designers usually work on different portions of a banner/billboard; this tool will allow designers to work on portions of the banner assigned by team head, view work of other member, and can interact with other members via messages thus providing a collaborative and interactive environment.

1.1.2 PROJECT DELIVERABLES

Below are the five the project deliverables:

- Software Project Management Plan
- Software Requirement Specification
- Software Design Description
- Implementation
- Software Test Documentation

1.2 PROJECT ORGANIZATION

Project Organization contains description of software process model used for the project, roles the people play in the making of the project and tools and techniques to be used in this project.

1.2.1 SOFTWARE PROCESS MODEL

For the development of this project waterfall, process model is used.

1.2.2 TOOLS AND TECHNIQUES

The following table 1.2.2 shows the tools and techniques that are used in the project:

Sr.	Tools and Techniques
1	MS Word, MS Visio 2016
2	MySQL Database
3	ProjectLibre 1.6.2
4	Wamp Server

Table No. 1.1

1.3 PROJECT MANAGEMENT PLAN

Project Management plan describes the task, the deliverables and milestones and resources needed to complete the task.

1.3.1 Tasks

Following is the list of tasks for the project:

- **Problem Understanding**
 - **Description:**
First problem definition is must.
 - **Deliverables and Milestones:**
None
 - **Resources Needed:**
People: Zobia Jamil, Supervisor
 - **Dependencies and Constraints:**
None

- **Software Project Management plan**
 - **Description:**
Secondly, software approach and milestones are identified.
 - Resources Needed:**
People: Zobia Jamil, Supervisor
Software: MS Word, ProjectLibre
 - **Dependencies and Constraints:**
Problem Understanding

- **Software Requirement Specification**
 - **Description:**
Thirdly, analysis on how the requirements will meet is included.
 - **Deliverables and Milestones**
SPMP and SRS Document.
 - **Resources Needed:**
People: Zobia Jamil, Supervisor
Software: MS Word, MS Visio
 - **Dependencies and Constraints:**
SPMP

- **Software Design Description**
 - **Description:**
Fourthly, detailed design and interface design will be included.
 - **Resources Needed:**
People: Zobia Jamil, Supervisor
Software: MS Word, MS Visio
 - **Dependencies and Constraints:**
Analysis and Requirement.

- **Software Test Documentation**
 - **Description:**
In this part test plans and test case to verify and validate the tool and their results will be included
 - **Deliverables and Milestones**
SDD and STD.
 - **Resources Needed:**
Zobia Jamil
 - **Dependencies and Constraints:**
SDD

- **Software Implementation**
 - **Description:**
How the system will be implemented.
 - **Resources Needed:**
Zobia Jamil
 - **Dependencies and Constraints:**
STD

1.3.2 Timetable and Gantt Chart

A Gantt chart is a type of bar chart that demonstrates a project schedule. It also illustrates the dependency relationships between activities and current schedule status.

	Name	Duration	Start	Finish	Resource Names
1	COLLABORATIVE BANNER/BILLBOARD DESGIN TOOL	210 days?	9/19/17 8:00 AM	4/16/18 5:00 PM	Zobia Jamil;Supervisor
2	Problem Understanding	1 day?	9/19/17 8:00 AM	9/19/17 5:00 PM	
3	Software Project Management Plan	7 days?	9/19/17 8:00 AM	9/25/17 5:00 PM	
4	Introduction	1 day?	9/19/17 8:00 AM	9/19/17 5:00 PM	
5	Project Organization	3 days?	9/19/17 8:00 AM	9/21/17 5:00 PM	
6	Project Management Plan	4 days?	9/22/17 8:00 AM	9/25/17 5:00 PM	
7	Meeting with supervisor	1 day?	9/25/17 8:00 AM	9/25/17 5:00 PM	
8	Milestone: smp reviewed	0 days?	9/25/17 8:00 AM	9/25/17 8:00 AM	
9	Analysis and Requirement	36 days?	9/26/17 8:00 AM	10/31/17 5:00 PM	Zobia Jamil;Supervisor,...
10	Requirement Analysis	4 days?	9/26/17 8:00 AM	9/29/17 5:00 PM	
11	Define Requirements	4 days?	9/26/17 8:00 AM	9/29/17 5:00 PM	
12	Meeting with Teacher	1 day?	9/29/17 8:00 AM	9/29/17 5:00 PM	
13	Milestone: Requirement Defined	1 day?	9/29/17 8:00 AM	9/29/17 5:00 PM	
14	Define Usecase	11 days?	9/29/17 8:00 AM	10/9/17 5:00 PM	Zobia Jamil;Supervisor
15	Write Use cases	8 days?	9/29/17 8:00 AM	10/6/17 5:00 PM	
16	Draw use case diagram	3 days?	10/6/17 8:00 AM	10/8/17 5:00 PM	
17	Meeting with supervisor	1 day?	10/9/17 8:00 AM	10/9/17 5:00 PM	
18	Milestone: Requirments and usecase reviewed	1 day?	10/9/17 8:00 AM	10/9/17 5:00 PM	
19	Develop SRS	13 days?	10/19/17 8:00 AM	10/31/17 5:00 PM	Zobia Jamil;Supervisor,...
20	Identify specific requirements	8 days?	10/19/17 8:00 AM	10/26/17 5:00 PM	
21	External Interface	2 days?	10/19/17 8:00 AM	10/20/17 5:00 PM	
22	Writing Product Functions with detail	4 days?	10/20/17 8:00 AM	10/23/17 5:00 PM	
23	Define Software system Attributes	2 days?	10/23/17 8:00 AM	10/24/17 5:00 PM	
24	Develop Domain Model	2 days?	10/24/17 8:00 AM	10/25/17 5:00 PM	
25	Meeting with supervisor	1 day?	10/26/17 8:00 AM	10/26/17 5:00 PM	
26	Review Requirements	1 day?	10/26/17 8:00 AM	10/26/17 5:00 PM	
27	Milestone: Requirments reviewed	1 day?	10/26/17 8:00 AM	10/26/17 5:00 PM	

Figure 1.1 Time table

ID	Name	Duration	Start	Finish	Resource Names
27	Milestone: Requirments reviewed	1 day?	10/26/17 8:00 AM	10/26/17 5:00 PM	
28	Finalize SRS document	5 days?	10/26/17 8:00 AM	10/30/17 5:00 PM	
29	Meeting with Supervisor	1 day?	10/30/17 8:00 AM	10/30/17 5:00 PM	
30	Refine SRS Document	1 day?	10/30/17 8:00 AM	10/30/17 5:00 PM	
31	Finalize 1st deliverable document	1 day?	10/31/17 8:00 AM	10/31/17 5:00 PM	
32	Milestone: 1st deliverable	0 days	11/1/17 8:00 AM	11/1/17 8:00 AM	
33	Software Design Description	25 days?	11/2/17 8:00 AM	11/26/17 5:00 PM	Zobia Jami;Supervisor;S...
34	System Architectural Design	25 days?	11/2/17 8:00 AM	11/26/17 5:00 PM	
35	Develop Architectural design	2 days?	11/2/17 8:00 AM	11/3/17 5:00 PM	
36	Review Architectural Design	2 days?	11/4/17 8:00 AM	11/5/17 5:00 PM	
37	Data Design	3 days?	11/5/17 8:00 AM	11/7/17 5:00 PM	
38	Define Database Architecture	2 days?	11/5/17 8:00 AM	11/6/17 5:00 PM	
39	Normalizae ERD	2 days?	11/6/17 8:00 AM	11/7/17 5:00 PM	
40	Meeting with suervisor	1 day?	11/7/17 8:00 AM	11/7/17 5:00 PM	
41	Redefine architectural and data designed redefined	1 day?	11/7/17 8:00 AM	11/7/17 5:00 PM	
42	Detail design	10 days?	11/10/17 8:00 AM	11/19/17 5:00 PM	
43	Make Sequence Diagram	5 days?	11/10/17 8:00 AM	11/14/17 5:00 PM	
44	Make class diagram	3 days?	11/14/17 8:00 AM	11/16/17 5:00 PM	
45	Meeting with supervisor	1 day?	11/17/17 8:00 AM	11/17/17 5:00 PM	
46	Diagrams reviewed	3 days?	11/17/17 8:00 AM	11/19/17 5:00 PM	
47	Interface Design	7 days?	11/20/17 8:00 AM	11/26/17 5:00 PM	
48	Develop Interface Design	5 days?	11/20/17 8:00 AM	11/24/17 5:00 PM	
49	Meeting with supervisor	1 day?	11/24/17 8:00 AM	11/24/17 5:00 PM	
50	Revivweing and Refining Interface design	3 days?	11/23/17 8:00 AM	11/25/17 5:00 PM	
51	Finalize SDD	2 days?	11/25/17 8:00 AM	11/26/17 5:00 PM	
52	Software Test Documentation	17 days?	11/27/17 8:00 AM	12/13/17 5:00 PM	
60	Milestone: 2nd deliverable	0 days	12/26/17 8:00 AM	12/26/17 8:00 AM	

Figure 1.2 Timetable

ID	Name	Duration	Start	Finish	Resource Names
52	Software Test Documentation	17 days?	11/27/17 8:00 AM	12/13/17 5:00 PM	
53	System Overview	2 days?	11/27/17 8:00 AM	11/28/17 5:00 PM	
54	Test Plan	3 days?	11/28/17 8:00 AM	11/30/17 5:00 PM	
55	Test Cases	5 days?	11/30/17 8:00 AM	12/4/17 5:00 PM	
56	Meeting with supervisor	1 day?	12/4/17 8:00 AM	12/4/17 5:00 PM	
57	Review and refine test documentation	3 days?	12/5/17 8:00 AM	12/7/17 5:00 PM	
58	Finalize STD	4 days?	12/7/17 8:00 AM	12/10/17 5:00 PM	
59	Finalize 2nd Deliverable Document	3 days?	12/11/17 8:00 AM	12/13/17 5:00 PM	
60	Milestone: 2nd deliverable	0 days	12/26/17 8:00 AM	12/26/17 8:00 AM	
61	Software Implementation	57 days?	2/19/18 8:00 AM	4/16/18 5:00 PM	Zobia Jami;Supervisor;S...
62	Building Front End	12 days?	2/19/18 8:00 AM	3/2/18 5:00 PM	Zobia Jami;Supervisor;S...
63	Coding	8 days?	2/19/18 8:00 AM	2/26/18 5:00 PM	
64	Review for faults	2 days?	2/26/18 8:00 AM	2/27/18 5:00 PM	
65	Meeting with supervisor	1 day?	2/28/18 8:00 AM	2/28/18 5:00 PM	
66	Refine front end	3 days?	2/28/18 8:00 AM	3/2/18 5:00 PM	
67	Milestone: front end refined	0 days	3/28/18 8:00 AM	3/28/18 8:00 AM	
68	Building back end	32 days?	3/5/18 8:00 AM	4/5/18 5:00 PM	
69	Coding	15 days?	3/5/18 8:00 AM	3/19/18 5:00 PM	
70	Review for faults	2 days?	3/19/18 8:00 AM	3/20/18 5:00 PM	
71	Meeting with Supervisor	1 day?	3/21/18 8:00 AM	3/21/18 5:00 PM	
72	Refine backend	11 days?	3/26/18 8:00 AM	4/5/18 5:00 PM	
73	Milestone: Backend Refined	0 days	4/5/18 8:00 AM	4/5/18 8:00 AM	
74	Testing and refinement	8 days?	4/9/18 8:00 AM	4/16/18 5:00 PM	Zobia Jami;Supervisor;S...
75	testing tool	2 days?	4/9/18 8:00 AM	4/10/18 5:00 PM	
76	Meeting with Supervisor	1 day?	4/11/18 8:00 AM	4/11/18 5:00 PM	
77	Fault finding and correction	5 days?	4/12/18 8:00 AM	4/16/18 5:00 PM	
78	milestone: tool runs	0 days	4/16/18 8:00 AM	4/16/18 8:00 AM	

Figure 1.3 Timetable

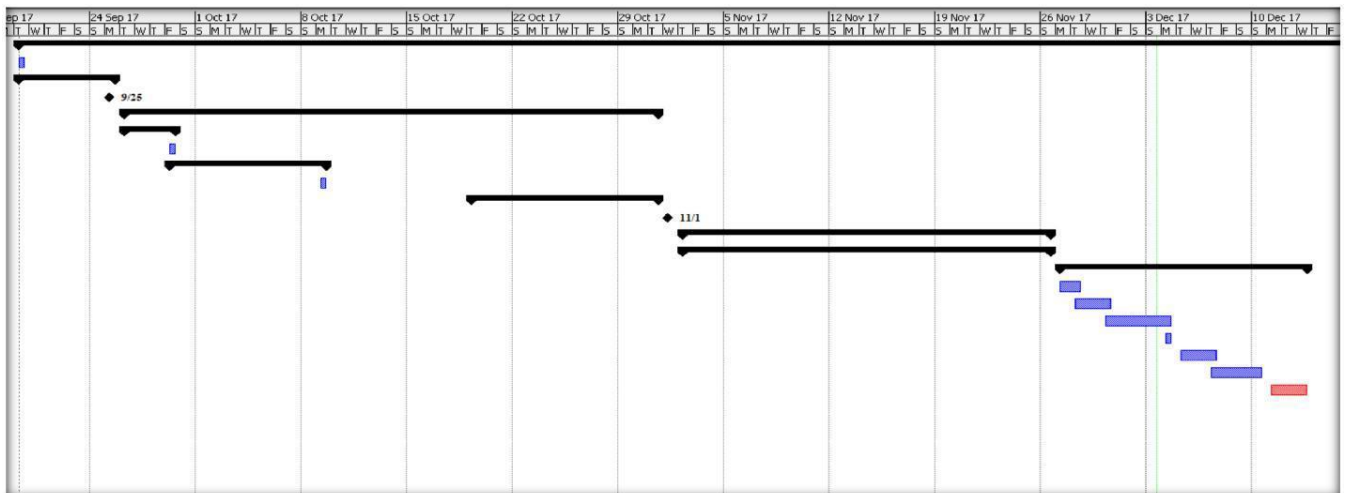


Figure 1.4 Gantt Chart

CHAPTER 2

SOFTWARE REQUIREMENT SPECIFICATION

2.1 INTRODUCTION

This chapter describes why the proposed system is needed and what its advantages are. It also outlines the major functions and objectives of the system and the major constraints associated with system. In short, we can say that this chapter provides an overview of the proposed system.

