SOEN 6011- Software Engineering Processes
(Summer 2016)
Project Team: SmartTech

Project Plan
On
"Tic-Tac-Toe"

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Group 10

Submitted to:
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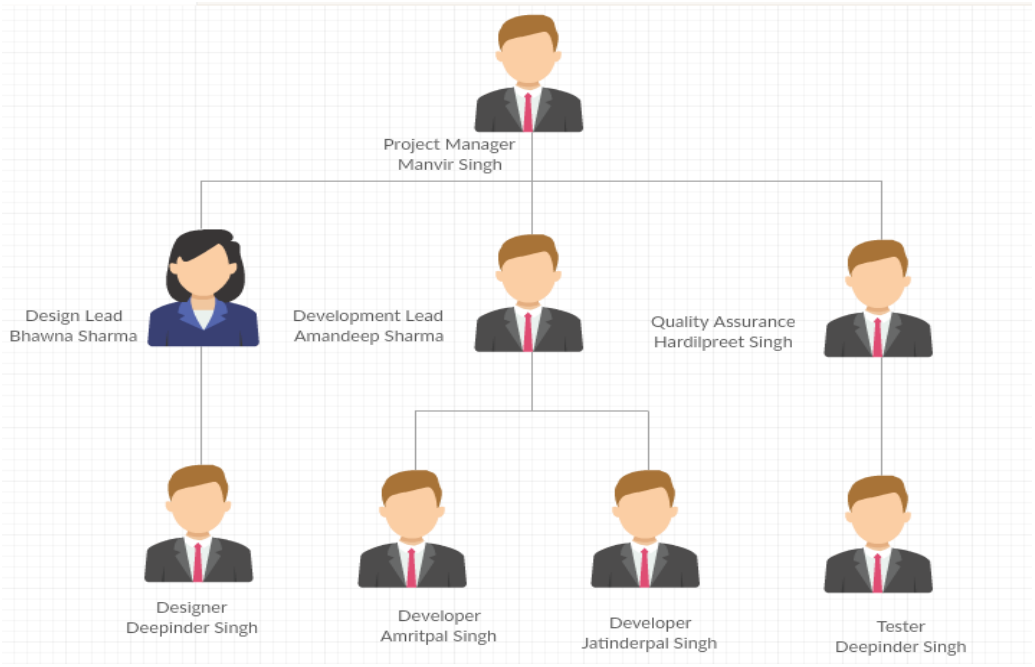
1. Introduction

This document gives an overall view of the project description, activities and various milestones and the approach used to achieve the resulting products. As it is the very first document of the project, it contains the project charter, project plan and project organization which details how the team structure is organized with properly defined roles and responsibilities to the people. Also, it covers the breakdown of activities, tasks and schedules using well known technique of WBS and Gantt chart. To give a clear view of the project, the main motive of the project is to develop an interactive tic-tac-toe game on desktop platform which is capable to display the 3*3 board and able to draw an "X" or an "O" on user request (on user's click). Furthermore, due to proliferation in demand for android devices, this java application is compatible to work on devices under Android Environment for two players which will eventually be the second product of the project. In addition to that, the final product will be produced by adding the feature of a computer heuristic wherein the user will be able play against the computer. The approach used to develop this project is based on the SMART criteria which means achieving the desired product with adherence to well defined specification within stated time period with a measurable progress.

2. Project Organization Chart

To meet the aims and objectives of organization, a good organizational structure plays a vital role. All organizations have employees who has different roles and working at different levels of responsibility. In our project, three different sub leaders i.e. design head, program head, and quality assurance reports to the main leader of the project team. Further different employees are working under all these three sub leader like developer, tester, and designer. As per need the sub leader can communicate with each other in order to get objectives.



3. Project Charter

Project title: Tic-Tac-Toe	Start date: 4th May, 2016 Finish Date: 6th June, 2016

Project Scope:

The scope of the project is to develop an application that is user friendly and that focus on user's interest and all responsibilities are relevant to task and assigned in such a way that each milestones can be achieved in a given time interval and attain final goal.

Objectives:

- To develop desktop and Android mobile application
- To ensure on-time completion of deliverables
- To accomplish the goals of a project while respecting the constraints.
- To be able to play alone against computer

Project Constraints:

- Time Constraint: 6 weeks
- Language Constraint: Java
- Platform Constraint: Window and Android
- User Constraint: Maximum 2 users or Minimum one user

Project Assumptions:

- A-01. Software needs to be compatible with the platform used
- A-02. Software requires Java to be installed as we are using Java Programming Language.
- A-03. User is familiar with android and window operating system
- A-04. User should know how to play Tic-Tac-Toe.

