Software Engineering Project Plan

Team 4

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1 Project Introduction

The project is to design, implement, test, and document a system for playing an Ant Game as laid out in the Customer Requirements document. The project will be split into phases.

1.1 Project Outline

First, requirements for the project will be gathered from the customer's specification of the game. Tests for the final implementation of the game will be identified at this point. The formal requirements document will influence the design of the project. High level design choices, such as the choice of language and testing and documentation frameworks, will be completed as soon as possible. Identifying a suitable way to implement the GUI portion of the game will also be part of the requirements phase.
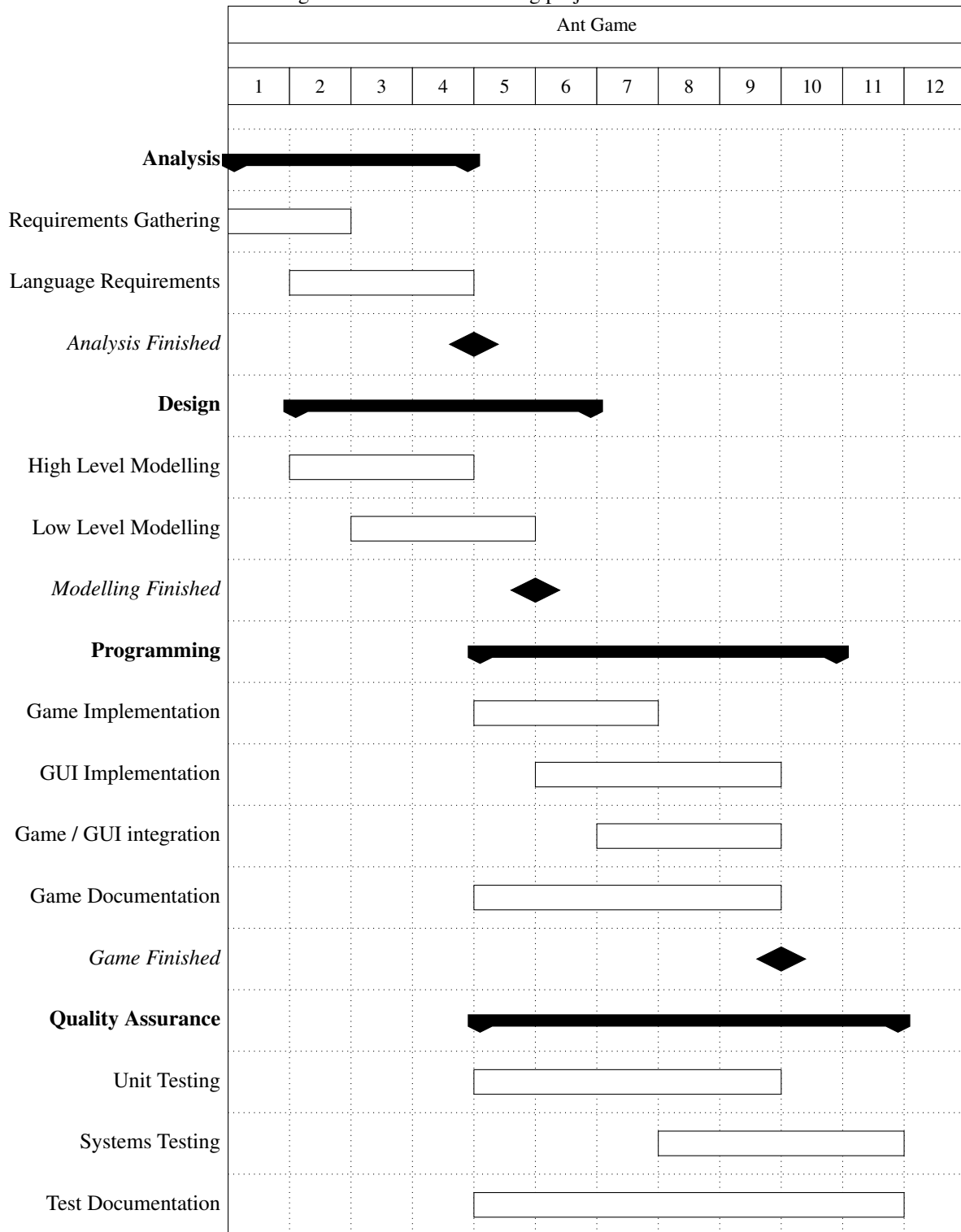
Low level design will include sequence diagrams and class diagrams. This will allow the implementation to be as straightforward as possible. Implementation of the game logic and GUI will take place in parallel.