2.1.1 PURPOSE

The purpose of SRS is to specify the performance, functionality and interface requirements of the project. All of the required features of the project expressed by the client and agreed upon by the developer will be expressed in this document.

2.1.2 SCOPE

Collaborative Banner/Billboard Design Tool will allow multiple users to create and edit banners/billboards designs on an online collaborative and interactive platform.

- Allows designers (team heads) to create canvas.
- Allows designers (team heads) to assign portions to members.
- Allows designers to add images, text, lines, shapes etc. in their respective portion.
- Allows designers to edit design using multiple features.
- Allows designers to interact with other team members.
- Allows designers to view other team members' work.

2.1.3 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

DB: Database

DBMS: Database

Management System UC:

Use case

2.2 OVERALL DESCRIPTION

This section of the SRS should describe the general factors that affect the product and its requirements. [6]

2.2.1 PRODUCT PERSPECTIVE

The product perspective covers all the interfaces of the products.

- **User Interfaces:**

User guide (user documentation) must be adequate to teach the users on how to use this tool. Help instructions appear on every button that will indicate the function of the button. Icons and fonts will be kept simple to

make users understand the function of feature easily.

- **Hardware Interfaces**

Keyboard and mouse are used to input and monitor is to display output. While minimum hardware requirements are:

- Minimum processor Pentium IV
- RAM 512 MB.

- **Software Interfaces:**

Since this tool must run over the internet, all the hardware shall require connection to internet

- Web Browser: Internet Explorer (8.0 and above), Mozilla Firefox (3.0 and above), or Google Chrome
- Operating System: Windows (Windows 7 & above)

- **Communication Interfaces:**

As the system is internet based, therefore it will involve some standard communication networking protocol. These protocols are usually mounted automatically by the OS (operating system) running on the system.

- **HTTP:** It is a protocol used by the World Wide Web service to make communication conceivable between a web server and a web browser.
- **TCP/IP:** This protocol is used to communicate data all around the internet.

2.2.2 PRODUCT FUNCTIONS

Following is the table of product functions

<i>Team Head</i>	<i>TEAM MEMBER</i>
1. Register account	1. Register account
2. Login	2. Login
3. Logout	3. Logout
4. Update account	4. Update account
5. Delete account	5. Delete account
6. View team	6. View team
7. Create canvas	7. Add artifact
8. Invite members	8. Edit artifact
9. Add artifact	9. Delete artifact
10. Edit artifact	10. View canvas
11. Delete artifact	11. Send message
12. View canvas	12. Edit Shared Canvas
13. Edit canvas	
14. Delete canvas	
15. Send message	
16. Edit Shared Canvas	

Table No. 2.1

2.2.3 USE CASES

The use case diagram, list of use case and their description is as follows:-

USECASE DIAGRAM

Following figure defines a set of actions (use cases) that systems (subject) should or can achieve in association with one or more external users of the system (actors).

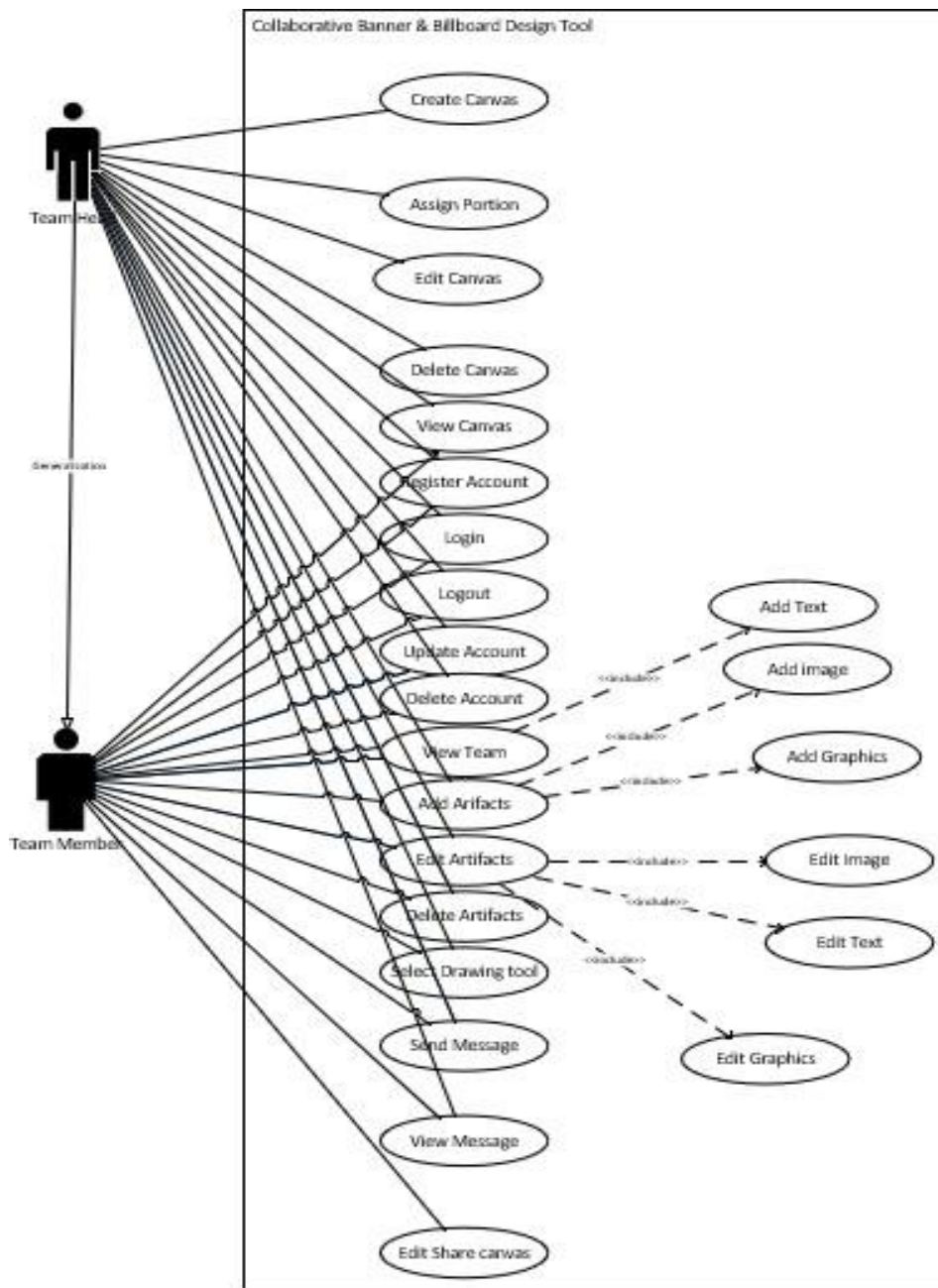


Figure 2.1 USE CASE DIAGRAM

USECASE DETAILS

The use case details include primary actor, pre and post conditions, main and alternative scenarios.

- **UC-1 REGISTER ACCOUNT**

The following table describes use case “Register Account” in detail:

UC-1: Register Account	
Primary actor	Users (Team Head, Team member)
Goal in context	Users will be able to create new user’s account.
Pre-condition	Users must have opened the sign up page.
Post-condition	New user’s account has been created successfully.
Main Success Scenario	<ol style="list-style-type: none"> 1) User presses the sign up option. 2) System shows “Register account” model. 3) User inputs account details. 4) System displays account’s registered message.
Alternative Scenario	*Server is down. *Internet is not available 4a) User do not fill all required fields. a) System prompts user to fill all required fields.
Technology	<ol style="list-style-type: none"> 1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 2.2 UC FOR REGISTER ACCOUNT

- **UC-2 LOGIN**

The following table describes use case “Login” in detail:

UC-2: Login	
Primary actor	Users (Team Head, Team Member)
Goal in context	User will be able to login account.
Pre-condition	User is required to have an account.
Post-condition	User successfully has logged in.
Main Success Scenario	<ol style="list-style-type: none"> 1) User enters email address and password. 2) User clicks the login button. 3) System displays the dashboard.

Alternative Scenario	*Server is down. *Internet is not available. 1a) User enters incorrect credentials. a) System prompts user to enter correct username. 2a) User submits information without filling all required fields. a) System asks user to fill all required fields.
Technology	1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No 2.4 UC FOR LOGOUT

- **UC-3 LOGOUT**

The following table describes use case “Logout” in detail:

UC-3: Logout	
Primary actor	Users (Team head, Team Member)
Goal in context	User will be able to sign out account.
Pre-condition	User is required be logged in.
Post-condition	User successfully has been logged out.
Main Success Scenario	1) User presses “Logout” button. 2) System displays login screen.
Alternative Scenario	*Server is down. *Internet is not available.
Technology	1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No 2.4 UC FOR LOGOUT

- **UC- 4 UPDATE ACCOUNT**

The following table describes use case “Update Account” in detail:-

UC-4: Update Account	
Primary actor	Users (Team Head, Team Members)
Goal in context	User will be able to update account.

Pre-condition	User is required be logged in.
Post-condition	User updates successfully the account.
Main Success Scenario	<ol style="list-style-type: none"> 1) User clicks the profile button. 2) System shows profile. 3) User modifies the account information, change password etc. 4) User presses “Update” button.
Alternative Scenario	<p>*Server is down. *Internet is not available.</p> <ol style="list-style-type: none"> 4a) User presses update profile button without information without filling all required fields. <ol style="list-style-type: none"> a) System asks user to fill all required fields.
Technology	<ol style="list-style-type: none"> 1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 2.5 UC FOR UPDATE ACCOUNT

- **UC-5 DELETE ACCOUNT**

The following table describes use case “Delete Account” in detail:-

UC-5: Delete Account	
Primary actor	Users (Team Head, Team Members)
Goal in context	User will be able to delete account.
Pre-condition	User is required be logged in.
Post-condition	User successfully deleted the account.
Main Success Scenario	<ol style="list-style-type: none"> 1) User clicks the delete button. 2) System deletes account.
Alternative Scenario	<p>*Server is down. *Internet is not available.</p>
Technology	<ol style="list-style-type: none"> 1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 2.6 UC FOR DELETE ACCOUNT

- **UC-6 VIEW TEAM**

The following table describes use case “View Team” in detail:

UC-6: View Team	
Primary actor	User (Team Head, Team Members)

Goal in context	User will be able to view particular team.
Pre-condition	User is required to be logged in.
Post-condition	User has successfully viewed team.
Main Success Scenario	1) User clicks team button. 2) User views the team details.
Alternative Scenario	*Server is down. *Internet is not available.
Technology	1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No 2.7 UC FOR VIEW TEAM

- **UC-7 CREATE CANVAS**

The following table describes use case “Create Canvas” in detail:

UC-7: Create Canvas	
Primary actor	User (Team head)
Goal in context	User will be able to create canvas.
Pre-condition	User is required to be logged in.
Post-condition	User has created canvas successfully.
Main Success Scenario	1) User presses the Create Canvas button. 2) System shows Create Canvas model. 3) User inputs canvas details. 4) User presses “Create” button. 5) System displays “done” message.
Alternate Scenario	*Server is down. *Internet is not available. 4a). User presses update profile button without information without filling all required fields. a) System asks user to fill all required fields.
Technology	1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No 2.8 UC FOR CREATE CANVAS

- **UC-8 INVITE MEMBERS PORTION**

The following table describes use case “Invite Members” in detail:

UC-8: Invite Members	
Primary actor	User (Team head)
Goal in context	User will invite members to the canvas portions.