4. Hardware and Software Requirements

Software Requirements:

- Android Studio1.4 or higher
- Eclipse 4.5.2
- JDK 8
- Microsoft Visio

- Microsoft Project 2010
- JUnit 4.11
- GitHub Desktop Client
- Microsoft Office
- Microsoft windows, Linux, Mac
- Android OS 4.1 or higher

Hardware requirements

- RAM-512 MB or higher
- Android Device
- HDD space- Minimum 2gb free
- Cpu-2.0 GHz or higher

5. Project Plan

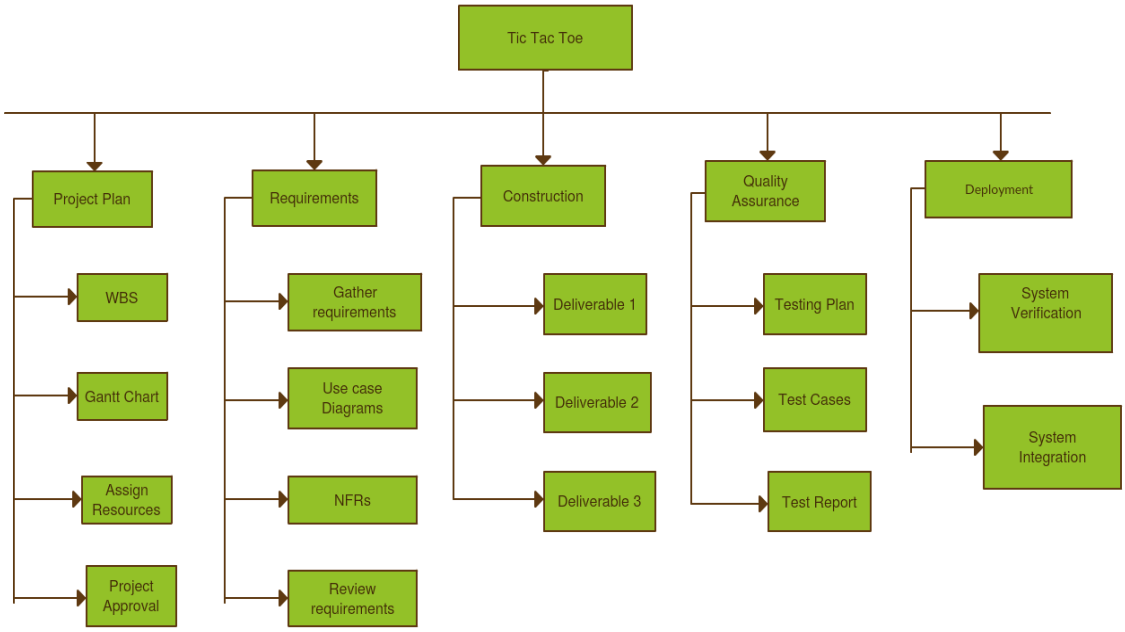
In Project Plan, planning of the activities and tasks needed to accomplish the end goal is focused on. There could be several activities and tasks that needs to be planned accordingly which is done using WBS. It defines a tree structure of different activities and its sub-activities whose results will be needed in order to complete the end product. Scheduling of all these activities are done in detail using Gantt chart. It also gives a very clear idea of critical activities constrained by time which is obtained using critical path. As a result, monitoring and control of project activities becomes convenient and manageable.

5.1 Work Breakdown Structure

The next step after defining the scope is develop the Work Breakdown Structure, which is the logical division of the project scope into number of activities that are that are simpler to comprehend and manage.

This tree structure represents the breakdown of project specific activities and tasks that has to be carried out during the development of the overall project. The project has main five activities namely Planning, Requirements, Construction, Quality Assurance and Deployment. Furthermore, in each of these activities, there are several sub-activities which has to be completed in order to achieve the end-goal.

