Project Management Plan for an Online Banking System
PA2513-Advanced Software Project Management

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I. Introduction

In today's world, online banking becomes the preferred choice for many customers due to convenience. Online banking is nothing but more than the traditional banking services delivered by the internet using a computer, laptop, smart phone or tablet. It is also known as internet banking, web banking, virtual banking and e-banking. It is one of the most popular methods of banking used by many people in this modern society. As this form of banking allows the users to manage the bank account and execute financial transactions over the internet instead of visiting a bank branch or using the telephone reducing the time and cost [1].

The main feature of online banking services is 24/7 access for customers to their bank accounts, which is independent of bank opening hours with convenient and rapid swap of data between bank and their customers. It provides the opportunity to perform foreign and domestic payments, unconcerned from any place in the world i.e., the client can perform transaction either from home or when on vacation or on business [2].

Online banking has also given raise to new generation which is Internet-only Banks that has no physical branches; the only way one can transact with them is via online banking. They are lower in cost which means they can offer better deals on deposits. Even though it can provide better deals they are not suitable for everyone as it involves some drawback, like choosing the right Internet-only bank that best meets your needs.

Online transactions help us in payments such as e-tickets, online shopping, online booking etc. Online banking is used for payments on this type of web-based platforms [3]. Type of transactions involved in online banking:
- Funds transfer between same bank accounts.
- Funds transfer between two different bank accounts (domestic or international).
- Gigantic payments.
- Credit/Debit card payments.

Per day there is a standard limited amount for every customer, which is concerned due to risky transactions. If the limit exceeds then one time password is needed in order to complete the transaction.

There are several advantages presented by online banking over banking at branches. They are summarized as follows:
- Electronically update accounts information.
- Eliminate the risks correlated with stolen, lost, misdirected cheques.
- Less paper works.
- Efficient cash flow.
- Eliminate overdue accounts.

Scope and objectives:
Online banking is fast, easy and convenient but there is something that needs to be aware of such as security issues. The online transactions are in huge risk because of many problems due to hackers, malicious applications, attackers and intruders etc., [1]. Hence, the scope in this project is to concentrate

in adding the new features for online banking services in-order to improve the security issues. Such that, the clients can feel more convenient while using the updated services during transactions. The required improvements for additional features are captured and identified by reviewing the current system features from the usage of stakeholders.

The main objectives of the project plan are:
- To improve the current system for delivering a better version with few more additional features, using scrum methodology.
- To ensure secured transactions during online payments for the internet users.
- To minimize security attacks, by ensuring confidentiality during authentication procedure.
- In order to improve the security and efficiency of transactions over internet, extracted the features and their corresponding priorities from the stakeholders.
- Effort estimation for all the features to be done using planning poker method.
- To implement the features, task distribution is done between the two sprints depending upon the obtained effort estimation.
- To prepare a project management plan along with a Gantt chart for delivering the extracted features among two sprints.
- A quality criterion is identified in order to determine the software produced.
- Identifying the risks involved in project along with their impact which are addressed using mitigation strategy.

Few assumptions are made regarding team members and features of online system, which are mentioned in the following table.

Assumption ID	Description
A1	Selection of group members for the project
A2	Discussion among group member about the topic, features and method (scrum methodology)
A3	All the group members are well experienced about the topic.
A4	All the group members have an idea about the scrum methodology and planning poker technique.
A5	A well understanding and co-ordination is maintained among the group members.
A6	Time taken to fix the bug/error for each user story is not considered in effort estimation.
A7	All the tasks were expected to be completed within estimated time.
A8	In case of any temporary non-availability of team member due to emergency factors, the effort of the non-available team member would be shared among the rest of the team members with their consent.
A9	All team members scheduled the work as 5 days a week which consistently contains 8 working hours.
A10	Identity of a person (customer) should remain constant both before and after the transaction.
A11	Information received by the recipient should be same as the information send by the sender.
A12	Unauthorized access over data is prohibited.