Pre-condition	User is required to be logged in.
Post-condition	User has assigned successfully.
Main Success Scenario	1) User enters portion number of canvas. 2) User adds user email of member. 3) User presses invite members
Alternate Scenario	*Server is down. *Internet is not available. 4a). User presses update profile button without information without filling all required fields. a) System asks user to fill all required fields.
Technology	1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 2.9 UC FOR INVITE MEMBERS

- **UC-9 ADD ARTIFACT**

The following table describes use case “Add Artifact” in detail:

UC-9: Add Artifact	
Primary actor	User (Team head, Team Member)
Goal in context	User will be able to add artifact e.g. text, image or graphics to the design
Pre-condition	User must be logged in and canvas is created.
Post-condition	User has added artifact successfully.
Main Success Scenario	1. User selects the artefact from the bar. 2. The artefact appears on screen
Alternate Scenario	*Server is down. *Internet is not available.
Technology	Mouse and Keyboard for input Screen for display output Internet connection
Frequency	Many times a day.

Table No. 2.10 UC FOR ADD ARTIFACT

- **UC-10 EDIT ARTIFACT**

The following table describes use case “Edit Artifact” in detail:

UC-10: Edit Artefact	
Primary actor	User (Team head, Team Member)

Goal in context	User will be able to edit artefact e.g. text, image or graphics added to the design.
Pre-condition	User must be logged in and artefact is added.
Post-condition	User has edited artefact successfully.
Main Success Scenario	<ol style="list-style-type: none"> 1. User select the artefact. 2. User can edit artefact
Alternate Scenario	<ul style="list-style-type: none"> *Server is down. *Internet is not available.
Technology	<ol style="list-style-type: none"> 1. Mouse and Keyboard for input. 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 2.11 UC FOR EDIT ARTIFACT

- **UC-11 DELETE ARTIFACT**

The following table describes use case “Delete Artifact” in detail:

UC-11: Delete Artifact	
Primary actor	User (Team head, Team Member).
Goal in context	User will be able to delete artifact.
Pre-condition	User must be logged in and have added artifact.
Post-condition	User has deleted artifact successfully.
Main Success Scenario	<ol style="list-style-type: none"> 1) User selects artifact. 2) User selects delete from dropdown menu.
Alternate Scenario	<ul style="list-style-type: none"> *Server is down. *Internet is not available.
Technology	<ol style="list-style-type: none"> 1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 2.12 UC FOR DELETE ARTIFACT

- **UC-12 VIEW CANVAS**

The following table describes use case “View Canvas” in detail:

UC-12: VIEW CANVAS	
Primary actor	User (Team Head, Team Members).
Goal in context	User will view the canvas.
Pre-condition	User is required to be logged in.
Post-condition	User has successfully viewed canvas.
Main Success Scenario	1) User clicks My/Shared Canvas option. 2) System displays canvas.
Alternate Scenario	*Server is down. *Internet is not available.
Technology	1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 2.13 UC FOR VIEW CANVAS.

- **UC-13 DELETE CANVAS**

The following table describes use case “Delete Canvas” in detail:

UC-14 Delete Canvas	
Primary actor	User (Team head)
Goal in context	User will be able to delete canvas.
Pre-condition	User must have logged in and created canvas.
Post-condition	User has deleted canvas successfully.
Main Success Scenario	1) User presses the “delete canvas” button. 2) System delete canvas
Alternate Scenario	*Server is down. *Internet is not available.
Technology	1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 214 UC FOR DELETE CANVAS.

- **UC-14 EDIT CANVAS**

The following table describes use case “Edit Canvas” in detail:

UC-14: Edit Canvas

Primary actor	User (Team head)
Goal in context	User will be able to edit canvas.
Pre-condition	User is required have logged in.
Post-condition	User successfully has edited canvas.
Main Success Scenario	1) User clicks on “Edit Canvas”. 2) System opens canvas in edit mode. 3) User can change canvas details and team portion.
Alternate Scenario	*Server is down. *Internet is not available.
Technology	1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 2.15 UC FOR EDIT CANVAS.

- **UC-15 SEND MESSAGE**

The following table describes use case “Send Message” in detail:

UC-15: Send Message	
Primary actor	User (Team members, Team Heads)
Goal in context	User will be able to send messages.
Pre-condition	User is required to be logged in.
Post-condition	User has successfully sent message.
Main Success Scenario	1) User chooses the user. 2) User types message in chat box. 3) User presses “Send Message” button.
Alternate Scenario	*Server is down. *Internet is not available.
Technology	1. Mouse and Keyboard for input 2. Screen for display output- 3. Internet connection
Frequency	Many times a day.

Table No. 16 UC FOR SEND MESSAGE

- **UC-17 EDIT SHARED CANVAS**

The following table describes use case “Edit Shared Canvas” in detail:

UC-18: Edit Shared Canvas

Primary actor	User (Team members)
Goal in context	User will be able to edit shared canvas.
Pre-condition	User is required to be logged in.
Post-condition	User has successfully edited shared canvas.
Main Success Scenario	<ol style="list-style-type: none"> 1) User clicks on “Play Button”. 2) System opens portion in edit mode. 3) User can edit artifacts in portion. 4) System prompts portions edited.
Alternate Scenario	*Server is down. *Internet is not available.
Technology	<ol style="list-style-type: none"> 1. Mouse and Keyboard for input 2. Screen for display output 3. Internet connection
Frequency	Many times a day.

Table No. 2.18 UC FOR EDIT SHARED CANVAS.

2.3 SPECIFIC REQRIMENTS

Specific requirements include the following:

2.3.1 USER CHARACTERISTICS

The users of this system, based on their roles, are team heads and members. These users are known because of their experience and technical expertise.

The following table describes users and their characteristics.

USERS	CHARACTERISTICS
Team Head/Team Members	The users of this system are all designers who would visit website, create and edit banners/billboards. These users are should have expertise of internet. They must have basic understandings about computers. They should be familiar with tools used in designing process.

Table No. 2.19 USER CHARACTERISITCS

2.3.2 GENERAL CONSTRAINTS

- Anyone is permitted to create his/her login account and register himself/herself.
- Only team head can make team and assign work portions to team members.
- The team members can work only on their portion and can only view the whole canvas.

2.3.3 ASSUMPTIONS AND DEPENDENCIES

- The computer is required have internet connection and Internet server capabilities.
- The users should know the English language.
- Tool is dependent on access to Internet.
- The users should be familiar with banner/billboard designing process.
- Every user must have an email account for registration.

2.3.4 SYSTEM ATTRIBUTES

- **Security**
Each user account is password protected. Only team head allows members to access to any portion on the canvas. Other members are restricted to their own portions.
- **Maintainability**
The tool is to be developed so that it can be easily maintained. In addition, it should allow integrating new requirements in any module of system.
- **Portability**
The tool is web based so it is portable on any system that has internet connection.
- **Reliability**
The website should be reliable and does not counter any failure. The system should never hang or crash, other than as the result of an operating system error.
- **Availability**
The tool should be accessible to the users all of the time.

2.4 DOMAIN MODEL

A domain model is a conceptual model of the domain that incorporates both behavior and data:

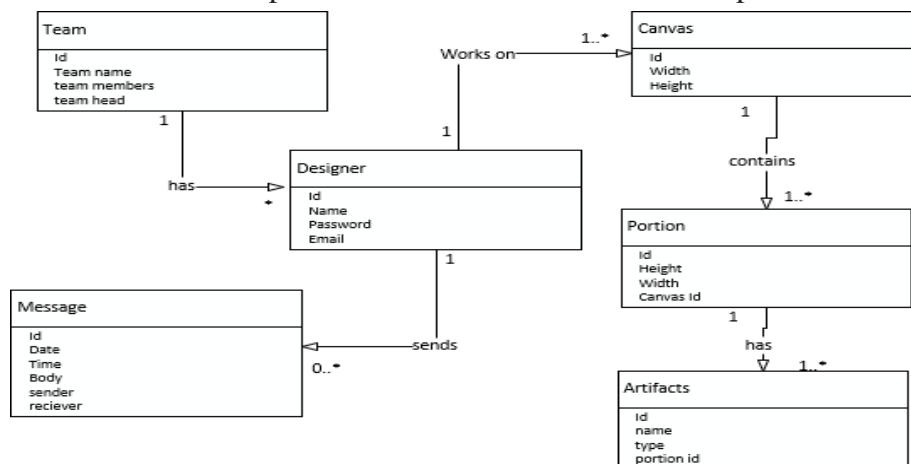


Figure 2.2 DOMAIN MODEL

2.5 DATABASE REQUIREMENT

MySQL database will use for this system to store all information. It will allow the user information to be stored and then display in various forms to each user. Tables will communicate and share information.

Following diagram demonstrates a system's entities and the associations between those entities.

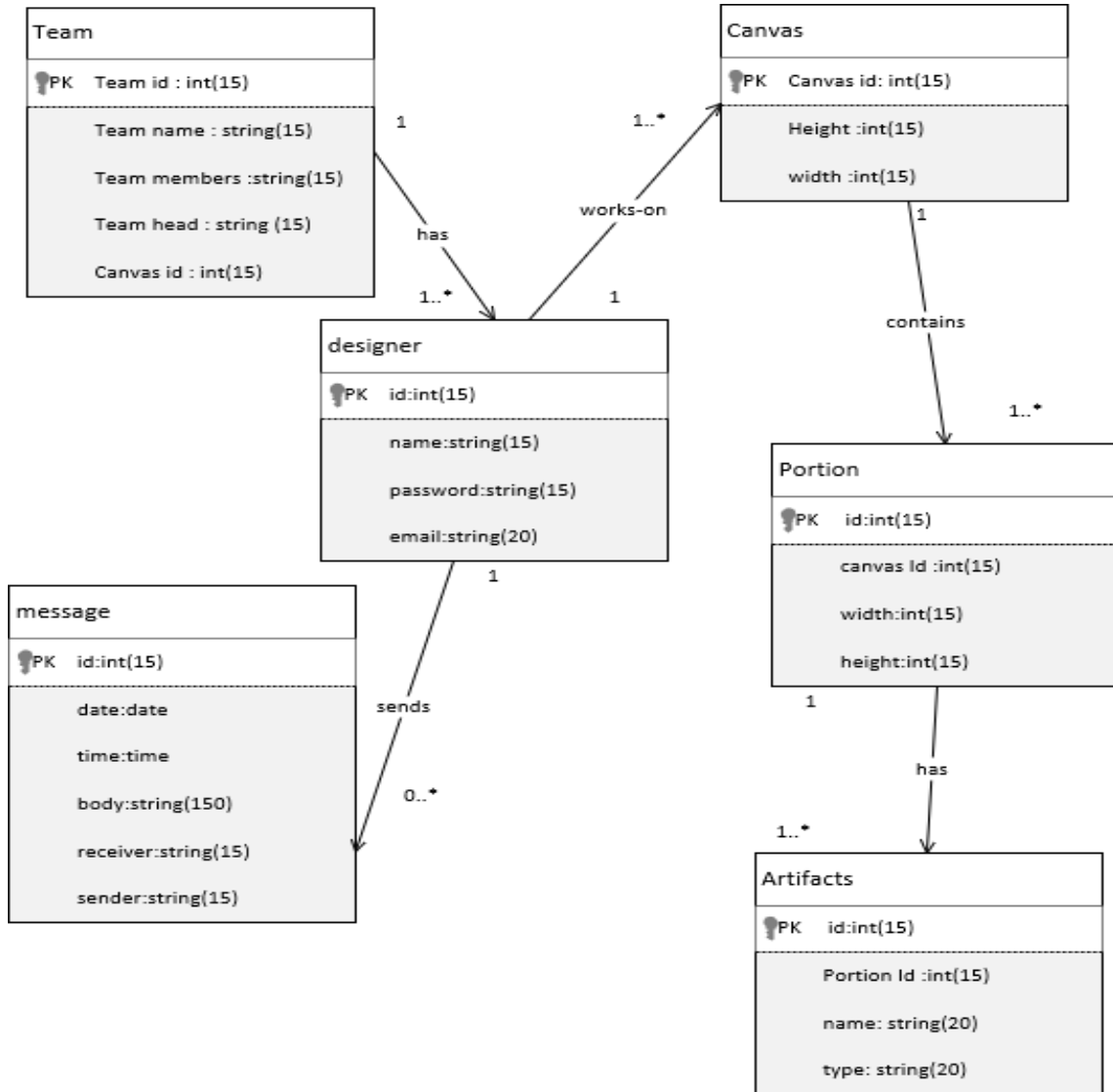


Figure 2.3 DATABASE DIAGRAM

2.6 SYSTEM SEQUENCE DIAGRAMS

Following shows, for a particular scenario of a use case, the events that external actors generate, their order, and possible inter-system events. [7]

