

Table 1: Revision History

| Date | Developer(s) | Change |
|--------------------|----------------------|--|
| Sept 25, 2018 | Vaibhav, Usman, Andy | Worked on part 1 to 4 |
| Sept 27, 2018 | Vaibhav, Usman, Andy | Worked on part 4 to 8 |
| Sept 27, 2018 | Vaibhav | Added the information from the meeting documents to the LaTeX file |
| Sept 28, 2018 | Andy | Proof of concept, Git workflow, Final editing and formatting |
| Sept 28, 2018 | Usman | Updated proof of concept |
| Oct 12, 2018 | Andy | Made changes according to feedback on development plan and added section on POC demo |
| Dec 2, 2018 | Vaibhav Chadha | Revision one changes to improve the documents quality. |

SE 3XA3: Development Plan

Snake 2.0

Team # 30, VUA30
Vaibhav Chadha , chadhav
Usman Irfan , irfanm7
Andy Hameed , hameea1

1 Team Meeting Plan

Meetings will be held **twice a week** at the following times:

- Mondays 5:30 - 6:30 pm at KTH Computer Labs
- Wednesdays 12:30 to 2:00pm at Health science library

1.1 Roles and Agenda

Chair: Andy Hameed

- Responsible for creating the agenda and selecting topics that pertain to all team members
- Agenda items will be listed as questions

Notettaker: Usman Irfan

- Responsible for taking meeting minutes
- Meeting decisions will be summarized in a statement at the end of the meeting

Timekeeper: Vaibhav Chadha

- Keeps track of time in case we are spending too much time on one topic

2 Team Communication Plan

Main source of communication is **Facebook Messenger**, it will be used for general inquiries, updates, reminders of team meetings, any links to useful resources and so on. Phone and texting will be used as a backup in case of urgent

matters, for example not being able to get in contact with a team member through messenger.

Aside from these, the team will be using Workflowy to assign small tasks that are promptly due or ones that may not necessarily fit on the gantt chart because they are minor - this tool will be used to delegate a small to-do list for each team member .

3 Team Member Roles

Vaibhav Chadha:

- Latex Documentation
- Analyst - makes sure the requirements of the clients are met through the software
- gantt chart management

Usman Irfan:

- Scribe
- Technology Research
- operation manager -ensures project development is running smoothly and software is being developed according to milestones

Andy Hameed:

- Final editing
- latex documentation
- team leader

All:

- GIT project management

4 Git Workflow Plan

We will be using the Git Feature Branch Workflow to manage the software development. Using branches, each team member is capable of working on different modules or sections of the software at the same time in localized branches, before pushing their changes to the master branch.

The following procedures will be followed:

- Vaibhav will be tagging any major milestones for final submission. This makes the submission process consistent. Otherwise, Andy or Usman will agree on one person to tag and submit for final submission.
- Any major changes can be placed in a branch to avoid merging conflicts and overwriting existing work. They can be merged later on upon team agreement.

5 Proof of Concept Demonstration Plan

The original project is built using **JavaScript**, HTML and CSS in contrast to our development plan using python and the Pygame library. Since we are using an OOP language, we will be able to create classes for different components of the snake game such as the snake unit block, snake body, and snake bate. The hardest part of the implementation will be the movement of the snake according to the user's keyboard inputs, and second to that would be the process of expanding the snake once a food item is captured. Besides that, the interface may be difficult to implement in python but could be simple with the use of a python framework such as PyQT5.

Once our game application has been developed the next part would be to test the project and for that we will be using Pytest, since our backend language is python this will help us test all possible functions and aspects. The functions that will be difficult to test would be to see if the snake eats the food, does the food appear at random locations after eaten by the snake and if the snake tries to leave the borders, will the game end. Portability will have to be taken into consideration since the application is being built for windows. However, it can be compiled and run on any system as long as the necessary files and libraries are download.

5.1 POC Demo

The team will be demonstrating the movement of a snake around the screen using unit blocks for the body of the snake. Lengthening the snake body, scoring and eating the bate will not be demonstrated in the demo. This POC should demonstrate that with the movement of the snake, which is the main component of the game, the team will be able to develop classes to represent other components of the game such as the score, food bate, and lengthening of the snake body.