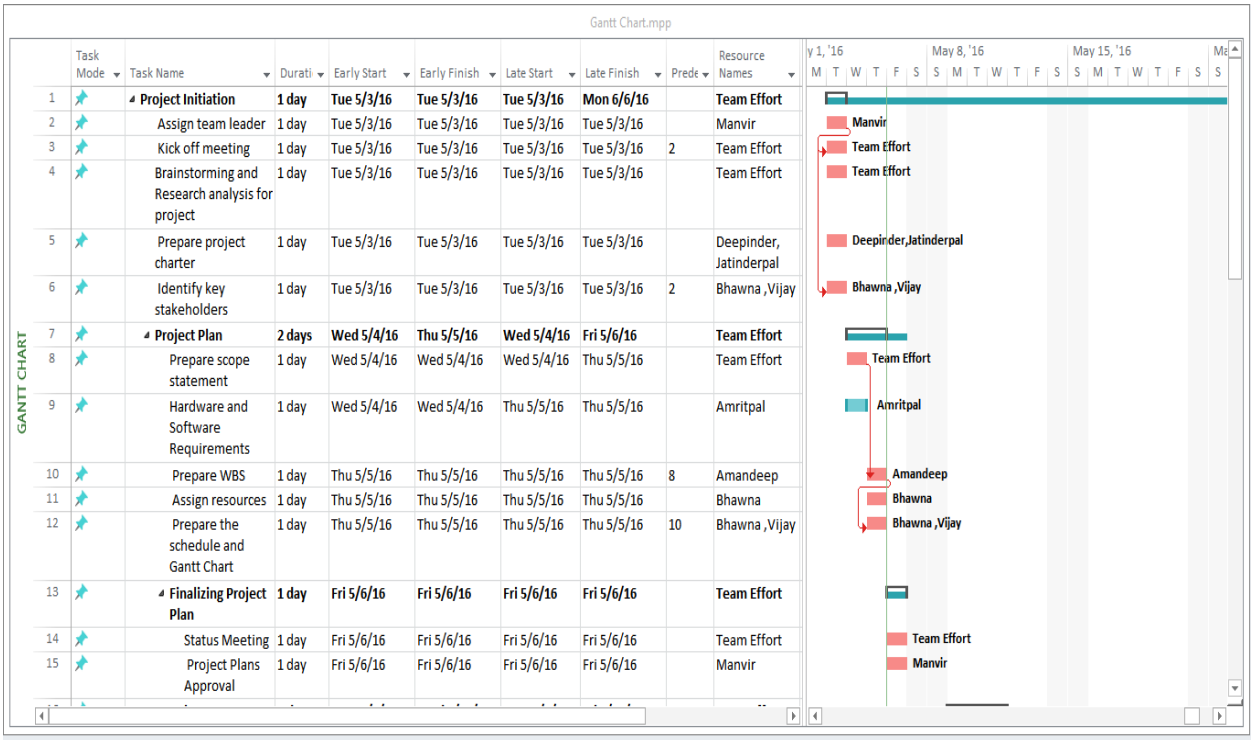
NOTE: For detailed structure of the below graph, please refer to the appendix section.