Table 1: Assumptions and their descriptions

II. Stakeholders

People or organisations who will be affected by the system and who have a direct or indirect influence on the system requirements are known as stake holders. A stakeholder in an organisation is any group or individual who can affect or is affected by the organizations objectives. We prioritize the requirements based on the stakeholders [4]. So identifying stake holders is very important for the success of the product. The stake holders who are more needful and influential for the given project are mentioned below:

Stake holders	Description of needs	Positive influences	Negative influences
customers	• The primary stake holders of the system i.e., customers of the bank. • For customers, system must be secured and fast with simple user interface.	• Helps in understanding the user requirements in the initial phases of developing	• Irrespective of all other factors users have a higher expectation.
Bank officers	• They are secondary users. • Bank officers have additional features than primary users for some exclusive operations. • Help customers to understand the system.	• Bank officers having good technical skills and learning skills help in better understanding the system.	• Difficulty in using and understanding the new system influences negatively.
Project team	• Team consists of analysts, developers, testers, maintainers, trainers. • They have specified deadlines to complete their tasks.	• Team with good technical, innovative and communicational skills. • If the team is committed to the scrum plan and complete work within the given deadline.	• Technical or non-technical problems may delay the process.
Project manager	• Leads, plans, decide and manage a project. • Most important stake holder.	• Organized project manager with positive attitude and self-confidence can succeed by understanding the needs of the team.	• Not considering inputs from the team members may lead to project failure. • Poor problem solving ability leads to project failure.
Scrum master	• Role of coach and facilitator. • He doesn't mange but he is responsible for the correctness and continuation of the scrum process.	• Responsible scrum master with vast knowledge in different aspects of the fields related to the product helps a lot.	• Scrum master with poor influence. • Scrum master who is not collaborative with team.
CEO	• Key stake holder. • Responsible for the entire product. • He has the key role in controlling the project.	• Continuously getting customer feedback. • Supporting solid design and construction. • Giving the team space for innovation and creativity.	• Behaving aggressively with project team. • User requirements not explained properly to team may lead problems.

Table 2: Description of stakeholders needs along with their influences.

III. Features/requirements:

The group defines the product backlog, which is an ordered list of features and the requirements. "For the product backlog and the user stories prioritization the product owner is a sole responsibility"[5]. User stories are the description about the features or requirements of the product as described by the clients. The product owner describes about the different features to be included in a product and specify it to the scrum team. Here the features or user stories are interpreted in the priority order. The following table describes the features and the user stories and the motivation behind them:

Features	User Stories	Motivation
Feature 1: **secure transaction system**	The users perform transaction while purchasing through e-commerce or doing any online transactions, the security has to be provided for the users. So that loss may not occur as intrusion and sniffing are increasing day by day.	AES (Advanced Encryption Standard) is chosen for providing the security for the users. In symmetric encryption algorithm, AES is preferred than DES and 3DES, because DES and 3DES are antiquated and meanwhile AES is fast and provides more security. It encrypts 128 bit block size with 128/192/256 bit key for 10/12/14 rounds [6].
Feature 2: **Multi authentication (TAN, face recognition, picture recognition)**	Transaction Authentication Number (TAN) is a two way authentication used by online banking systems while authorizing transactions. Example for the TAN is one time password. The user gets the OTP (one time password) through security token while doing transaction. Face recognition and picture recognition are used to login while transacting the money without using the profile password. By using this, the system is protected from the intrusion attacks.	Twofish symmetric encryption algorithm is used for providing security by avoiding the phising and middle attacks. Twofish encryption is preferred than DES or RSA (asymmetric encryption) because it becomes faster than other encryption algorithm with increasing RAM [6]. Blowfish symmetric encryption is used for the face and picture recognition. The key length varies from 32 to 448 bits where the brute force attacks are impossible.
Feature 3: **User system interface**	In online banking, system interface plays a crucial role for the users. An easy option in online banking. Users can use without having the total knowledge of it.	Providing a good system user interface is by knowing the user requirements and priorities. A simple interface. Using typography to create hierarchy and clarity. Using templates according to the purpose. Good default settings (so we can reduce the burden of the people). And good page layout.
Feature 4: **Anti screenshot virtual keyboard**	Anti-screenshot virtual keyboard is proposed, which can protect the bank accounts and passwords from stealing due to the screen capture of Trojan horses [7]. The virtual keyboard gives better performance for banking security.	This design is for the protection of the data shown on the screen when moving and clicking the mouse, reordering the keys of virtual keyboard and higher utilization efficiency of it [7]. The anti-screenshot virtual keyboard is suggested than the traditional keyboard because when using the traditional keyboard the Trojan viruses can easily capture bank account details and the user passwords.
Feature 5: **Alerts and notifications provider**	Alerts and notifications are sent from the bank systems to the users so that user can know about their monthly transactions (mini statements) and alerts when the	The main motivation behind this user story is to favor the user from the banking systems by providing the notifications of the user bank account. It will also be useful to the

	intruder tries to hack the user account.	users that the user can get the good scope of his account details.

