Department of Computer Science & Software Engineering

SOEN 6011
Software Engineering Processes
Summer 2016-Assignment I

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Team Name: Triple – T
Group Number - 1
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Project Charter

Project scope:

The scope of this project consists of three deliverables. In the first deliverable, we need to come up with the GUI of a Tic-Tac-Toe game in which there is a 3X3 grid and the user can simply mark his selection by clicking on a particular cell. While in the second deliverable, a two-player game has to be implemented over an Android platform and in the final deliverable, we need to develop a heuristic algorithm for this game in which the user will play against the computer.

Project objectives:

The project Objective is to design and implement the Tic-Tac-Toe Game in different versions and on different platforms as follows:

Version 1: A Java GUI Application needs to be designed for the Tic-Tac-Toe game where two players have to make their selections in the grid in terms of 'X' and 'O'.

Version 2: An Android application has to be developed having the same functionalities as of the previous version.

Version 3: A heuristic algorithm needs to be developed so that a user can play the game against the computer. This version could either be on Desktop or Android platform.

Project Constraints:

Time frames: We have to develop three different software versions on two different platforms in a duration of six weeks.

Skill levels: Although we have experience in Java programming, we need to learn more about Android programing.

Requirements: As there exists no actual stakeholders, we need to elicit requirements based on the GUI and code only.

Projects Assumptions:

The following assumptions were made in preparing the Project Plan:

- Considering that the board consists of a 3X3 grid and each of these cells have the capability of carrying a select marking i.e ('X' or 'O').
- As this is a two player game, each player is assigned with a distinct selection marking. Each player has a fixed time limit in which he has to make a selection of the cell and as he clicks over the desired cell then it will carry his distinct selection mark.
- In case the three adjacent cells have the same selection marks either vertically, horizontally or diagonally, then the player associated with that particular selection mark wins and the system plays an audio associated with this event.

- If all the cells of the board have been selected the game enters into a draw state where none of the players have won.
- If a player quits the game then his opponent will be declared the winner by the system.
- To increase the interactive features of the game, the application will consist of a Help button by which any player can get to know the rules of the game. The players can also enter their names in at the beginning of the game so that their names can be shown when they win.
- At the backend of the game application, there will be a log file which will have all the information about the player's win rate and high score values.

Since we are in the Project Initiation Phase, many aspects of the project may still be undetermined or unknown.

Hardware and Software Requirements:

Hardware requirement:

Desktop:

- At minimum a Pentium 2 266 MHz processor
- The minimum disk requirement for Java runtime environment and Eclipse is 750MB.
- The minimum memory requirements for Windows operating systems is 512 MB.

Mobile:

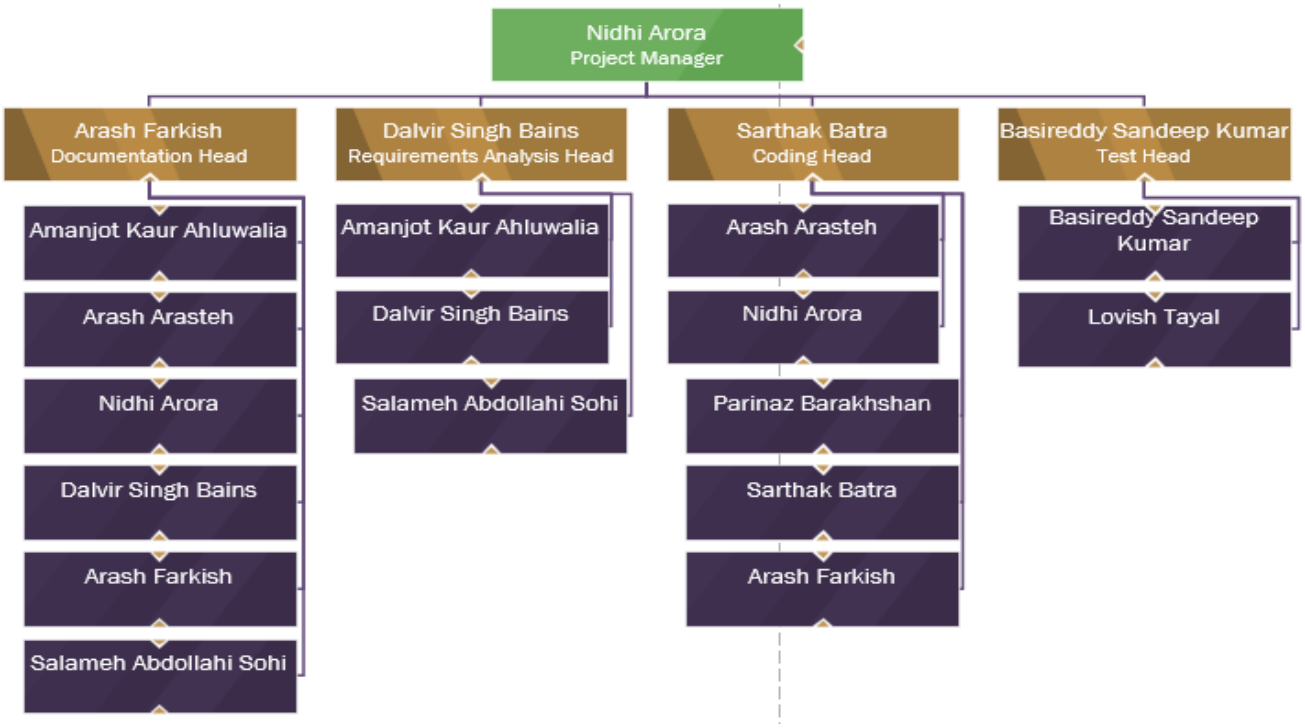
- Chipset: NovaThor U8500 Dual-core 1.0 GHz Cortex-A9
- GPU: Mali-400
- The minimum memory requirements for Android systems is 100 MB.
- Memory storage space of at least 10 MB.