2.6.1 SSD FOR LOGIN

Following figure shows the system sequence diagram of login:

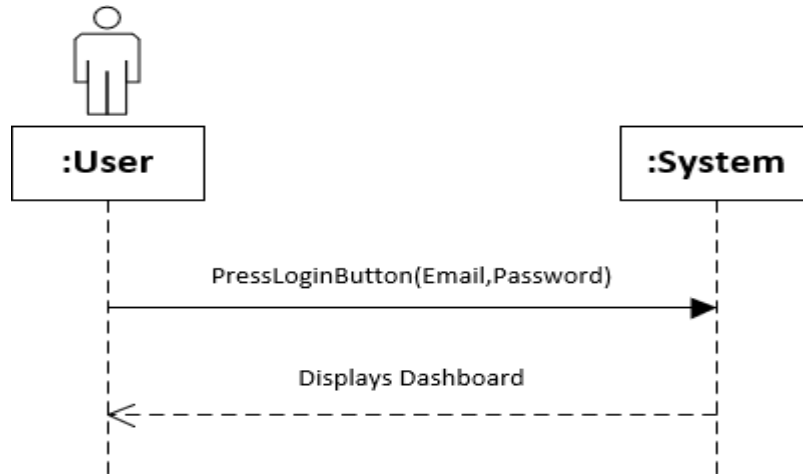


Figure 2.4 SSD FOR LOGIN

2.6.2 SSD FOR LOGOUT

Following figure shows the system sequence diagrams of logout:

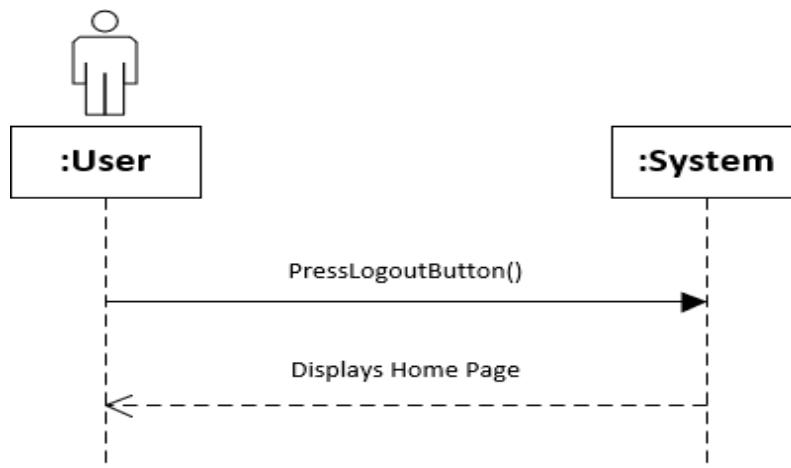


Figure 2.5 SSD FOR LOGOUT

2.6.3 SSD FOR REGISTER ACCOUNT

Following figure shows the system sequence diagram of register account:

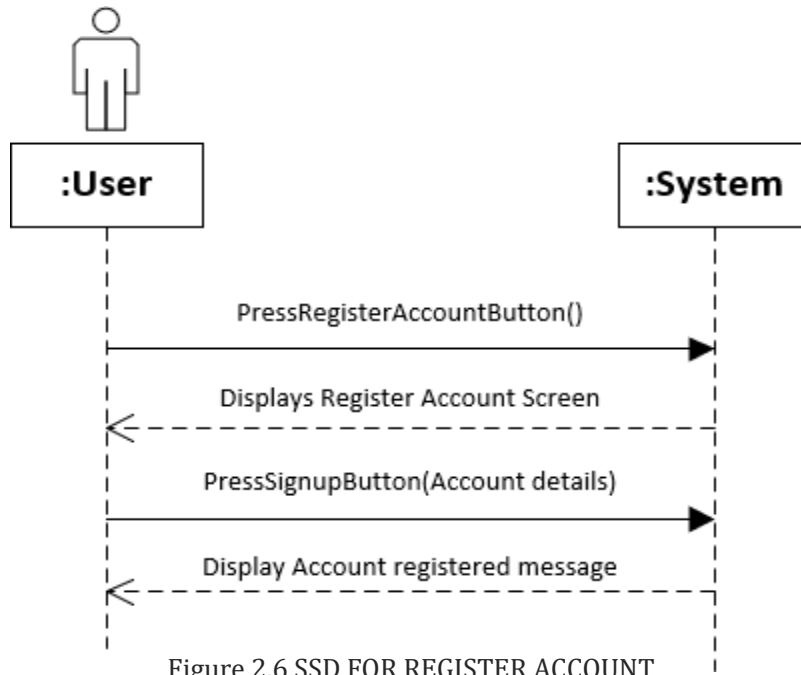


Figure 2.6 SSD FOR REGISTER ACCOUNT

2.6.4 SSD FOR UPDATE ACCOUNT

Following figure shows system sequence diagram of update account:

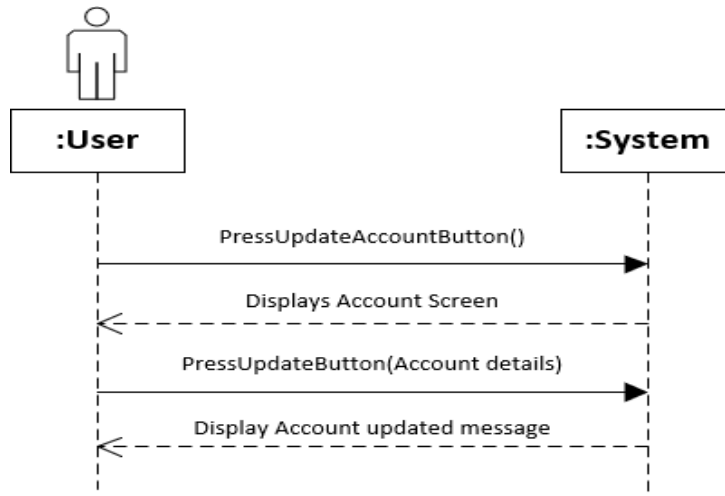


Figure 2.7 SSD FOR UPDATE ACCOUNT

2.6.5 SSD FOR DELETE ACCOUNT

Following figure shows system sequence diagram of delete account:

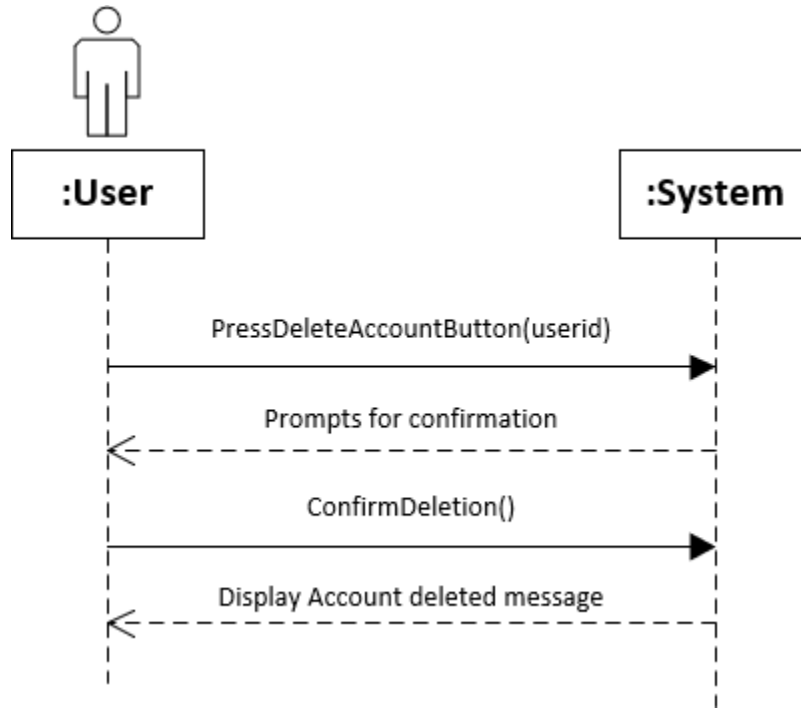


Figure 2.8 SSD FOR DELETE ACCOUNT

2.6.6 SSD FOR VIEW TEAM

Following Figure shows system sequence diagram of view team:

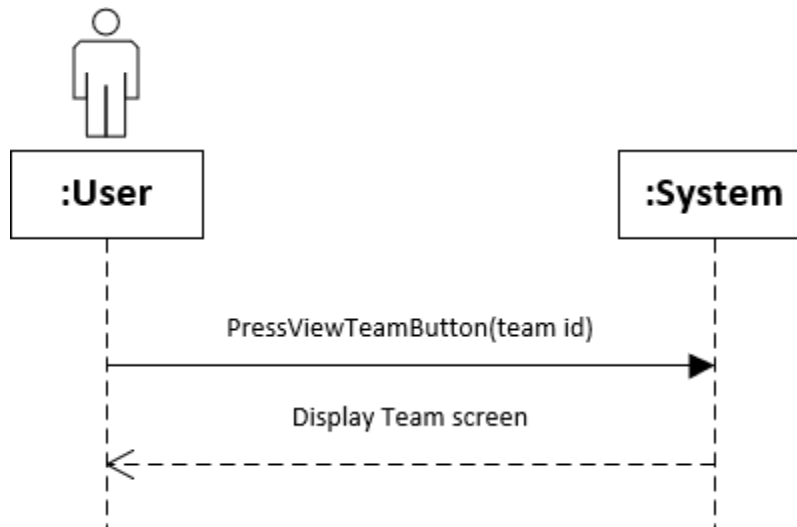


Figure 2.9 VIEW TEAM

2.6.7 SSD FOR CREATE CANVAS

Following Figure shows system sequence diagram of create canvas:

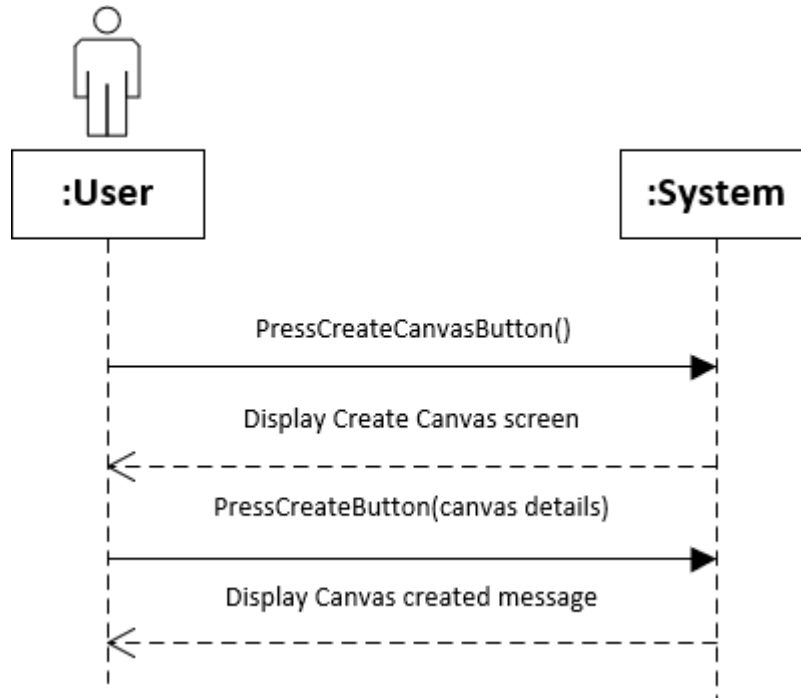


Figure 2.10 SSD FOR CREATE CANVAS

2.6.8 SSD FOR EDIT SHARED CANVAS

Following Figure shows system sequence diagram of edit shared canvas:

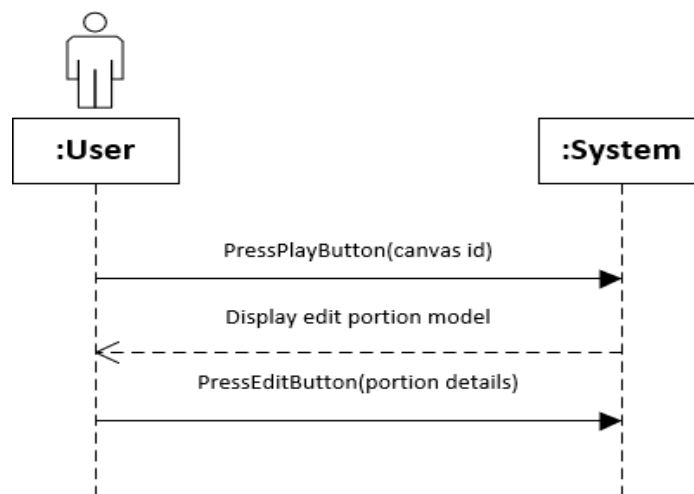


Figure 2.11 EDIT SHARED CANVAS

2.6.9 SSD FOR ADD ARTIFACT

Following Figure shows system sequence diagram of add artifact:

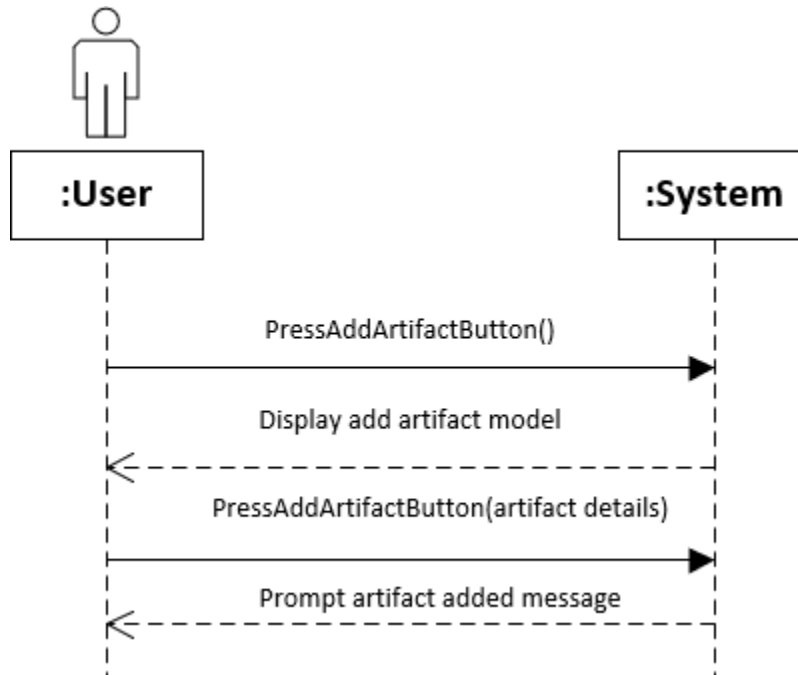


Figure 2.12 SSD FOR ADD ARTIFACT

2.6.10 SSD FOR EDIT ARTIFACT

Following Figure shows system sequence diagram of edit artifact:

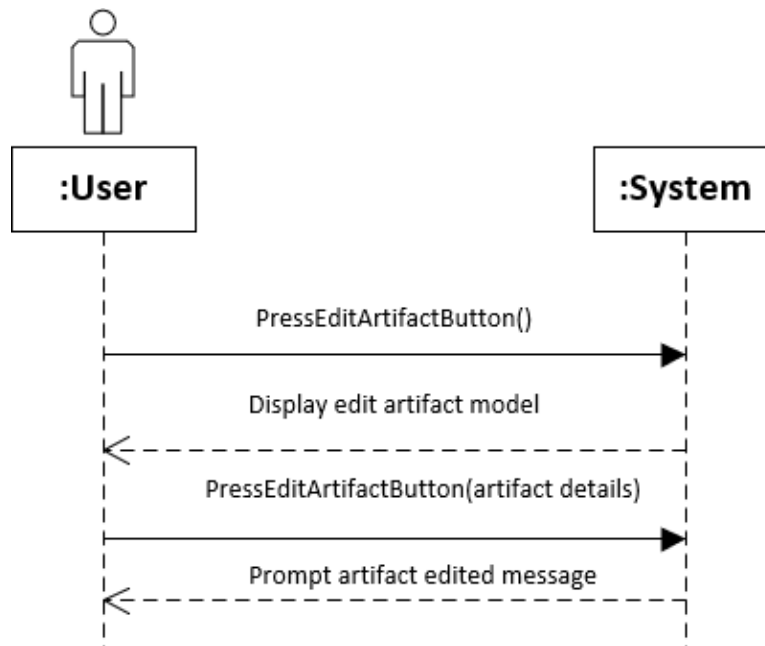


Figure 2.13 SSD EDIT ARTIFACT

2.6.11 SSD FOR VIEW CANVAS:

Following Figure shows system sequence diagram of view canvas:

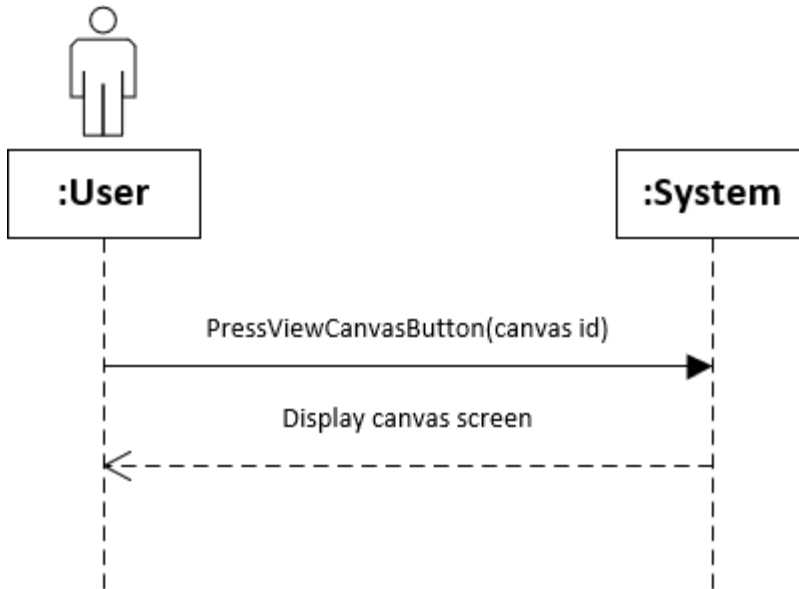


Figure 2.14 SSD FOR VIEW CANVAS

2.6.12 SSD FOR EDIT CANVAS:

Following Figure shows system sequence diagram of edit canvas:

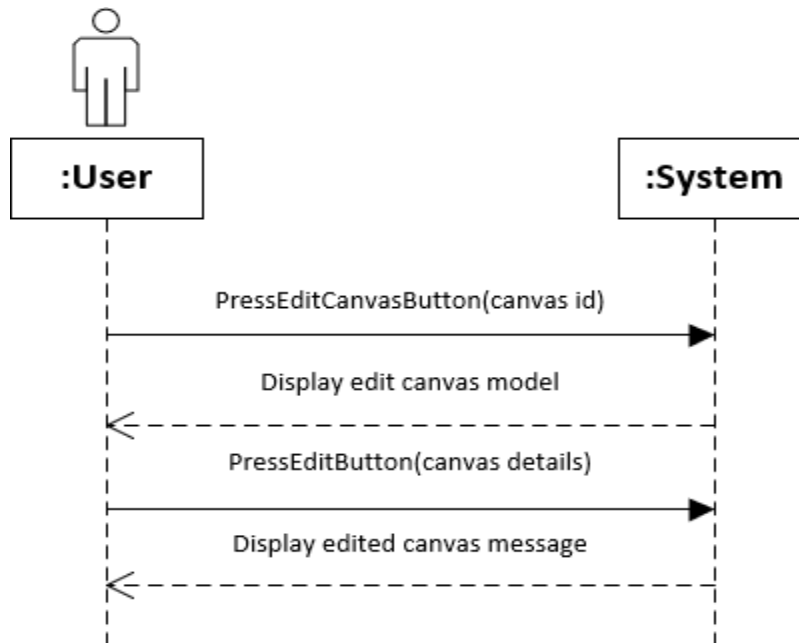


Figure 2.15 EDIT CANVAS

2.6.13 SSD FOR DELETE CANVAS:

Following Figure shows system sequence diagram of delete canvas:

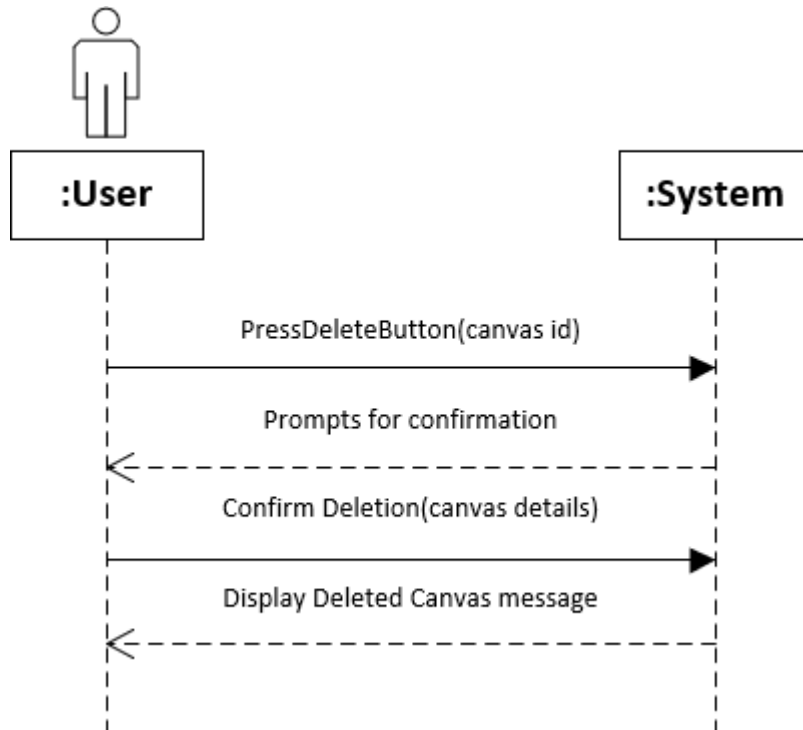


Figure 2.16 SSD FOR DELETE CANVAS

2.6.14 SSD FOR SEND MESSAGE:

Following Figure shows system sequence diagram of send message:

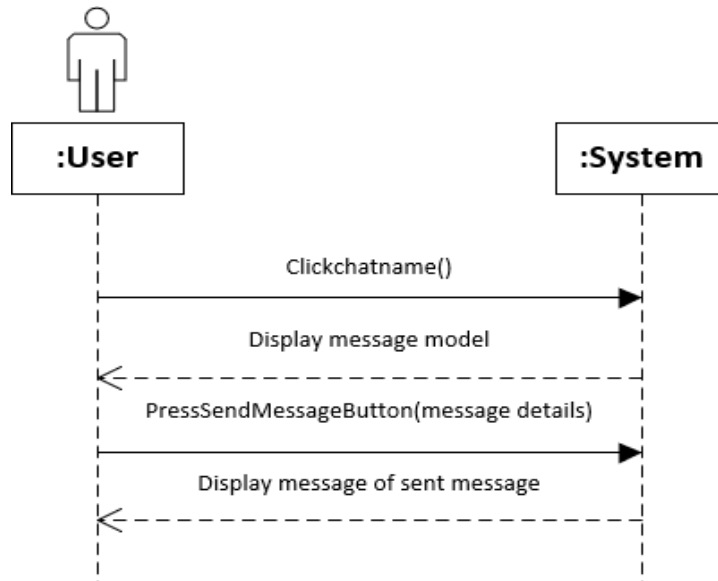


Figure 2.17 SSD FOR SEND MESSAGE

2.6.15 SSD FOR DELETE ARTIFACT:

Following Figure shows system sequence diagram of delete artifact:

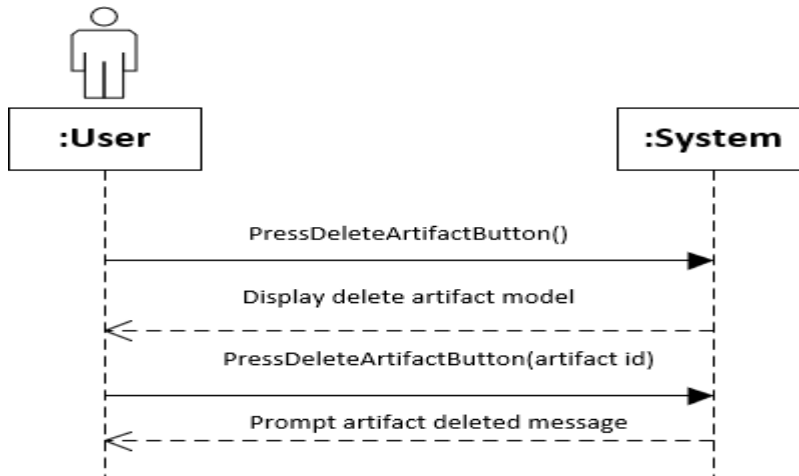


Figure 2.18 SSD FOR DELETE MESSAGE

2.6.16 SSD FOR INVITE MEMBERS:

Following Figure shows system sequence diagram of invite members:

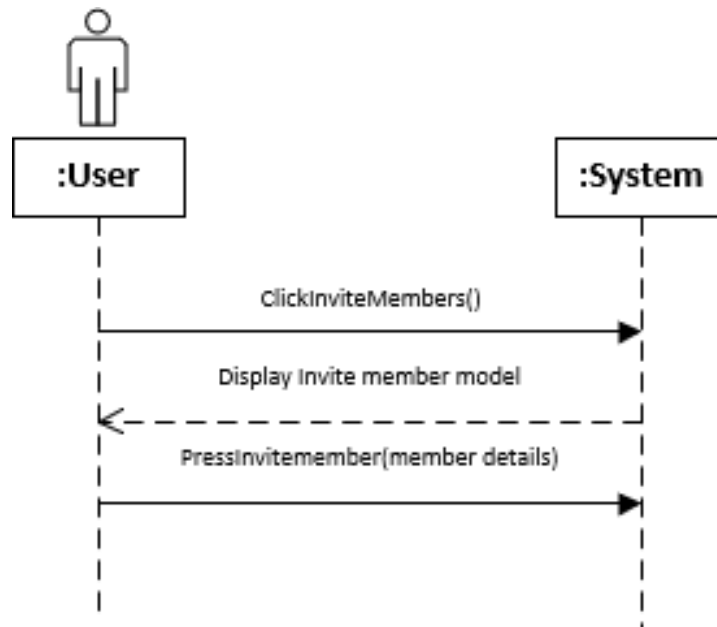


Figure 2.19 SSD FOR INVITE MEMBER

2.7 ACTIVITY DIAGRAMS

The activity diagram is a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system. The control flow is drawn from one operation to another. Of the system are as follows:

2.7.1 ACTIVITY DIAGRAM FOR LOGIN

Following Figure shows the activity diagram of login:

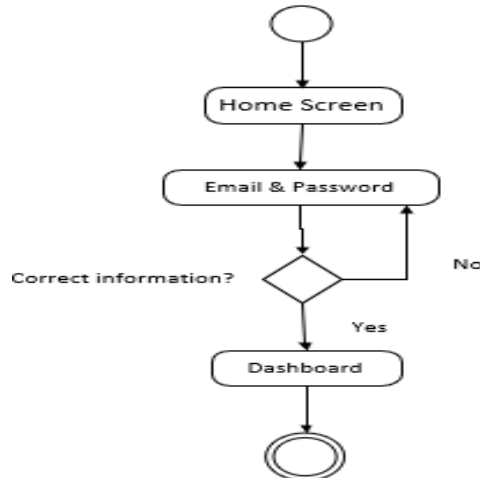


Figure 2.20 ACTIVITY DIAGRAM FOR LOGIN

2.7.2 ACTIVITY DIAGRAM FOR LOGOUT

Following Figure shows activity diagram of logout:

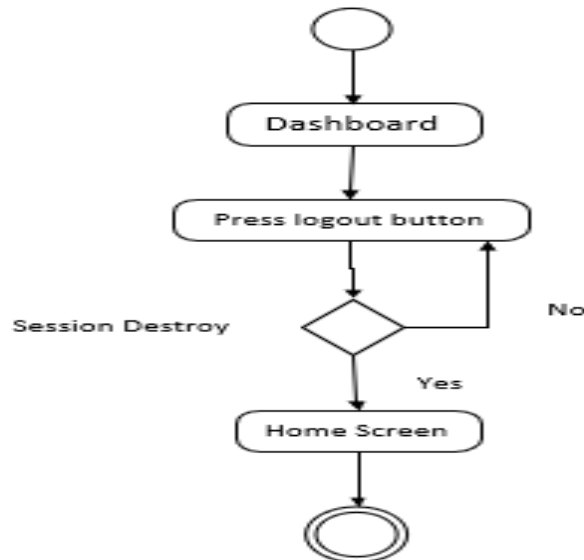


Figure 2.21 ACTIVITY DIAGRAM FOR LOGOUT

2.7.3 ACTIVITY DIAGRAM FOR TEAM HEAD OPEARTIONS

Following Figure shows activity diagram of team head operations:

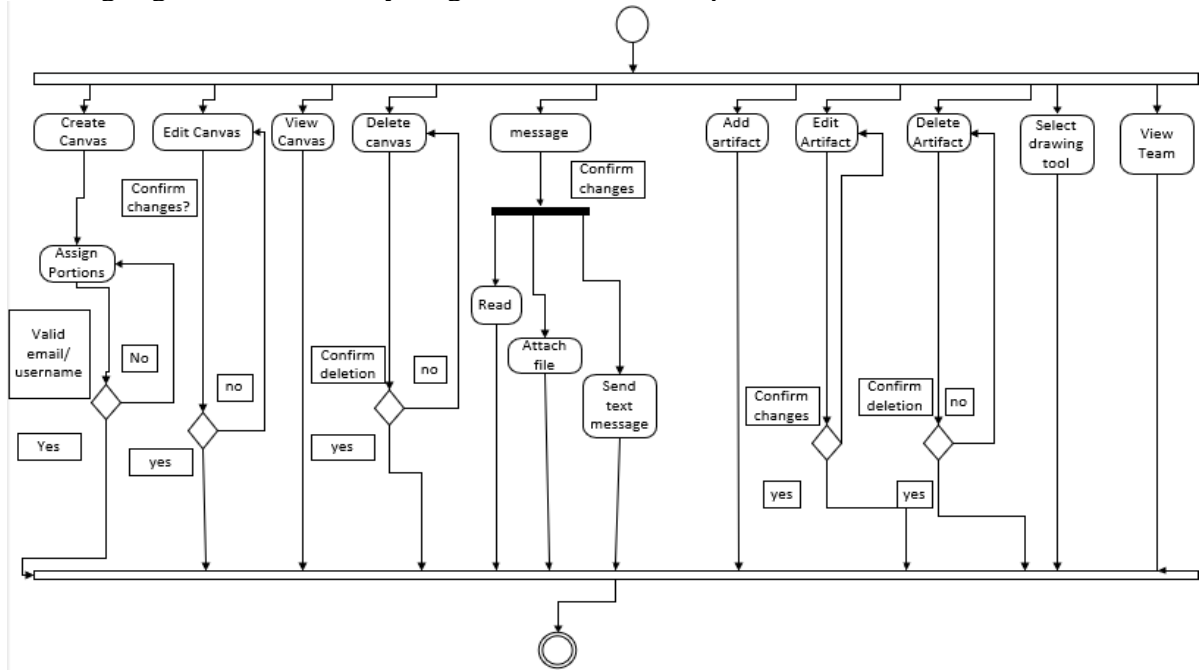


Figure 2.22 ACTIVITY DIAGRAM FOR TEAM HEAD OPERATIONS

2.7.4 ACTIVITY DIAGRAM FOR TEAM MEMBER OPERATIONS

Following Figure shows activity diagram of team members operations:

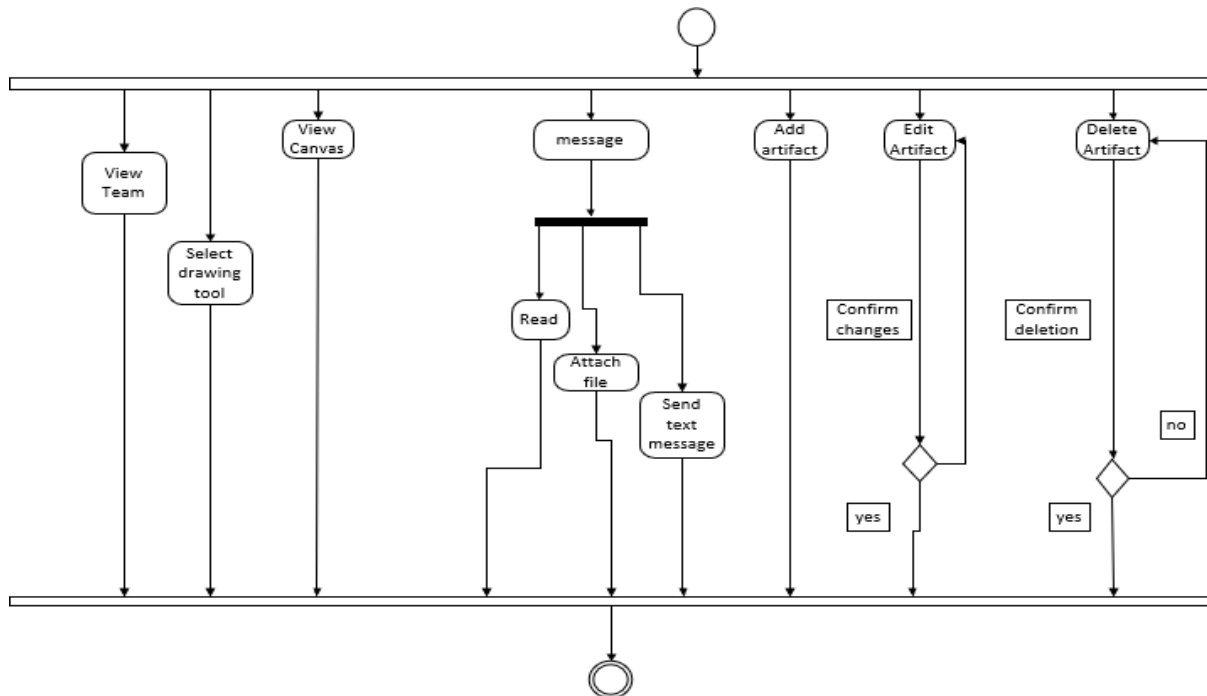


Figure 2.23 ACTIVITY DIAGRAM FOR TEAM MEMBER OPERATIONS

2.7.5 ACTIVITY DIAGRAM FOR REGISTER ACCOUNT

Following Figure shows activity diagram of register account:

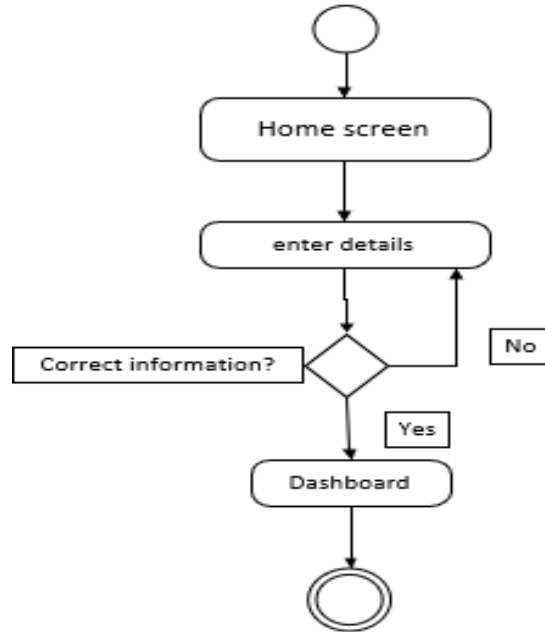


Figure 2.24 ACTIVITY DIAGRAM FOR REGISTER ACCOUNT

2.7.6 ACTIVITY DIAGRAM FOR UPDATE ACCOUNT

Following Figure shows activity diagram of update account:

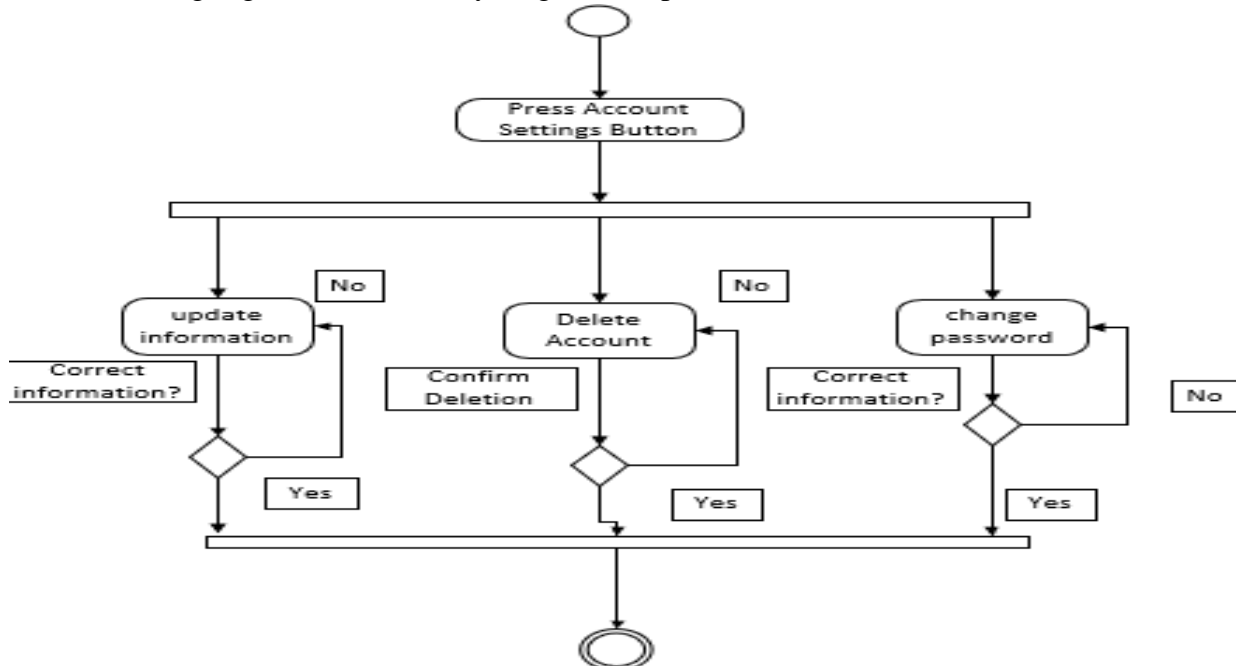


Figure 2.25 ACTIVITY DIAGRAM FOR UPDATE ACCOUNT

CHAPTER 3 SOFTWARE DESIGN DESCRIPTION

3.1 INTRODUCTION

The Software Design Document is a document to provide documentation, which will be used to aid in software development by providing the details for how the software should be built. Within the Software Design Document are narrative and graphical documentation of the software design for the It includes the description of how the software will meet the requirements.