Table 3: Features selected for the system.

Effort Estimation:
The product owner discusses with the scrum master about the product backlog and makes decision which user stories have given more priority. Sprint backlog have the user stories and the scrum team breaks down the user stories and turn them into tasks [5].

User story	Complexity	Customer value	Planning hours
User story 1	Medium	Hard	237
User story 2	Hard	Hard	289
User story 3	Low	Low	210
User story 4	Medium	Medium	353
User story 5	Low	Low	319

Table 4: Effort Estimate using Planning Poker.

Sprint planning:
Each sprint starts with the sprint planning meeting. In the meeting, the product owner, scrum master and the scrum team assembles to discuss about the product backlogs and decide to give prioritization to user stories. The effort estimation is done using the planning poker which is a most used estimation technique in scrum methodology. It is a team-based exercise that is commonly used for assigning relative estimate values to user stories/requirements to express the effort required to deliver specific features or functionality [5]. Effort estimation by planning poker is done by using the complexity and the customer value. We have selected high, medium, and low as the attributes to represent the complexity and customer value. The scrum team has 2 members, a developer and a tester. The final estimation id done by elaborating the product backlog and discussing about the user stories and the re-estimate until estimate converges [5]. Planning hours in the above table is meant for total number of hours the team members should work for completing the user tasks (A9).

By the effort estimation of user stories 1, 3 and 5 are considered to do in the sprint 1 and rest of the user stories are in sprint 2.

Sprint 1: The features user stories 1, 3, and 5 are implemented in the sprint 1. In the sprint 1, the user story 1 is chosen to develop first because of its having more complexity and customer value when compared to remaining other user stories (3 and 5). Later user story 3 and 5 are implemented. The development of the user story 1 is done on providing the security while data transmission and the other user stories are for the benefits to the user who uses banking system. The activities done to the user stories are described in the Gantt chart. An activities branching is done in WBS (work breakdown sheet) which was shown in figure 1. The scrum team works for 4 weeks in sprint 1 which has 23 total working days and excluding the 8 weekend days. To implement feature 1, the team has to work more when compared to other features so that team has to spend more hours to complete the requirements i.e. 237 hours from 23 days is allotted for sprint 1 feature 1. Other features have less complexity and customer value, so planning hours for the team is allotted as per their complexity. Each sprint starts with the team meeting.

Daily scrum meetings: This meeting, typically lasting no more than 15 minutes, is held every day between the scrum master and the scrum team [8]. Every member goes through what they have done in the last scrum and what needs to be done before the next scrum meeting and are there any obstacles with the work.

Sprint review meetings: At the end of each sprint, this review meeting is held. In this sprint review meetings, the product owner, scrum team will be participated. During the meeting, the functionality that was created during the sprint is demonstrated to the product owner [8]. The team explains their work to the product owner on the product backlog and the sprint backlog. The product owner goes through the sprint backlog and either accepts or rejects the work [5].

Sprint retrospective meeting: In sprint retrospective meeting, the team discusses with the scrum master. They make changes to the tasks if something is wrong or need to be change. They will look forward to improve the product in the next sprint. They will look over what went well and what did not. The product owner will also participate in this meeting and will hear about the good and bad aspects of the sprint. This process allows the entire team to focus on its overall performance and identify strategies for improvement.

Sprint 2: In the sprint 2, the rest of the user stories i.e. user story 2 and user story 4 are implemented. The user story 2 has high complexity and it has to deal with more encryption algorithms so team has to work more hours on it and it is stated in the effort estimation table. The user story 4 also plays a crucial role for protecting the accounts from the various viruses. The resources allocated to the user stories 2 and 4 of the sprint 2 are illustrated in the Gantt chart. This is also a 4-week sprint exercise in which team works for 22 days and 8 will be weekends and not considered. Scrum team works on implementing the product backlog which is done in three meetings.