Software requirements:

In order to develop all the software versions we are taking advantage of Eclipse for the development, Junit for testing and Android Studio for developing the Android application.

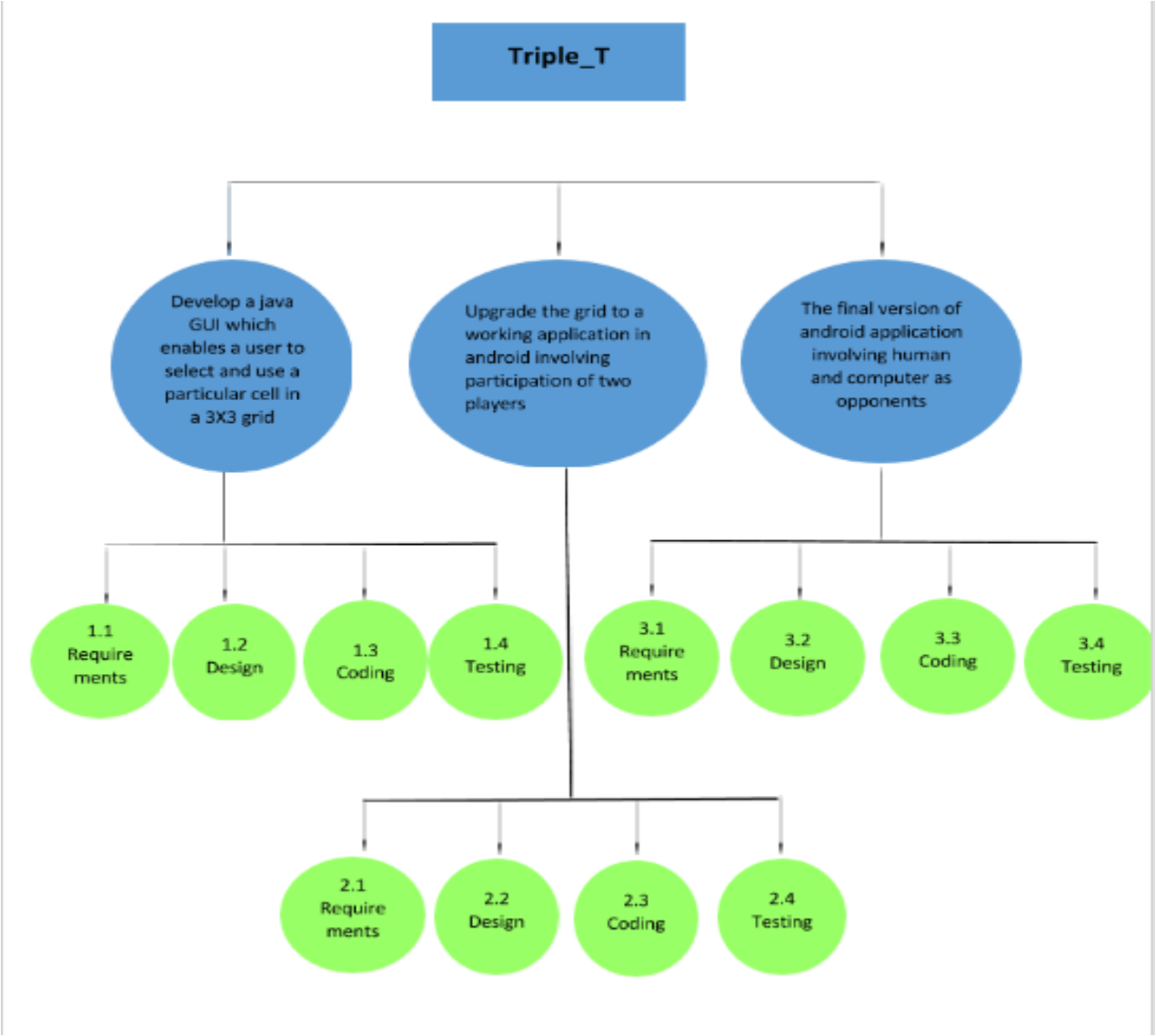
To support proper and reliable functionality of the software Java runtime environment (6 or later) should be installed. While in the case of Android, version 4.0 or above is needed to be present on the device.