3.1.1 DESIGN OVERVIEW

The software design document provides design details of Collaborative Banner and Billboard Design tool. The document contains a complete low-level description of the tool, providing insight into the structure and design of each component.

3.2 SYSTEM ARCHITECTURAL DESIGN

A system architecture is a conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system.

3.2.1 CHOSEN SYSTEM ARCHITECTURE

In this section, we describe chosen architecture of the system. The basic architecture of this system is 3-tier model. A 3-tier model uses the client/server computing model.

- Presentation Layer
- Application Layer
- Data Layer

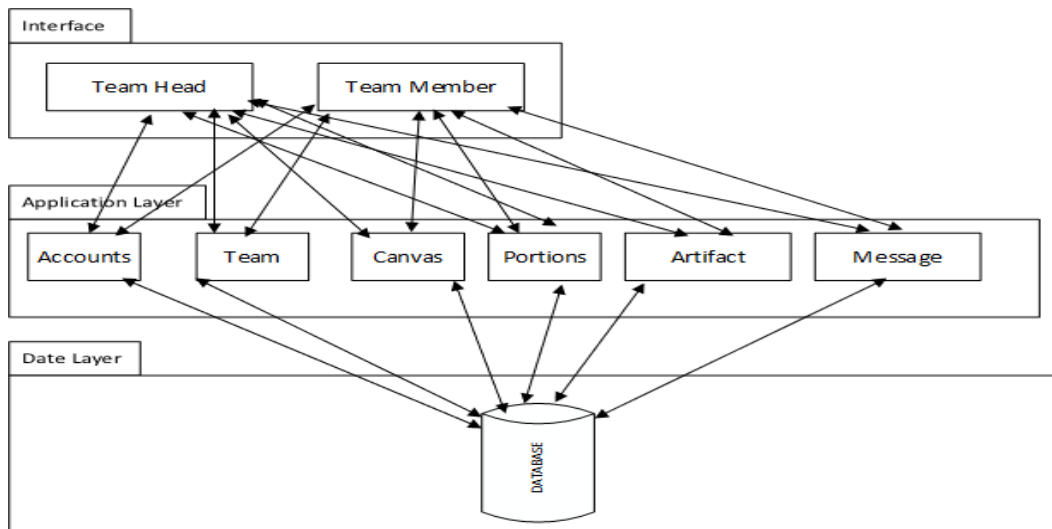


Figure 3.1 ARCHITECTURE DIAGRAM

3.2.2 SYSTEM INTERFACE DESCRIPTION

System interface describes the flow of resources. It is the logical characteristics of each interface between the software product and the hardware components of the system. It clearly shows how different entities of tool are interacting with each other.

3.3 DETAILED DESCRIPTION OF COMPONENTS

Following Figure 30 describes the components used to make those functionalities.

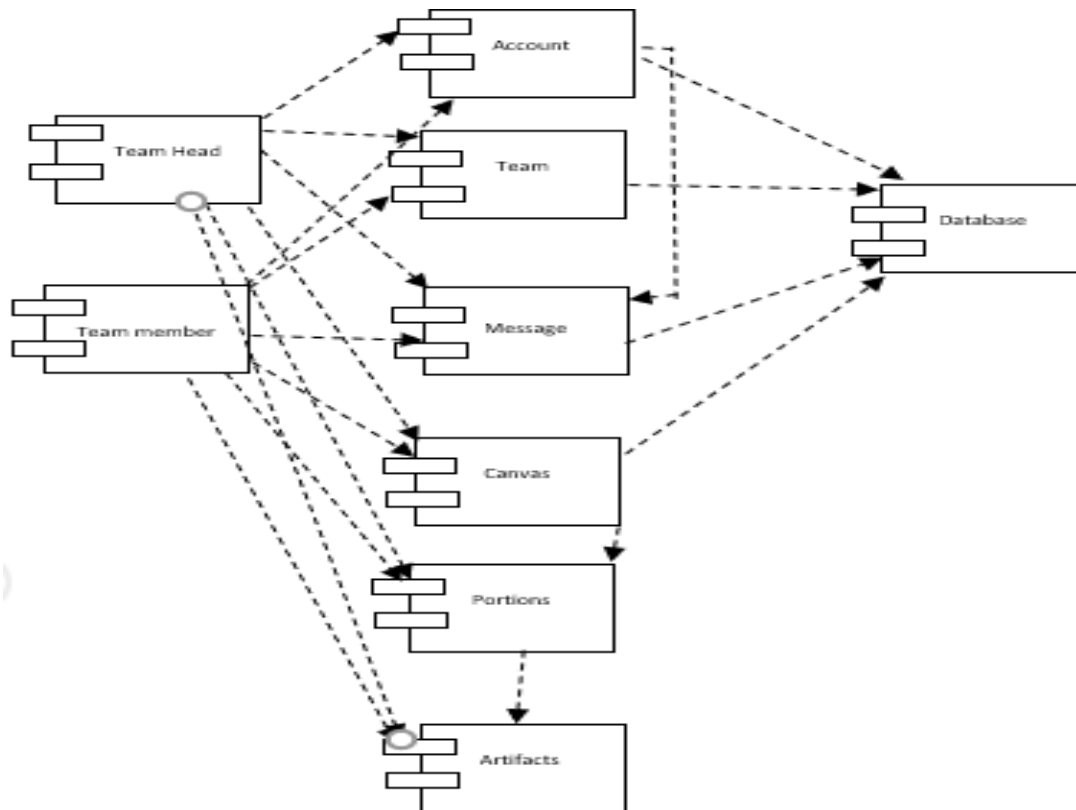


Figure 3.2 COMPONENT DIAGRAM

3.3.1 Team Head

Team head is responsible for creating team and assigning portions to the team member. A team head can not only create canvas but can also edit its size. He can add and modify team. He can also work on the assigned portion and view canvas. He is also able to send and receive messages to/from team members thus this component interacts with canvas, team, message and account.

3.3.2 Team Member

Team members can work on the portion assigned by team head. They can edit their assigned portions. They are also able to send and receive messages to/from team

head/members. Team members can view canvas. Thus, this component interacts with canvas, team, message and account.

3.3.3 Account

This component has all detail of accounts of every user that can be team head and team members.

3.3.4 Canvas

This component contains portions.

3.3.5 Portions

This component has artifacts.

3.3.6 Artifacts

This component contains artifacts to be added in design.

3.3.7 Team

This component contains team and canvas names.

3.3.8 Message

This component contains messages.

3.3.9 Database

All components interact with this component through which they access all the store information.

CHAPTER 4

SOFTWARE IMPLEMENTATION

4.1 INTRODUCTION:

This document describes the project implementation for developing this project.

4.1.1 Language Selection

The project implements in the following languages:

- **PHP 5**

Used for PHP is a general-purpose scripting language that is especially suited to Server-side web development.

- **MySQL 5.6.15**

Use for database

- **HTML/CSS**

Used for designing of web pages

- **JavaScript/JQuery**

Use for scripting and validation.

- **Ajax**

Use for updating canvas and loading portion.

4.1.2 Tools Selection

- Notepad++
- Wamp/Xampp Server
- Web Browser

4.1.3 Resources

- Minipaint toolkit: Toolkit for drawing and editing purposes. [2]

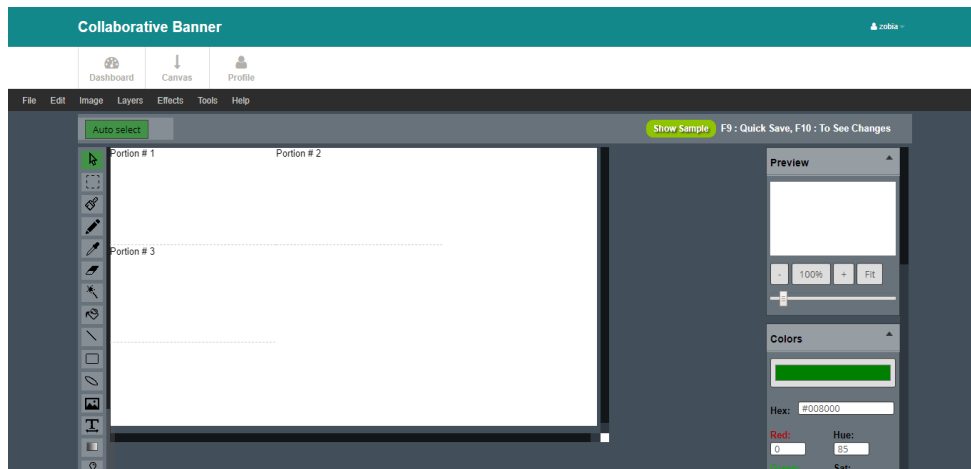
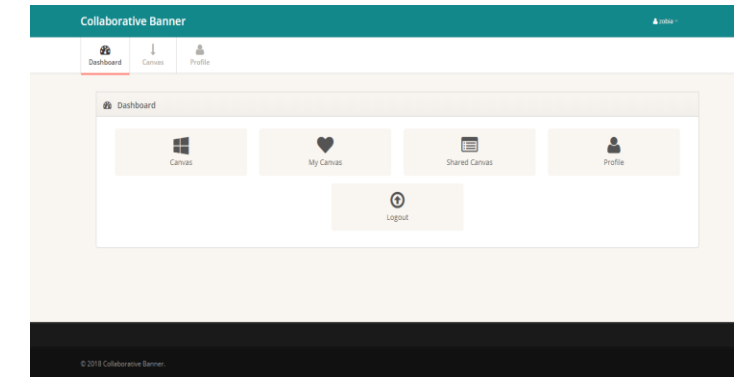
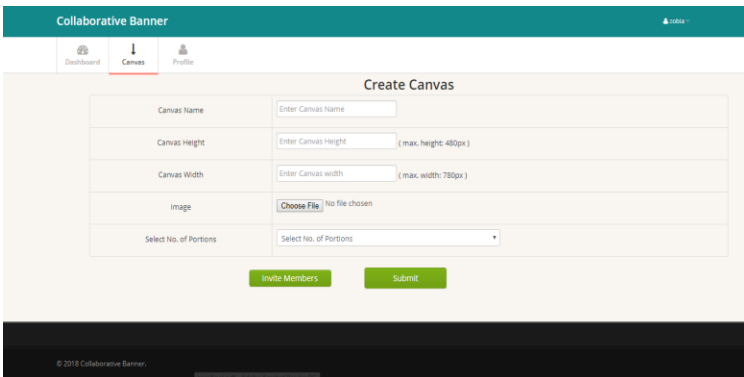
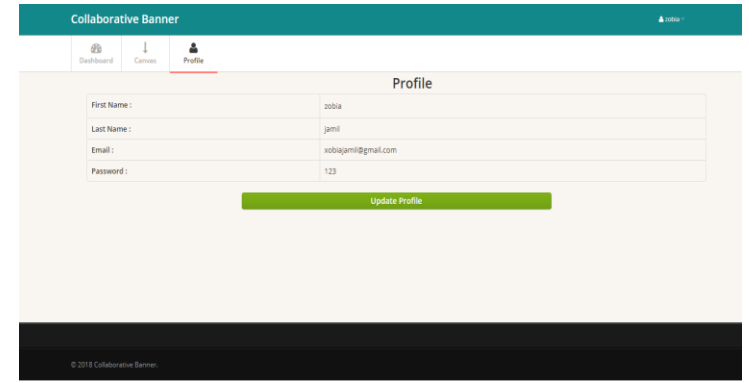
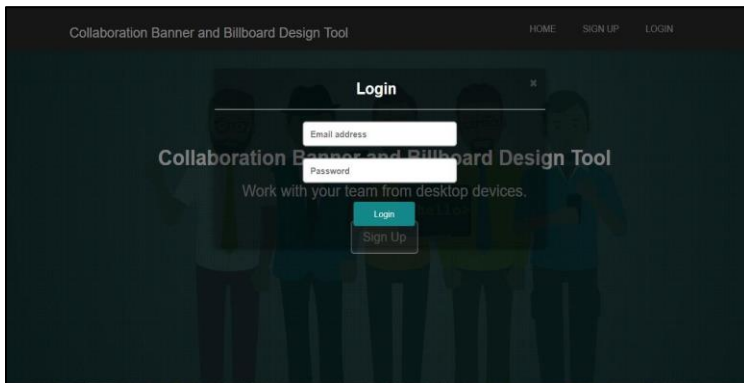
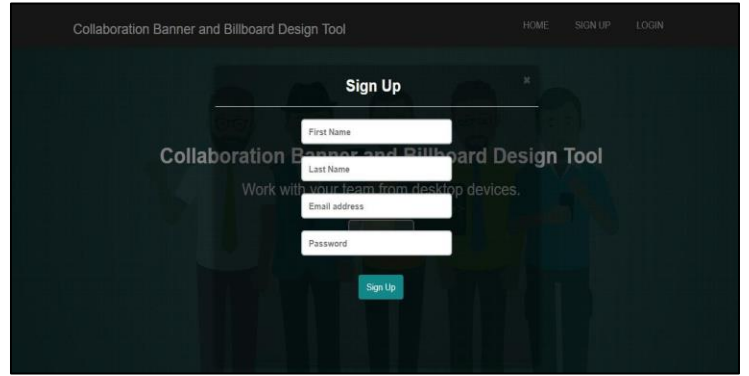
4.2 USER INTERFACE DESIGN