Sprint 2 review and retrospective meetings: The daily meetings are held for less time and the team discusses about the tasks and thinks what they have done and what to do and later they disperse and complete their works. In the sprint review meetings, as discussed in the sprint 1 they will explain to the product owner about how they did their tasks and makes changes as per the product owner. Later, sprint retrospective meeting held in which the scrum master discuses with the team and tries to improve the product.

After the both sprints review meeting and retrospective meeting, features are enhanced in the favor of product owner. The product will be finalized after this; the final product will be released.

IV. List of activities:

In the following table, the activities of the features and description of the features are listed. The activities are divided and brief description is given in the WBS (work breakdown sheet). The activities and time taken for completion of the features are given description in the Gantt chart. Information about resource allocation is also given in the table. In resource allocation there are some attributes which consists of product owner, scrum master and team (developers and testers) and project management tools.

Activities	Description
I. Initial planning a. Project scope and objectives	To provide latest and better online banking features to the users and good system user interface.
II. Product backlog a. Features prioritization	The features are prioritized based on the complexity of their requirements.
III. SPRINT PLANNING	In this effort estimated using planning poker, complexity and user value is taken as attributes
IV. Sprint1	

1. Feature 1:
  1.1. AES encryption algorithm for secure payment
    1.1.1. Designing the AES algorithm to provide more security.
    1.1.2. Enhancing the cipher of AES algorithm.
    1.1.3. Testing.
	For the design of AES rijndael is used. It can be implemented easily on a wide range of platforms without reducing bandwidth in a significant way [9].

2. Feature 3:
  2.1. User System Interface
    2.1.1. Designing the System Interface.
    2.1.2. Developing the System Interface.
    2.1.3. Testing.
	The user should be provided with the good interface, and Graphical User Interface should be developed. The usability testing is done by gathering the design information from the user standard view.

3. Feature 5:
   3.1. Alerts and notification providing to the bank users.
      3.1.1. Designing
      3.1.2. Developing
      3.1.3. Testing
	Here the designing and development of this feature is needed to provide more information on the specific user accounts to the bank users.

V. Sprint 1 review meeting	In review meeting, the product owner decides the features which are necessary for the production.
VI. Sprint 1 retrospective meeting	In retrospective meeting, the team decides to make improvements to the product as per the requirements of product owner.
VII. Sprint 2	

4. Feature 2:
   4.1. Twofish symmetric encryption algorithm for securing authentication numbers.
      4.1.1. Designing the encryption algorithm.
      4.1.2. Improving the algorithm to prevent man in the middle attacks.
      4.1.3. Testing.
	Here Transaction Authentication Number (TAN) which is a two-way authentication is chosen for providing a secure one time passwords (OTP) through a security token box.

4.2. Blowfish symmetric encryption algorithm for securing the profile passwords.
      4.2.1. Designing the code for the Blowfish algorithm.
      4.2.2. Developing the algorithm preventing intrusion.
      4.2.3. Testing.
	Face recognition and picture recognition comes under multi authentication which secures the profile passwords of the user accounts from intrusion.

5. Feature 4:
   5.1. Anti-screenshot virtual keyboard
      5.1.1. Designing the virtual keyboard rather than traditional keyboard.
      5.1.2. Developing and improving the java code for virtual keyboard.
      5.1.3. Testing.
	By using the traditional keyboard, there are many chances of attacks from the Trojan horses by capturing the details of the user accounts while entering the username and password. So development of virtual keyboard is needed

VIII. Sprint 2 review meeting	In review meeting, the features of sprint 2 which are to be implemented is selected.
IX. Sprint 2 retrospective meeting	In review, the team concludes the changes of sprint 2 features
X. Enhancing the features of sprint 1 and sprint 2	The changes after the retrospective meeting are improved and finalized.

XI. Integration
  a. Perform integrated change control.
 	
  b. Delivering the deliverables.
	Making changes to the deliverables and approval of the final product
	Deliver the product to the clients.

Table 5: List of activities and their description.