6 Technology

Coding Language: Python, **Kivy** for GUI

IDE: IDLE scripting

Testing: PyUnit testing

Documentation: Doxygen

7 Coding Style

We will be using the Google Python Style Guide for our coding style. It encompasses all the necessary naming conventions and standards required for the project development.

8 Project Schedule

Please see the following pages for the project schedule in the form of a [Gantt Chart](#).

3XA3: Team Project

9-Nov-2018

<http://>

Project manager

Project dates

25-Sep-2018 - 7-Dec-2018

Completion

7%

Tasks

60

Resources

5

Developing the classical Snake game using python and front-end development languages.

Tasks

2

| Name | Begin date | End date |
|--------------------------------|------------|----------|
| Development Plan | 25/09/18 | 28/09/18 |
| Team Meeting Plan | 25/09/18 | 25/09/18 |
| Team Communication Plan | 25/09/18 | 25/09/18 |
| Copy_Team Communication Plan | 25/09/18 | 25/09/18 |
| Team Member Roles | 25/09/18 | 25/09/18 |
| Git workflow plan | 25/09/18 | 25/09/18 |
| Proof of Concept | 26/09/18 | 26/09/18 |
| Technology | 26/09/18 | 26/09/18 |
| Coding Style | 27/09/18 | 27/09/18 |
| Project Schedule | 27/09/18 | 27/09/18 |
| Project review | 28/09/18 | 28/09/18 |
| Requirements Document Revision | 01/10/18 | 05/10/18 |
| Project Drivers | 01/10/18 | 02/10/18 |
| Functional Requirements | 02/10/18 | 03/10/18 |
| Non-Functional Requirements | 03/10/18 | 04/10/18 |
| Project Issues | 03/10/18 | 04/10/18 |
| Push & Tag Document | 05/10/18 | 05/10/18 |
| SpellCheck | 04/10/18 | 04/10/18 |
| Proof of Concept Demonstration | 10/10/18 | 15/10/18 |
| Snake Body & Movement | 10/10/18 | 11/10/18 |
| Home Page GUI | 11/10/18 | 12/10/18 |
| Border Boundaries | 15/10/18 | 15/10/18 |
| Test Plan Revision | 19/10/18 | 25/10/18 |
| General Information | 19/10/18 | 22/10/18 |
| Plan | 19/10/18 | 22/10/18 |
| System Test Description | 22/10/18 | 23/10/18 |

Tasks

3

| Name | Begin date | End date |
|---|------------|----------|
| Tests for Proof of Concept | 23/10/18 | 25/10/18 |
| Tests for Functional Req. | 23/10/18 | 25/10/18 |
| Tests for Non-Functional Req. | 23/10/18 | 24/10/18 |
| Comparison to Existing Implementation | 24/10/18 | 25/10/18 |
| Unit Test Plan | 24/10/18 | 25/10/18 |
| Design & Document Revision | 31/10/18 | 05/11/18 |
| Anticipated and Unlikely Changes | 05/11/18 | 05/11/18 |
| Introduction | 31/10/18 | 31/10/18 |
| Module Hierarchy | 01/11/18 | 02/11/18 |
| Conncection between Requirements and Design | 31/10/18 | 02/11/18 |
| Module Decomposition | 31/10/18 | 05/11/18 |
| Traceability Matrix | 31/10/18 | 05/11/18 |
| Use Heirarchy between modules | 02/11/18 | 05/11/18 |
| MIS | 02/11/18 | 05/11/18 |
| Interface - Doxygen | 02/11/18 | 05/11/18 |
| Food & barriers - Doxygen | 02/11/18 | 05/11/18 |
| Snake body & movement - doxygen | 02/11/18 | 05/11/18 |
| Implementation | 06/11/18 | 15/11/18 |
| highscore | 12/11/18 | 13/11/18 |
| Gameplay | 06/11/18 | 15/11/18 |
| init | 06/11/18 | 07/11/18 |
| Interface | 06/11/18 | 15/11/18 |
| Food | 08/11/18 | 08/11/18 |
| Themes | 13/11/18 | 15/11/18 |
| Testing | 13/11/18 | 15/11/18 |

