PROJECT PLAN

Tic-Tac-Toe Project

Team 4

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Project Manager: Shidokht Hejazi Sepehr

SOEN 6011

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Document Change Control

Revision Number	Date of Issue	Author(s)	Brief Description of Change

1. Project Overview

This project is based on the simple game of Tic-Tac-Toe. In Tic-Tac-Toe game two players alternately put Xs and Os in compartments of a figure formed by two vertical lines crossing two horizontal lines. Each player tries to get a horizontal, vertical, or diagonal row of three Xs or three Os before the opponent does. This program will be compatible with desktop and android mobile.
The project development includes three parts:
1- A stand-alone Java application that is able to show the board and draw an “X” or an “O” where the user clicks
2- A Java mobile application that works on Android devices for the full Tic-Tac-Toe game (two human players)
3- Two player computer version of the game against a computer player that uses a heuristic to attempt to beat the human player.

2. Roles and Responsibilities

The following table shows the leader of each division of the project team:

Project Role	Responsibilities	Assigned to
Project Manager	To ensure the successful initiation, planning, design, execution, monitoring, controlling and closure of the project	Shidokht Hejazi Sepehr
Documentation Lead	Manage availability and verification of materials, prepare necessary documents in coordination with the team	Ramanjeet Kaur Gill
Development Lead	To ensure the features developed by the whole team are produced to the highest possible quality in the fastest possible time	Sushil Patil

The structure of the team is as follows:

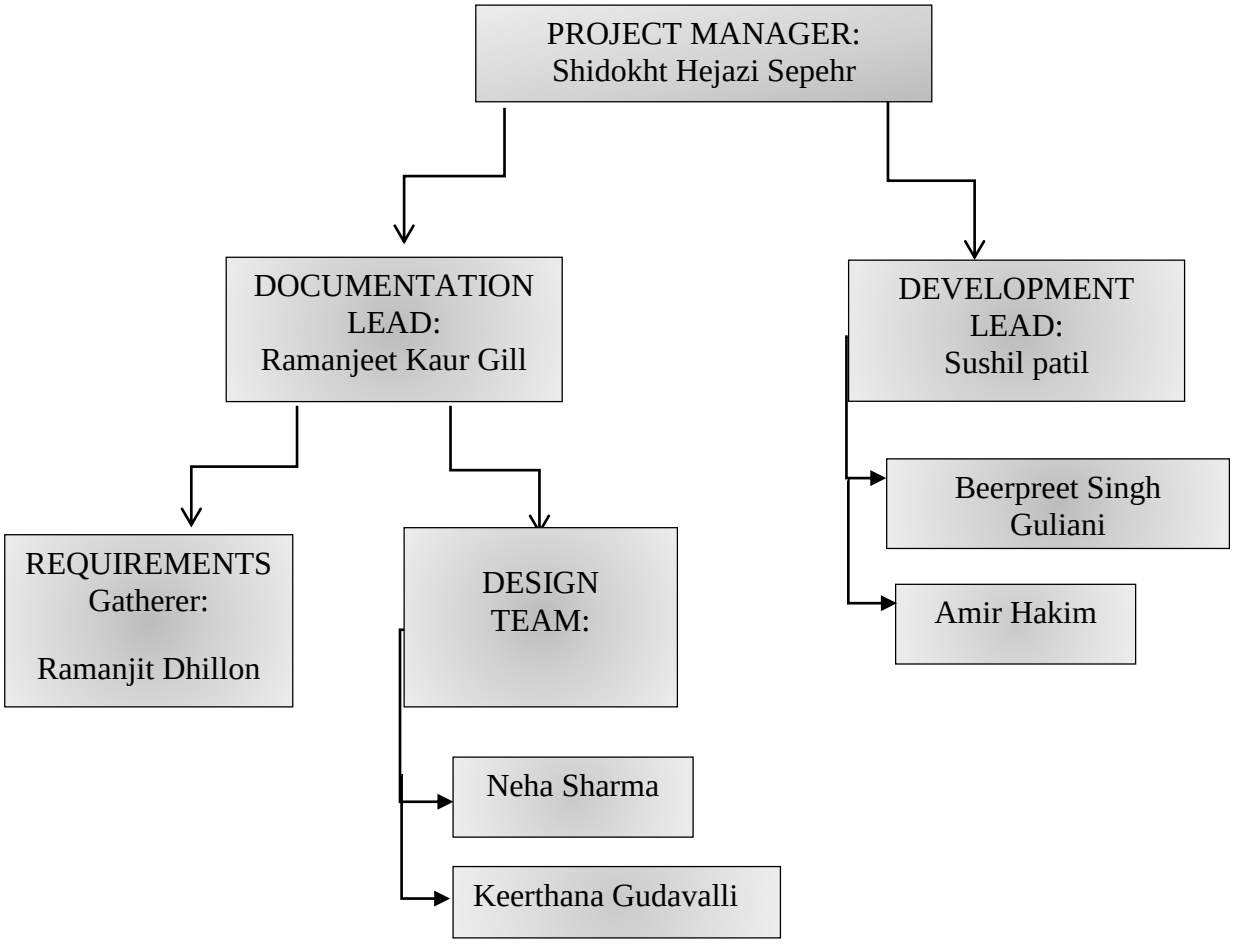


Figure 1: Team structure

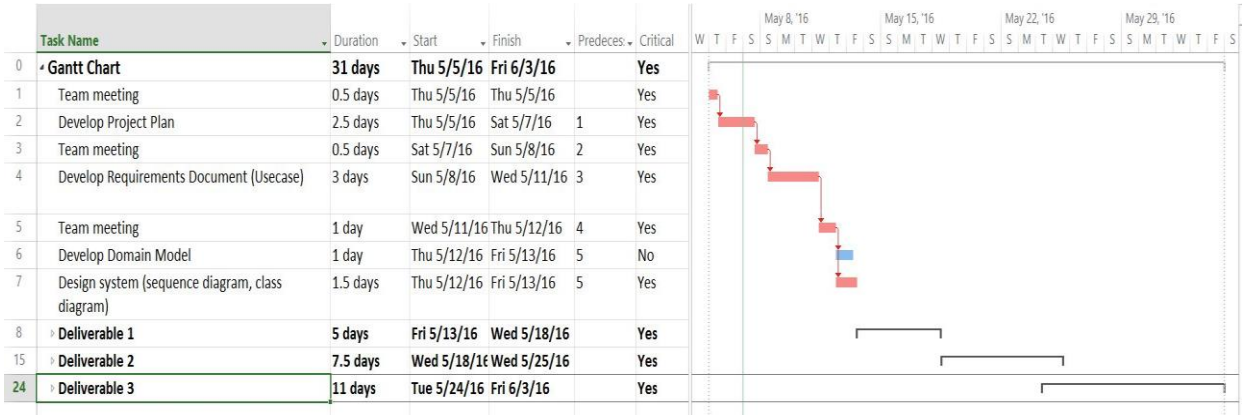
3. Work Plan

3.1 Work Breakdown Structure

The WBS for this project can be found in the Gantt chart in the next section. Project tasks, their estimated duration, predecessor and successor are demonstrated in the diagram.

3.2 Project Schedule

The project starts on 5th of May and is set to finish on June 3rd. The project schedule is depicted using a Gantt chart. The Microsoft Project file for the project schedule is attached as well. Each deliverable will be developed in an iterative manner. The time allocated for each deliverable is based on estimated complexity of it, with AI construction being the most complex feature of the system. Team meetings are scheduled during the process to review what has already been done by teammates and do necessary brainstorming for the next deliverable and its required tasks. Deliverable 1 will include the user interface, the game logic will be implemented in deliverable 2 and it will be converted to an android app as well. Deliverable 3 will include developing the AI to play with a human. Figure 2 displays the high level project schedule.



	Task Name	Duration	Start	Finish	Predeces	Critical
0	**Gantt Chart**	**31 days**	**Thu 5/5/16**	**Fri 6/3/16**		**Yes**
1	Team meeting	0.5 days	Thu 5/5/16	Thu 5/5/16		Yes
2	Develop Project Plan	2.5 days	Thu 5/5/16	Sat 5/7/16	1	Yes
3	Team meeting	0.5 days	Sat 5/7/16	Sun 5/8/16	2	Yes
4	Develop Requirements Document (Usecase)	3 days	Sun 5/8/16	Wed 5/11/16	3	Yes
5	Team meeting	1 day	Wed 5/11/16	Thu 5/12/16	4	Yes
6	Develop Domain Model	1 day	Thu 5/12/16	Fri 5/13/16	5	No
7	Design system (sequence diagram, class diagram)	1.5 days	Thu 5/12/16	Fri 5/13/16	5	Yes
8	**Deliverable 1**	**5 days**	**Fri 5/13/16**	**Wed 5/18/16**		**Yes**
15	**Deliverable 2**	**7.5 days**	**Wed 5/18/16**	**Wed 5/25/16**		**Yes**
24	**Deliverable 3**	**11 days**	**Tue 5/24/16**	**Fri 6/3/16**		**Yes**

Figure 2: high level project schedule

Tasks belonging to each deliverable are displayed in Figure 3. Debugging in each iteration will be done simultaneously as coding. Necessary testing will be done after. At the end of iterations improvements might be made in code and therefore a regression test might be required. The critical path is shown in red and tasks on the critical path are indicated in the Critical column. Almost all tasks are all critical path since they are dependent on each other, meaning a delay in one of them will result in overall project delay.