Resource Allocation:

RESOURCES ALLOCATION	
1. Human Resources	Rich project team including developers, designers, testers, scrum master, product owner.
2. Tools for development	a. AEScrypt for Advanced Encryption Standard algorithms b. Cryptix is for extensions in java in which Blowfish and Twofish encryptions are included.
3. Tools for designing	Moqups and Livepipe UI is used for designing User System Interface.
4. Storage Provider	Oracle database provides PL/SQL packages that support AES symmetric encryption.
5. Communication Tools	Communication is done using Mails (Gmail and Outlook) and Messages (Whatsapp and Viber).

Table 6: Resource allocation

V. Gantt chart:

Gantt chart for the entire project which shows the execution of the project is presented in appendix (figure 2).

VI. Risk plan:

The impact and probability of the risks are determined by using an ordinal scale as mentioned below. Also key stakeholders of our project were included in order to determine the impact of risks that were identified.

High- Greater than 50% chance of happening.
Significant: 30-50% chance of happening.
Moderate: 10-29% chance of happening.
Low: Less than 10% chance of happening.

Few Boehm's top 10 development risks from [10] were used to identify the risks and their mitigation strategies pertaining to our project. The following are those:

Risk	Impact	Probability	Mitigation Strategy
Misconceptions in understanding the requirements	Significant	Moderate	Involving key stakeholders when determining the product backlog and sprint backlog.
Risk of choosing unrealistic requirements	Significant	Moderate	Involving the key stakeholders and key technical team when building the product backlog could mitigate this risk.
Risk of miscalculations in terms of time and effort	Significant	Moderate	Adopting multiple techniques for effort and cost estimation could mitigate this risk.
Risk of temporary non-availability of team members	Low	Low	In case of any temporary non-availability of team member due to emergency factors, the effort of the non-available team member would be shared among the rest of the team members with their consent. This is according to the assumption (A8).
Lack of technical knowledge among the team members	Moderate	Moderate	A Strength-Weakness-Opportunity-Threat (SWOT) analysis was carried out before actual start of the project. Only according to the capabilities of the team members the tasks were assigned to them individually and also the project

			scope was also determined in the same way. Also, having pair-programming technique helped in enhancing the technical knowledge of the team members.
Lack of proper communication	Moderate	Moderate	Lack of proper communication between the team members could be handled though different team building activities such as having after work parties any other conflicts would be taken care by the scrum master [11]. Whereas, having mutual relationship among the product owner and customer could avoid any lack or improper communication among themselves.
Lack of knowledge on development methodology	Significant	Significant	This risk could be mitigated by providing proper knowledge over the development methodology in this case "Scrum". This could be done prior to the commencement of the project and any other clarifications could be given by the scrum master as the project progresses (A4).
Risk of staff turnover	Low	Low	According to our assumption (A8) no personal related to the project are going to leave the project completely.
Risk of having change in requirements at the final stages of project	Significant	Moderate	As we have adopted Scrum development methodology which is an incremental development technique. This can handle such kind risks pertaining to change in requirements.
Lack of proper resources or tools	Significant	Moderate	Adopting various resource planning techniques like resource smoothing.
Performance issues when subjecting the product to stress situations in real time	Significant	Moderate	Subjecting the final product to stress testing and validating its performance when subjected to various environments.

Table 7: identified risks and their mitigation strategies

VII. Quality criteria:

By unceasing improvements during the process and design of iterations, the chosen quality for the designed features can be upgraded. In order to satisfy the customer needs for the selected user stories, scrum master frequently checks and improves the needs of the quality. Also, concentrates on the standards of the features to meet the level of satisfaction. Moreover, identified the suitable criteria in-order to assess the quality for all the designed features and the aspects that we had taken care of to improve the quality of the product were shown below.

Correctness: To achieve this, the designed features should bring the fulfillment for the requirements that were preset in the earlier phases. Also, should achieve the accurate and same result at the final stage of the project.

Confidentiality: This aspect is crucial for this project, as this project mainly deals with the banking system protecting personal information are very important. While transferring is done between the clients, that particular transfer information should be among those two clients who performed the transfer.

Integrity: In the banking systems, storing the information in the databases is necessary. It refers to have the consistency and precision for the client's data which is being stored in the database. Moreover, it is the essential component for maintaining the security of the client's information.

Non- repudiation: This criterion is to give the assurance to the clients by way of providing authentication through the digital signature. The designed program should protect the clients with the security issues.

Accountability: This program is important for making the client to complete the task successfully. Hence, simply being answerable for the taken actions, making decisions and completing the tasks.