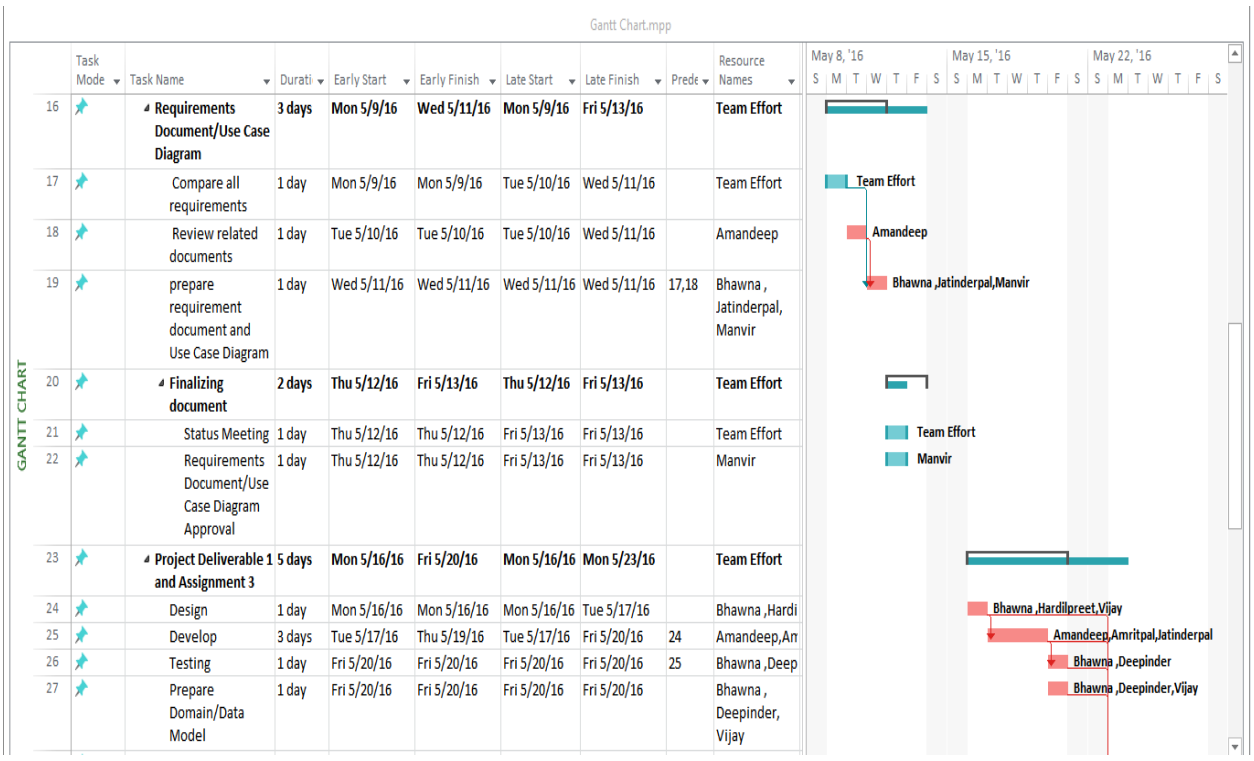
5.2 Gantt chart and critical path

With the end goal of properly planning the described; the limitless and what's more little affiliations use the methodology of Gantt chart. Gantt chart is the key arrangement of demonstrating the start and finish estimation of the activities. The below Gantt chart provides a detailed description of the schedule of our project. It clearly specifies all the tasks that we have assumed in our project along with the specific dates on which they are expected to commence and finish. In other words, it provides you with a work break down detail of all the activities involved in our project. Along with the task timings, all the individuals involved in completing those activities are also listed so that the project is developed in the given time. As mentioned in the chart, there are a list of 43 activities for our project which are to be completed in a span of 6 weeks. Few of the activities are taken up are by the complete team, few of them are by sub-team members and few are respective individual tasks.

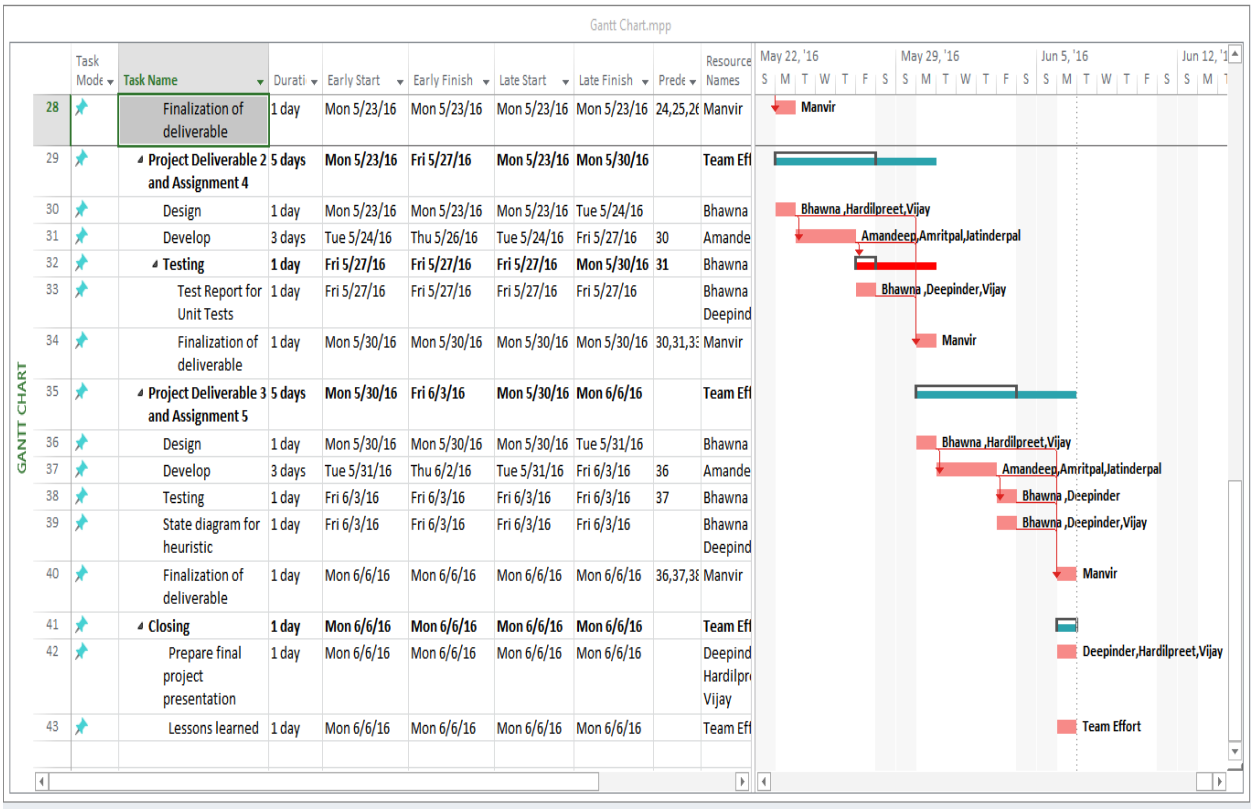
Apart from the Gantt chart we also have a critical part defined for our project providing the longest sequence of activities in our project plan. As it is know that a critical part provides with the best possible manner with which a project can be developed the same applies for our project and all the resources required in order for respective tasks to be completed are defined.