Testing and documentation of the project will take place at the same time as the implementation, as the two are linked. Unit testing will be especially tied to the coding of the game.

1.2 Project Schedule

The project will take place over 12 weeks. The schedule and phases to be carried out is described in Figure 1.

Figure 1: Gantt chart showing project schedule

		Ant Game										
	1	2	3	4	5	6	7	8	9	10	11	12

Analysis

Requirements Gathering

Language Requirements

Analysis Finished

Design

High Level Modelling

Low Level Modelling

Modelling Finished

Programming

Game Implementation

GUI Implementation

Game / GUI integration

Game Documentation

Game Finished

Quality Assurance

Unit Testing

Systems Testing

Test Documentation

2 Phase Plan

Four major phases have been identified in the project:

Analysis Phase

This phase must be completed before any work can proceed on any of the other phases. The main aspect of this phase is the gathering of the requirements from the customer's specification. Requirements for the project are likely to change, however most of the requirements analysis will have to be completed before any other work can being.

High level systems tests for the project will be identified at this stage, in accordance with the customer's specification.

Design Phase

Both high and low level design will need to be completed before work can proceed on the implementation. High level design documents will include domain diagrams and use case diagrams. This will be written in a way that corresponds to the requirements identified in Phase 1.

Low level documents such as sequence diagrams and class diagrams will allow the implementation to be started.

Implementation Phase

The project design laid out in the low level design will be implemented. Both the implementations of the base game logic and GUI may proceed in parallel, but the game logic must be completed before the GUI may be filly tested, so the game takes priority.

Documention and Testing Phase

This phase will run in parallel to the Implementation phase. The system will be tested as it is being built. Full systems testing will take place as soon as the GUI is in a state to be useable, at which point the game logic should be completed. Tests laid out by the requirements document should be conducted and completed. The completion of this phase, including completion of the game documentation and testing will signal the end of the project.

2.1 Project Milestones

The progress of the project will be measured by three main milestones, which correspond with the four main phases of the project:

Completion of the Analysis Phase

Once work has been completed on the requirements gathering then the design of the game implementation can proceed.

High and Low level Design Completed

When the design is finished then the implementation can be started. Simultaneously the testing in accordance with the requirements can be started. The low level design documents will also allow the design of the GUI to proceed, i.e. APIs and data classes to communicate between the two.

Game Implementation Finished

The completion of the game implementation will allow proper systems testing to begin with the GUI. Documentation of the whole project may also be consolidated.

Game Finished

The game will be finished meet all tests laid out by the requirements document. All documentation will be completed.

3 Organization Plan

Team members will be assigned to the following roles. Roles are not static, i.e. one team member may be assigned to more than one role over the course of the project.

Analysis Team

This team is responsible for identifying and disambiguating requirements laid out by the customer specification. This team will not have much work to do after the fifth week, however the requirements document will require updating as more requirements become apparent as the system develops.

Design Team

This team is responsible for deciding on high level implementation details, e.g. language choice, testing and documentation frameworks, etc. After this, they shall create class and sequence diagrams necessary for the implementation. This team will not be active after the sixth week of the project.

Programming Team

This team will implement the specification laid out by the design team. They shall work closely with the Quality Assurance team in testing and documenting the system.

Quality Assurance Team

This team is directly responsible overseeing the testing and documentation of the system. In particular, this team shall ensure that the system conforms to the requirements laid out by the analysis team.

3.1 Conflict Resolution Plan

3.2 Peer Assessment Plan