Authenticity: Authenticity is for being real. For banking systems, security is much needed. This program must take care of the data without being misused by the unauthorized users by providing trust for the clients.

Availability: The developed product must provide the services to the clients at any time that means should be available at any time and date without complaints.

Usability: The designed product should be operated easily by the novice users also. Such that it should be designed in a way that can be understandable by everyone and also by providing the help button which guides the client's in easily figuring out the functionalities of the product more effectively.

VIII. References

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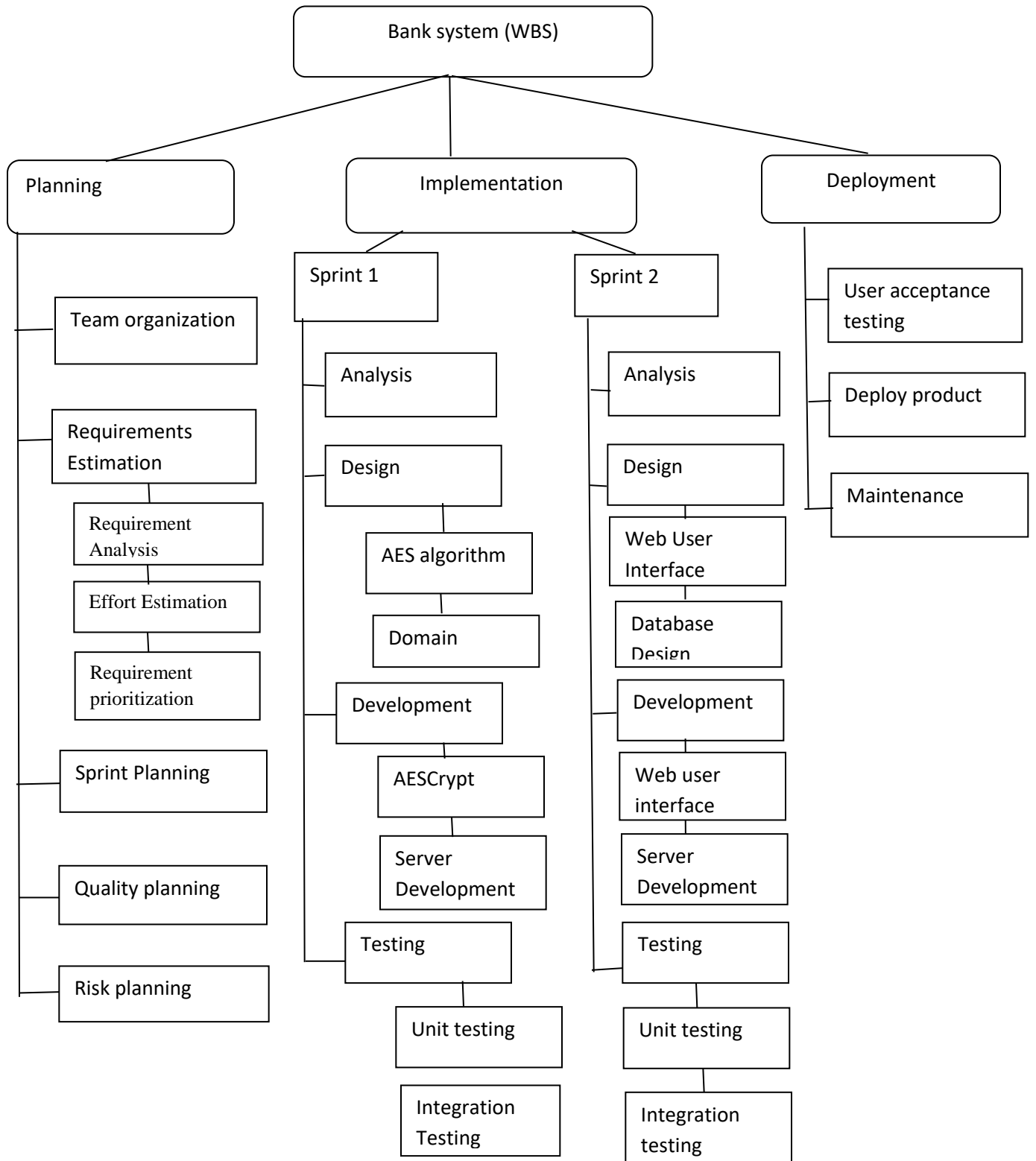
APPENDIX:

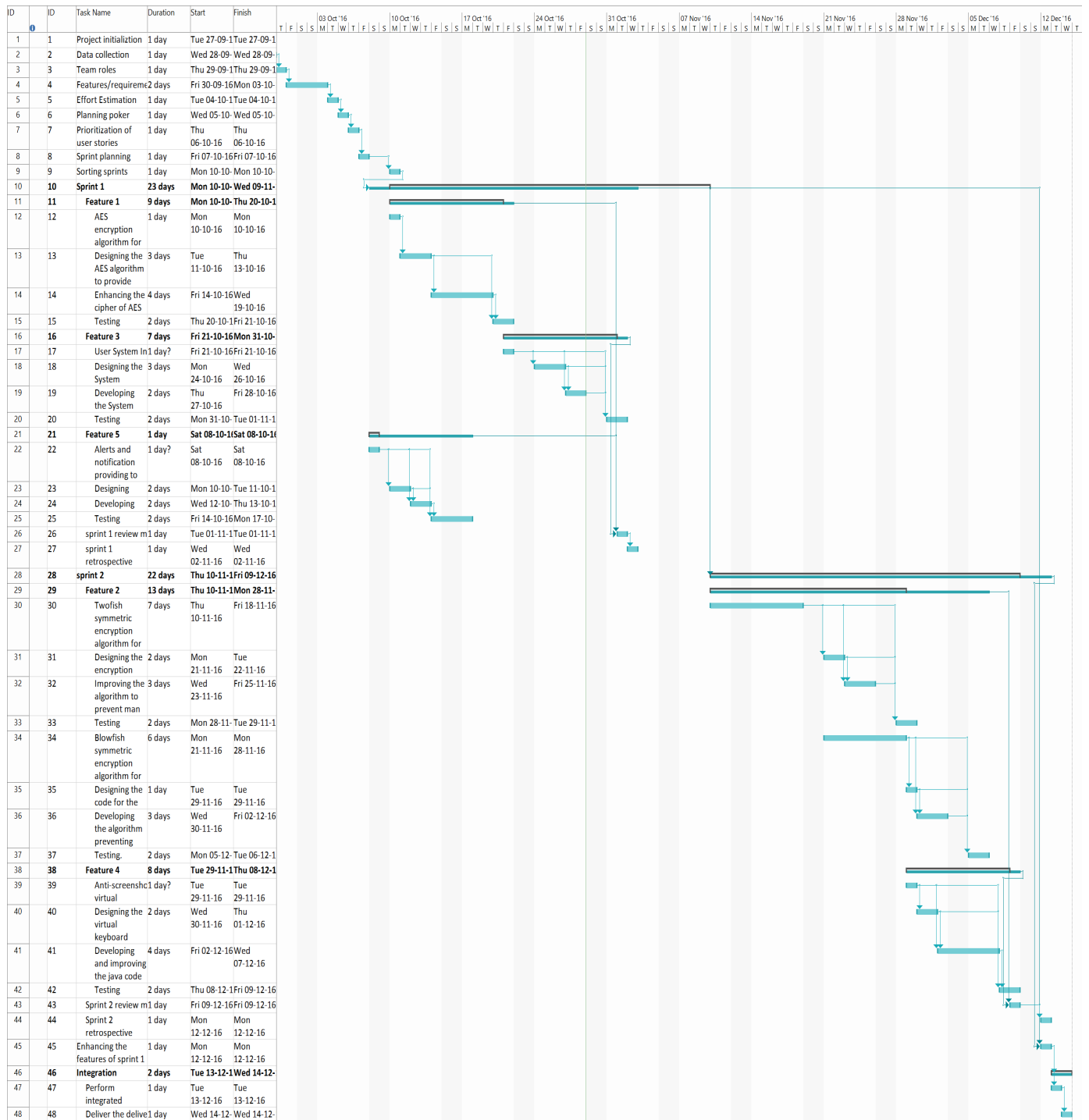*Figure 1: Work Breakdown Structure (WBS) for bank system*