Team Organization:



Project Schedule:

Work Breakdown Structure:



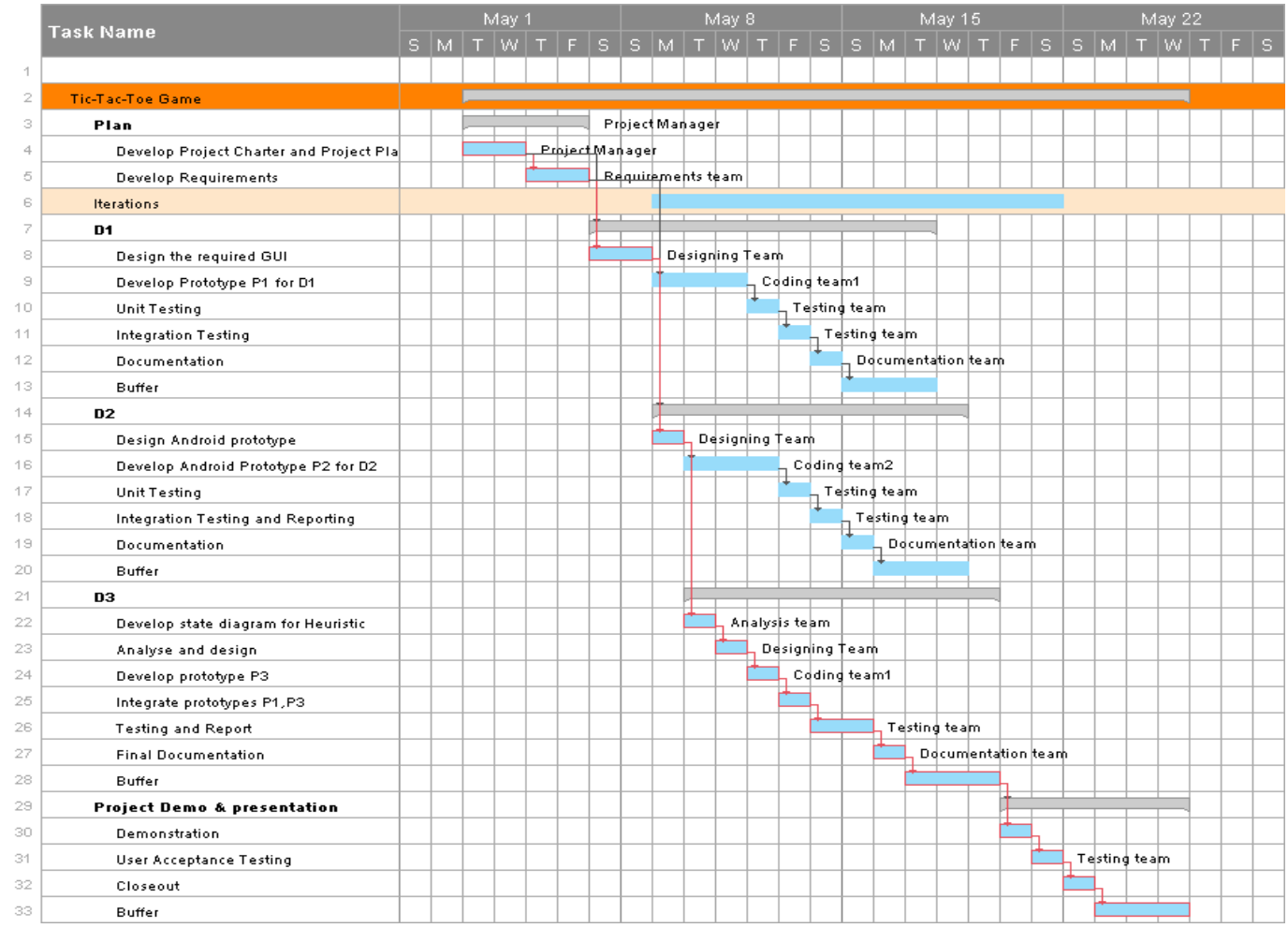
Project Deliverables:

There are three deliverables in this project:

Number	Deadline	Description
Deliverable 1	Friday, May 20 at 6 pm	A java application of tic-tac-toe where two players have to manually make their selections.
Deliverable 2	Friday, May 27 at 6 pm	Android Application having the same functionalities as in previous version.
Deliverable 3	Friday, June 3 at 6 pm	A java application of tic-tac-toe with added heuristic where a user can play against computer.

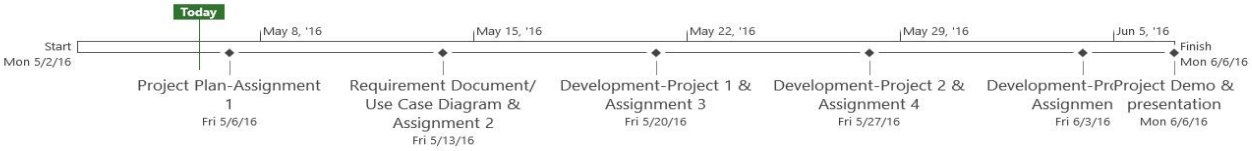
Project Plan

Gantt Chart:



Network Diagram:

NETWORK DIAGRAM

Timeline Chart:

TIMELINE