	Task Mode	Task Name	Durati	Early Start	Early Finish	Late Start	Late Finish	Prede	Resource Names
1		**Project Initiation**	**1 day**	**Tue 5/3/16**	**Tue 5/3/16**	**Tue 5/3/16**	**Mon 6/6/16**		**Team Effort**
2		Assign team leader	1 day	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16		Manvir
3		Kick off meeting	1 day	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16	2	Team Effort
4		Brainstorming and Research analysis for project	1 day	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16		Team Effort
5		Prepare project charter	1 day	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16		Deepinder, Jatinderpal
6		Identify key stakeholders	1 day	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16	Tue 5/3/16	2	Bhawna ,Vijay
7		**Project Plan**	**2 days**	**Wed 5/4/16**	**Thu 5/5/16**	**Wed 5/4/16**	**Fri 5/6/16**		**Team Effort**
8		Prepare scope statement	1 day	Wed 5/4/16	Wed 5/4/16	Wed 5/4/16	Thu 5/5/16		Team Effort
9		Hardware and Software Requirements	1 day	Wed 5/4/16	Wed 5/4/16	Thu 5/5/16	Thu 5/5/16		Amritpal
10		Prepare WBS	1 day	Thu 5/5/16	Thu 5/5/16	Thu 5/5/16	Thu 5/5/16	8	Amandeep
11		Assign resources	1 day	Thu 5/5/16	Thu 5/5/16	Thu 5/5/16	Thu 5/5/16		Bhawna
12		Prepare the schedule and Gantt Chart	1 day	Thu 5/5/16	Thu 5/5/16	Thu 5/5/16	Thu 5/5/16	10	Bhawna ,Vijay
13		**Finalizing Project Plan**	**1 day**	**Fri 5/6/16**	**Fri 5/6/16**	**Fri 5/6/16**	**Fri 5/6/16**		**Team Effort**
14		Status Meeting	1 day	Fri 5/6/16	Fri 5/6/16	Fri 5/6/16	Fri 5/6/16		Team Effort
15		Project Plans Approval	1 day	Fri 5/6/16	Fri 5/6/16	Fri 5/6/16	Fri 5/6/16		Manvir