ID	ID	Task Name	Duration	Start	Finish
1	1	Project initializtion	1 day	Tue 27-09-1	Tue 27-09-1
2	2	Data collection	1 day	Wed 28-09-	Wed 28-09-
3	3	Team roles	1 day	Thu 29-09-1	Thu 29-09-1
4	4	Features/requireme	2 days	Fri 30-09-16	Mon 03-10-
5	5	Effort Estimation	1 day	Tue 04-10-1	Tue 04-10-1
6	6	Planning poker	1 day	Wed 05-10-	Wed 05-10-
7	7	Prioritization of user stories	1 day	Thu 06-10-16	Thu 06-10-16
8	8	Sprint planning	1 day	Fri 07-10-16	Fri 07-10-16
9	9	Sorting sprints	1 day	Mon 10-10-	Mon 10-10-
10	10	Sprint 1	23 days	Mon 10-10-	Wed 09-11-
11	11	Feature 1	9 days	Mon 10-10-	Thu 20-10-1
12	12	AES encryption algorithm for	1 day	Mon 10-10-16	Mon 10-10-16
13	13	Designing the AES algorithm to provide	3 days	Tue 11-10-16	Thu 13-10-16
14	14	Enhancing the cipher of AES	4 days	Fri 14-10-16	Wed 19-10-16
15	15	Testing	2 days	Thu 20-10-1	Fri 21-10-16
16	16	Feature 3	7 days	Fri 21-10-16	Mon 31-10-
17	17	User System In	1 day?	Fri 21-10-16	Fri 21-10-16
18	18	Designing the System	3 days	Mon 24-10-16	Wed 26-10-16
19	19	Developing the System	2 days	Thu 27-10-16	Fri 28-10-16
20	20	Testing	2 days	Mon 31-10-	Tue 01-11-1
21	21	Feature 5	1 day	Sat 08-10-1	Sat 08-10-16
22	22	Alerts and notification providing to	1 day?	Sat 08-10-16	Sat 08-10-16
23	23	Designing	2 days	Mon 10-10-	Tue 11-10-1
24	24	Developing	2 days	Wed 12-10-	Thu 13-10-1
25	25	Testing	2 days	Fri 14-10-16	Mon 17-10-
26	26	sprint 1 review m	1 day	Tue 01-11-1	Tue 01-11-1
27	27	sprint 1 retrospective	1 day	Wed 02-11-16	Wed 02-11-16
28	28	sprint 2	22 days	Thu 10-11-1	Fri 09-12-16
29	29	Feature 2	13 days	Thu 10-11-1	Mon 28-11-
30	30	Twofish symmetric encryption algorithm for	7 days	Thu 10-11-16	Fri 18-11-16
31	31	Designing the encryption	2 days	Mon 21-11-16	Tue 22-11-16
32	32	Improving the algorithm to prevent man	3 days	Wed 23-11-16	Fri 25-11-16
33	33	Testing	2 days	Mon 28-11-	Tue 29-11-1
34	34	Blowfish symmetric encryption algorithm for	6 days	Mon 21-11-16	Mon 28-11-16
35	35	Designing the code for the	1 day	Tue 29-11-16	Tue 29-11-16
36	36	Developing the algorithm preventing	3 days	Wed 30-11-16	Fri 02-12-16
37	37	Testing.	2 days	Mon 05-12-	Tue 06-12-1
38	38	Feature 4	8 days	Tue 29-11-1	Thu 08-12-1
39	39	Anti-screenshc virtual	1 day?	Tue 29-11-16	Tue 29-11-16
40	40	Designing the virtual keyboard	2 days	Wed 30-11-16	Thu 01-12-16
41	41	Developing and improving the java code	4 days	Fri 02-12-16	Wed 07-12-16
42	42	Testing	2 days	Thu 08-12-1	Fri 09-12-16
43	43	Sprint 2 review m	1 day	Fri 09-12-16	Fri 09-12-16
44	44	Sprint 2 retrospective	1 day	Mon 12-12-16	Mon 12-12-16
45	45	Enhancing the features of sprint 1	1 day	Mon 12-12-16	Mon 12-12-16
46	46	Integration	2 days	Tue 13-12-1	Wed 14-12-
47	47	Perform integrated	1 day	Tue 13-12-16	Tue 13-12-16
48	48	Deliver the delive	1 day	Wed 14-12-	Wed 14-12-

Figure 2: Gantt chart