Tasks

| Name | Begin date | End date |
|--|------------|----------|
| System/Integration testing | 13/11/18 | 13/11/18 |
| <i>Will be done throughout the development process to check if everything works together correctly. Closer to the final date, peers will be asked to try the game as part of system testing.</i> | | |
| Gameplay - white box testing | 14/11/18 | 15/11/18 |
| Interface - white box testing | 14/11/18 | 15/11/18 |
| highscore - whitebox testing | 14/11/18 | 15/11/18 |
| Themes - white box | 14/11/18 | 15/11/18 |
| Revision 0 Demonstration | 12/11/18 | 13/11/18 |
| Final Demonstration | 19/11/18 | 27/11/18 |
| Peer Evaluation - Final Demo | 27/11/18 | 30/11/18 |
| Final Documentation | 06/12/18 | 06/12/18 |
| <i>Problem Statement</i> | | |
| <i>Development Plan</i> | | |
| <i>Requirements Document</i> | | |
| <i>Design Document</i> | | |
| <i>Test Plan</i> | | |
| <i>Test Report</i> | | |
| <i>Users Guide (optional)</i> | | |
| <i>Source Code</i> | | |

Resources

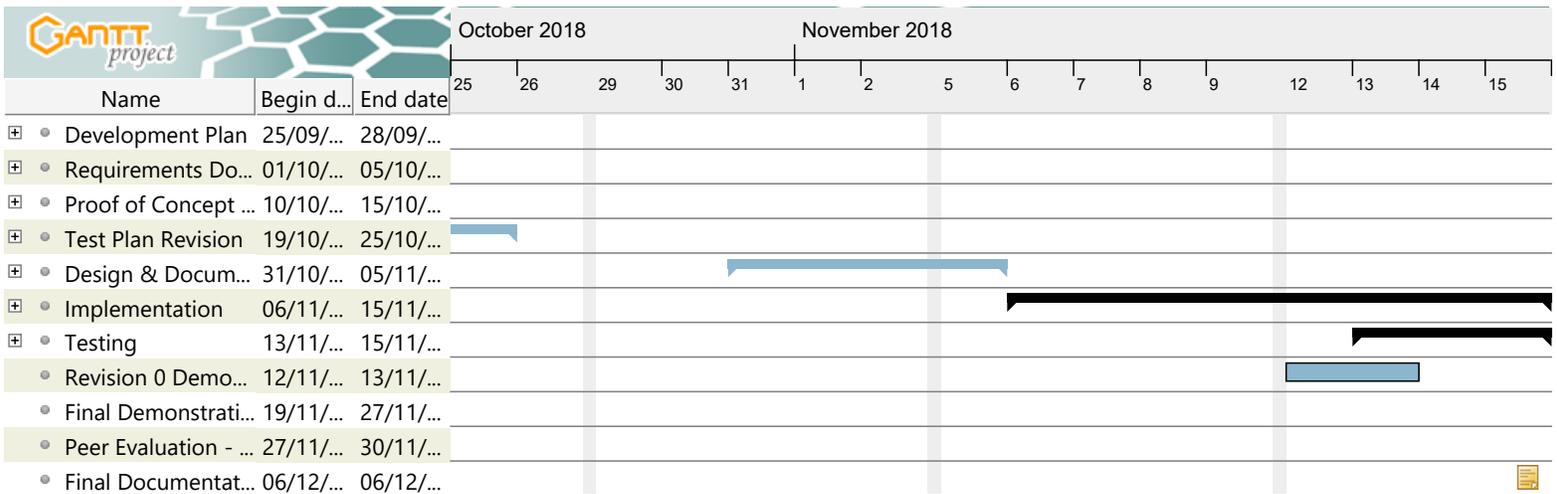
| Name | Default role |
|-------------|--|
| Andy | Main Programmer Requirements Documentation |
| Usman | Main Programmer Requirements Documentation |
| Vaibhav | Git master Testing Requirements |
| Varun Hooda | TA |
| Dr. Bokhari | Course Professor |

3XA3: Team Project

9-Nov-2018

Gantt Chart

6



9 Project Review