	Task Mode	Task Name	Durati	Early Start	Early Finish	Late Start	Late Finish	Prede	Resource Names
16		**Requirements Document/Use Case Diagram**	**3 days**	**Mon 5/9/16**	**Wed 5/11/16**	**Mon 5/9/16**	**Fri 5/13/16**		**Team Effort**
17		Compare all requirements	1 day	Mon 5/9/16	Mon 5/9/16	Tue 5/10/16	Wed 5/11/16		Team Effort
18		Review related documents	1 day	Tue 5/10/16	Tue 5/10/16	Tue 5/10/16	Wed 5/11/16		Amandeep
19		prepare requirement document and Use Case Diagram	1 day	Wed 5/11/16	Wed 5/11/16	Wed 5/11/16	Wed 5/11/16	17,18	Bhawna , Jatinderpal, Manvir
20		**Finalizing document**	**2 days**	**Thu 5/12/16**	**Fri 5/13/16**	**Thu 5/12/16**	**Fri 5/13/16**		**Team Effort**
21		Status Meeting	1 day	Thu 5/12/16	Thu 5/12/16	Fri 5/13/16	Fri 5/13/16		Team Effort
22		Requirements Document/Use Case Diagram Approval	1 day	Thu 5/12/16	Thu 5/12/16	Fri 5/13/16	Fri 5/13/16		Manvir
23		**Project Deliverable 1 and Assignment 3**	**5 days**	**Mon 5/16/16**	**Fri 5/20/16**	**Mon 5/16/16**	**Mon 5/23/16**		**Team Effort**
24		Design	1 day	Mon 5/16/16	Mon 5/16/16	Mon 5/16/16	Tue 5/17/16		Bhawna ,Hardi
25		Develop	3 days	Tue 5/17/16	Thu 5/19/16	Tue 5/17/16	Fri 5/20/16	24	Amandeep,Am
26		Testing	1 day	Fri 5/20/16	Fri 5/20/16	Fri 5/20/16	Fri 5/20/16	25	Bhawna ,Deep
27		Prepare Domain/Data Model	1 day	Fri 5/20/16	Fri 5/20/16	Fri 5/20/16	Fri 5/20/16		Bhawna , Deepinder, Vijay



5.3 Project Deliverables

We need to submit 3 deliverables for the project "Tic-Tac-Toe" by the given deadline provided by professor.

There are following deliverables and brief description:

Deliverables	Description
Project Deliverable 1	A stand-alone Java application that can demonstrate the board and draw an "X" or an "O" where the client clicks.
Project Deliverable 2	A java portable application that takes a shot at Android gadgets for the full tic-tac-toe amusement. (2 human players)
Project Deliverable 3	A two player PC adaptation of the amusement against a PC player that uses a heuristic to endeavor to beat the human player. Should take a shot at desktop or Android versatile.

6. Appendix

1. WBS (Work Breakdown Structure)

We have created work breakdown structure in tabular form also.

Task Name
1. Project Initiation
1.1 Assign team leader
1.2 Kick off meeting
1.3 Brainstorming and Research analysis for project
1.4 Prepare project charter
1.5 Identify key stakeholders
2. Project Plan
2.1 Prepare scope statement
2.2 Hardware and Software Requirements
2.3 Prepare WBS
2.4 Assign resources
2.5 Prepare the schedule and Gantt Chart
2.6 Finalizing Project Plan
2.7 Status Meeting
2.8 Project Plans Approval
1. **Requirements Document/Use Case Diagram**
3.1 Compare all requirements
3.2 Review related documents
3.3 prepare requirement document and Use Case Diagram
3.4 Finalizing document
3.5 Status Meeting
3.6 Requirements Document/Use Case Diagram Approval
2. **Project Deliverable 1**
4.1 Design
4.2 Develop
4.3 Testing
4.4 Prepare Domain/Data Model
3. **Project Deliverable 2**
5.1 Design
5.2 Develop
5.3 Testing
5.4 Test Report for Unit Tests
4. **Project Deliverable 3**
6.1 Design
6.2 Develop
6.3 Testing

6.4 State diagram for heuristic
5. **Closing**
7.1 Prepare final project presentation
2. Lessons learned

2. Milestone Schedule

Milestone	Responsibility	Milestone Completion Date
Project Plan Approved	Team effort	6/05/2016
Requirements Document/Use Case Diagram	Team effort	13/05/2016
Project Deliverable 1	Team effort	20/05/2016
Domain/Data Model	Team effort	20/05/2016
Project Deliverable 2	Team effort	27/05/2016
Test Report for Unit Tests of 3 main classes	Team effort	27/05/2016
Project Deliverable 3	Team effort	3/06/2016
State diagram for heuristic	Team effort	3/06/2016

7. References

[1] Ableson, W. Frank., Sen, Robi.,King, Chris,. *Android in Action* 2011.

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[3] B. J. MacDonald . *Programming the Finite Element Method in Java and Android* 2013.

[4] Z. R. Mednieks . *Programming Android* 2012.

[5] Pressman Toy Corporation. Tic tac toe. 1978.

[6] H. Kerzner . (). *Project management : a systems approach to planning, scheduling, and controlling*.