User Interface (UI) Design focuses on anticipating what users might need to do and ensuring that the interface has elements that are easy to access, understand, and use to facilitate those actions. [4]

4.2.1 DESCRIPTION OF USER INTERFACE

- **Simple and Appealing**
 - The interface is simple to use, a naïve user can also use it very easily and efficiently to get his required information.
 - Image Buttons will be used that makes website appealing.

4.2.2 SCREEN IMAGES



CHAPTER 5

SOFTWARE TEST DOCUMENTATION

5.1 INTRODUCTION

Software test document is a type of document under which 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. [3]

Collaborative Banner & Banner Designing tool is interactive web-based tool that allows multiple users to create interactively and collaboratively the banners/billboards for the advertisements.

5.1.1 TEST APPROACH

User acceptance testing (UAT) consist of a process of verifying that a solution works for the user. It is not system testing (ensuring software does no crash and meets documented requirements), but rather is there to ensure that the solution will work for the user.

5.2 TEST PLAN

A test plan is a document detailing the objectives, target market and processes for a specific test for a software or hardware product. The plan typically contains a detailed understanding of the eventual workflow. [4]

5.2.1 FEATURES TO BE TESTED

Features to be tested are as following:

1. Register account
2. Login
3. Logout
4. Update account
5. Delete account
6. View team
7. Create canvas
8. Invite Members
9. Add artifact
10. Edit artifact
11. Delete artifact
12. View canvas
13. Delete canvas
14. Edit canvas
15. Send message

16. Edit Shared Canvas

5.2.2 FEATURERS NOT TO BE TESTED

Features not to be tested are from the developer's point of view. For example

- How much power is used by processor.
- How much memory is consumed by the tool.
- Maintainability of tool.

5.2.3 TESTING TOOLS AND ENVIRONMENT

Following tools and environments are used for testing

- PC/Laptop
- Web browser e.g. Google Chrome, Mozilla Firefox
- Operating system

5.3 TEST CASES

Following are the test cases of Collaborative Banner & Billboard Design Tool:

5.3.1 TC-01 REGISTER ACCOUNT:

TC-01: Register account	
Actor	User (Team Head, Team Members)
Purpose	To register account
Steps	<ol style="list-style-type: none"> 1. User press the sign-up button 2. User inputs requires information. 3. User press register account option
Inputs	User enter correct information.
	User enter wrong information.
Expected result	Account created successfully.
	Account not created
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No. 5.1 TC FOR REGISTER ACCOUNT

5.3.2 TC-02Login:

Following describes test case of “Login” in detail: -

TC-02: Login	
Actor	User (Team Head, Team Members)
Purpose	To login
Steps	<ol style="list-style-type: none"> 1. Open login page 2. User enter requires information. 1. User press login button
Inputs	User enter correct information.
	User enter wrong information.
Expected result	User logged in successfully.
	User not logged in.
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.2 TC FOR LOGIN

5.3.3 TC-03 Logout:

Following describes test case of “Logout” in detail: -

TC-03: Logout	
Actor	User (Team Head, Team Members)
Purpose	Logout from account
Steps	<ol style="list-style-type: none"> 1. Open login page 2. Click on logout button
Inputs	User press logout button
	User click on logout
Expected result	Home page will appear
	Site should display the login page
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.3 TC FOR LOGOUT

5.3.4 TC- -04 UPDATE ACCOUNT

Following describes test case of “Update Account” in detail: -

TC-04: Update Account	
Actor	User (Team Head, Team Members)
Purpose	Update account
Steps	User login to account User fills requires information. User press the update account button User press update account option
Inputs	User press update button
	User click update logout
Expected result	Updated successfully.
	Account not updated.
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.4 TC FOR UPDATE ACCOUNT

5.3.5 TC -05 DELETE ACCOUNT

Following describes test case of “Delete Account” in detail: -

TC-05: Delete account	
Actor	User (Team Head, Team Member)
Purpose	To delete an account
Steps	1. User logins to account 2. User press delete account button 3. System prompts for confirmation
Inputs	User confirm the deletion operation.
	User not confirm the deletion operation.
Expected result	User deleted account successfully.
	Account not deleted.
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pas

Table No 5.5 TC FOR DELETE ACCOUNT

5.3.6 TC 06 VIEW TEAM

Following describes test case of “View Team” in detail: -

TC-05: Delete account	
Actor	User (Team Head, Team Member)
Purpose	To view team.
Steps	<ol style="list-style-type: none"> 1. User login to account 2. User press view team button 3. System display team details
Inputs	User press view team button
Expected result	User views team successfully.
	Account not deleted.
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pas

Table No 5.6 TC FOR VIEW TEAM

5.3.7 TC -07 CREATE CANVAS

Following describes test case of “Create Canvas” in detail: -

TC-7: CREATE CANVAS	
Actor	User (Team head)
Purpose	To create canvas
Steps	<ol style="list-style-type: none"> 1. User presses the Create Canvas button. 2. System shows Create Canvas model. 3. User inputs canvas details. 4. User presses “Create” button. 5. System displays “done” message.
Inputs	User enter the correct information.
	User enter wrong information.
Expected result	Canvas would be created
	Canvas not created
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.7 TC FOR CREATE CANVAS

5.3.8 TC -8 INVITE MEMBERS

Following describes test case of “Invite Members” in detail: -

TC-8: INVITE MEMBERS	
Actor	User (Team head)
Purpose	To invite members
Steps	<ol style="list-style-type: none"> 1. User selects number portion of canvas. 2. User adds user email. 3. System prompts portion assigned
Inputs	User enter the correct information.
	User enter wrong information.
Expected result	Portion would be assigned
	Portion not assigned
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.8 TC FOR ASSIGN PORTIONS

5.3.9 TC -9 ADD ARTIFACT

Following describes test case of “Add Artifact” in detail: -

TC-9: Add Artifact	
Actor	User (Team head, Team Members)
Purpose	To add artifact
Steps	<ol style="list-style-type: none"> 1. User selects the artefact from the bar. 2. The artefact appears on screen
Inputs	User enter the correct information.
	User enter wrong information.
Expected result	Artifact would be added
	Artifact not added
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.9 TC FOR ADD ARTIFACT

5.3.10 TC -10 EDIT ARTIFACT

Following describes test case of “Edit Artifact” in detail: -

TC-10: Edit Artifact	
Actor	User (Team head, Team Members)
Purpose	To edit artifact
Steps	<ol style="list-style-type: none"> 1. User select the artefact. 2. User can edit artefact
Inputs	User enter the correct information.
	User enter wrong information.
Expected result	Artifact would be edited
	Artifact not edited
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.10 TC FOR EDIT ARTIFACT

5.3.11 TC -11 DELETE ARTIFACT

Following describes test case of “Delete Artifact” in detail: -

TC-11: Delete Artifact	
Actor	User (Team head, Team Members)
Purpose	To delete artifact
Steps	<ol style="list-style-type: none"> 1. User presses artifact. 2. User selects delete from dropdown menu
Inputs	User confirms the deletion operation.
	User not confirms the deletion operation.
Expected result	Artifact would be deleted.
	Artifact not deleted.
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.11 TC FOR DELETE ARTIFACT

5.3.12 TC -12 VIEW CANVAS

Following describes test case of “View Canvas” in detail: -

TC-13: Delete Canvas	
Actor	User (Team head)
Purpose	To view canvas
Steps	<ol style="list-style-type: none"> 1. User login to account 2. User press view canvas button 3. System display canvas
Inputs	User press view canvas button
Expected result	Canvas details appears.
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.12 TC FOR VIEW CANVAS

5.3.13 TC -13 DELETE CANVAS

Following describes test case of “Delete Canvas” in detail: -

TC-13: Delete Canvas	
Actor	User (Team head)
Purpose	To delete canvas
Steps	<ol style="list-style-type: none"> 4. User presses the “delete canvas” button. 5. System prompts user for confirmation. 6. User confirms the operation. 7. System displays canvas deleted message
Inputs	User confirms the deletion operation.
	User not confirms the deletion operation.
Expected result	Canvas would be deleted.
	Canvas not deleted.
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.13 TC FOR DELETE CANVAS

5.3.14 TC -14 EDIT CANVAS

Following describes test case of “Edit Canvas” in detail: -

TC-14: Edit Canvas	
Actor	User (Team head)
Purpose	To edit canvas
Steps	<ol style="list-style-type: none"> 1. User selects the canvas. 2. User clicks on “Edit Canvas”. 3. System opens canvas in edit mode. 4. User can change canvas details and team portions. 5. System prompts canvas edited.
Inputs	User enter the correct information.
	User enter wrong information.
Expected result	Canvas would be edited
	Canvas not edited
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.14 TC FOR EDIT CANVAS

5.3.15 TC -15 SEND MESSAGE

Following describes test case of “Send Message” in detail: -

TC-15-: Send Message	
Actor	User(Team head, Team Member)
Purpose	To send message to team
Steps	<ol style="list-style-type: none"> 1. User login to account 2. User press the new message button 3. User fills the requires information 4. User press the send button
Inputs	User enter the correct information.
	User enter wrong information.
Expected result	Message would be send.
	Message would not be send.
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.15 TC FOR SEND MESSAGE

5.3.16 TC -16 EDIT SHARED CANVAS

Following describes test case of “Edit Shared Canvas” in detail: -

TC-16: Edit Shared Canvas	
Actor	User (Team member)
Purpose	To shared canvas
Steps	<ol style="list-style-type: none"> 1. User selects the shared canvas button. 2. System opens canvas in edit mode. 3. User can edit artifacts in portion.
Inputs	User enter the correct information.
	User enter wrong information.
Expected result	Canvas would be edited
	Canvas not edited
Actual result	As expected
	As expected
Pass/Fail	Pass
	Pass

Table No 5.16 TC FOR EDIT PORTION

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 CONCLUSION:

Collaborative Banner & Billboard Design Tool is web-based tool designed to let designers create, design and edit banners/billboards collaboratively and interactively.

Designer can divide canvas up to 5 portions vertically or horizontally and assign portions to different team members.

Designers can design using multiple paint tools, also can add images from the library and edit it using multiple professional tools.

The main motivation to create this tool was to design a platform for nonprofessional/ beginners that allows an easy to understand work environment.

Designer can add sample design (mockup), and can preview it any time for reference.

This tool will allow designers to work on portions of the banner assigned by team head, view work of other members, and can interact via messages thus providing a collaborative and interactive environment.

6.2 FUTURE ENHANCEMENTS:

- More customization of canvas and portion size will be provided.
- Invite requests via email/alert will be sent.
- Advanced editing tool will be incorporated.
- Team head will be able to delete members and assign their portion to the new member at the same time.
- Android/ios application of the tool can be developed.

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