	Task Name	Duration	Start	Finish	Predeces:	Critical
7	Design system (sequence diagram, class diagram)	1.5 days	Thu 5/12/16	Fri 5/13/16	5	Yes
8	**Deliverable 1**	**5 days**	**Fri 5/13/16**	**Wed 5/18/16**		**Yes**
9	Develop UI	3.5 days	Fri 5/13/16	Mon 5/16/16	7	Yes
10	Debug	3.5 days	Fri 5/13/16	Mon 5/16/16	7	Yes
11	Unit Test (JUnit)	0.5 days	Tue 5/17/16	Tue 5/17/16	10,9	Yes
12	Write Help Material	0.5 days	Tue 5/17/16	Tue 5/17/16	9,10	No
13	Integration Test	0.5 days	Tue 5/17/16	Tue 5/17/16	11	Yes
14	Team meeting	0.5 days	Wed 5/18/16	Wed 5/18/16	13,12,6	Yes
15	**Deliverable 2**	**7.5 days**	**Wed 5/18/16**	**Wed 5/25/16**		**Yes**
16	Implement game code	3 days	Wed 5/18/16	Sat 5/21/16	14	Yes
17	Debug	3 days	Wed 5/18/16	Sat 5/21/16	14	Yes
18	Export to Android	1 day	Sat 5/21/16	Sun 5/22/16	17,16	Yes
19	Unit Test (Junit)	1 day	Sun 5/22/16	Mon 5/23/16	18	Yes
20	Integration Test	0.5 days	Mon 5/23/16	Mon 5/23/16	19	Yes
21	Team meeting	0.5 days	Mon 5/23/16	Tue 5/24/16	20	Yes
22	Update/Refactor code	1 day	Tue 5/24/16	Wed 5/25/16	21	Yes
23	Regression Test	0.5 days	Wed 5/25/16	Wed 5/25/16	22	Yes
24	**Deliverable 3**	**11 days**	**Tue 5/24/16**	**Fri 6/3/16**		**Yes**
25	Update design documents (include AI)	1.5 days	Tue 5/24/16	Wed 5/25/16	21	Yes
26	Develop State Diagram	1 day	Tue 5/24/16	Wed 5/25/16	21	No
27	Implement Code for AI	6 days	Wed 5/25/16	Tue 5/31/16	26,23,25	Yes
28	Debug	6 days	Wed 5/25/16	Tue 5/31/16	26,23,25	Yes
29	Unit Test(Junit)	1 day	Tue 5/31/16	Wed 6/1/16	28,27	Yes
30	Integration Test	0.5 days	Wed 6/1/16	Wed 6/1/16	29	Yes
31	Team meeting	0.5 days	Thu 6/2/16	Thu 6/2/16	30	Yes
32	Update/Refactor code	1 day	Thu 6/2/16	Fri 6/3/16	31	Yes
33	Regression Test	0.5 days	Fri 6/3/16	Fri 6/3/16	32	Yes

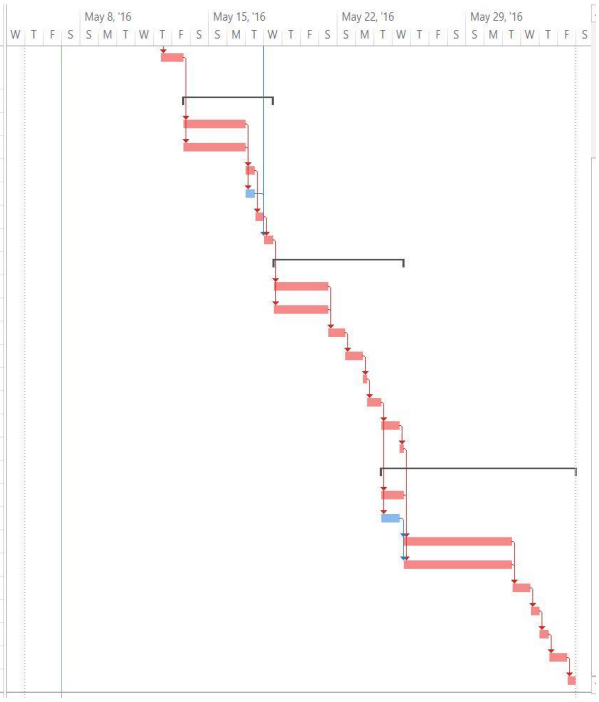


Figure 3: Low level project schedule

4. Project Requirements

4.1 Software

- Eclipse IDE
- Android Studio 2.1

4.2 Hardware

- 250 MB Ram
- 80 GB Hard disc
- P4 processor

5. Milestones & Deliverables

Project's milestones and corresponding deliverables are as follows:

Project Phase	Milestone	Deliverable	Date
Inception	Project Plan Submission	Project Plan, Project Charter	2016/05/07
Elaboration	Requirements Document submission	Requirement document	2016/05/13
	Domain Model submission	Domain Model Diagram	2016/05/20
Construction	End of construction of User Interface	Deliverable 1: User interface of game	2016/05/18
	End of construction of android app	Deliverable 2: Tic-Tac-Toe android app	2016/05/25
	Deliverable 2 unit test report submission	Unit Test Report	2016/05/27
	End of Design related to AI	State Diagram for heuristic	2016/05/25
	End of AI construction	Deliverable 3: Tic-Tac-Toe game with the functionality to play against the computer	2016/06/03
Transition	Project Demonstration	Presentation slides, Game	TBD

6. Technical Process Plans

6.1 Development Process

The Rational Unified Process which is an iterative development process is chosen. Tasks for this process are based on the scope and project milestones.

6.2 Methods, Tools, and Techniques

This project will be developed in Java using Eclipse IDE as the main tool for development and testing. GitHub will be used to host the project repository and also for version control.

In order to convert the program to android, android studio will be used.