Software Requirements Specification SNAKE

Alex Guerrero, Keyur Patel and Shafeeq Rabbani

October 10, 2015

Contents

1 Project Drivers

The scope of the requirements is limited to...

1.1 The Purpose of the Project

The purpose of Snake is to help users have fun. Snake is designed to engage users in an enjoyable activity which encourages them to use strategic planning and time management to achieve higher and higher scores.

1.2 The Stakeholders and Users

The client for this project is the administrative staff that teach SFWR ENG 3XA3. This includes Dr. Smith, and the teaching assistants for the course. They are the recipients of the course work and are responsible for the supervision and evaluation of the product. Other stakeholders include the team members working on the project, and classmates who would want to critique and enjoy our program. The users of this product will be (potentially) available as open source software to the online community . This group of users can vary from beginner programmers to professionals in the computing industry. Beginner programmers are the lowest level of users because this product is delivered in a programming language and uses libraries that does not allow it to be packaged into an executable. Other users include the core members of the project, because of the sense of pride they will feel towards the product.

2 Project Constraints

2.1 Mandated Constraints

There is a time constraint for this product which says that it must be completed by the first week of December 2015. Another constraint states that the product must not be implemented on a mobile device, the rationale being that the professor and TAs may not have access to the devices used. Because the team members designing the product are university students, there is no funding and the budget must be limited to a total of 0.00 CAD. The current system is implemented on any personal computer or laptop which has 32-bit Python 2.7, and PyGame installed. Not other hardware restrictions are known in order to implement the current system.

2.2 Naming Conventions and Terminology

- Client: Administrative staff of SFWR ENG 3XA3 (Doctor Smith and TAs)

- Constraint: A global requirement that affects decisions about the scope of the project.

- Stakeholder: A person, group or organization that has interest or concern in the project.

- Player: A person who plays the video game.

- Snake: The classic video game conceptualized in the late 1970s, where a player manoeuvres a line which grows in length, with the line itself being a primary obstacle

2.3 Relevant Facts and Assumptions

The existing application only has 91 lines of Python code, which provides the barebones of the ideal snake game. There is no documentation or modularization of the code.

3 Functional Requirements

3.1 The Scope of the Work

The scope of the work is limited to a simple implementation of the game Snake

3.2 Business Data Model and Data Dictionary

Not applicable for this project

3.3 The Scope of the Product

Refer to The Scope of the Work

3.4 Functional Requirements

- R1: The user must be able to start the game by a single click.

- R2: The snake must be controlled by keyboard.

- R3: When the snake hits an obstacle , freeze the game indicating game over.

- R4: When the snake collects food its length grows by 1 unit.

- R5: As the user advances in the game, the snake becomes faster.

- R6: When the user hits the border, the snake dies.

- R7: The game calculates a score that is based on the length of the snake.

- R8: The game outputs the score after the game is finished.

4 Non-functional Requirements

4.1 Look and Feel Requirements

Appearance Requirements

- 1: the product must be able to display a main menu with buttons and lists

- 2: the product must be able to display an error window if anything occurs

- 3: the product should have a soundtrack playing during the main menu and gameplay

Style Requirements

- 1: The product shall appear minimalistic in terms of graphics and visuals.

4.2 Usability and Humanity Requirements

Ease of Use Requirements

- 1: the product must be easy to use by anyone from children to seniors (after installation of required software).

- 2: The casual user is expected to remember at most 7 keys an their functions

Personalization and Internationalization Requirements

Not Applicable for this project

Learning Requirements

- 1: The product shall be easy for a child to learn once the software requirements are met

Understandability and Politeness Requirements

- 1: the product shall use common directional movement keys

- 2: the product shall hide its implementation and construction from the user

Accessibility Requirements

Not Applicable for this project

4.3 Performance Requirements

Speed and Latency Requirements

- 1: The response to any keys shall be fast enough to avoid delayed actions (lag)

Safety Critical Requirements

Not applicable for this project

Precision or Accuracy Requirements

Not applicable for this project

Reliability and Availability Requirements

- 1: The product shall be usable 24h of the day, as it does not require network connectivity

Robustness or Fault-Tolerance Requirements

Not applicable for this project

Capacity Requirements

Not applicable for this project

Scalability and Extensibility Requirements

Not applicable for this project

Longevity Requirements

Not applicable for this project

4.4   Operational and Envrionmental Requirements

Expected Physical Environment

- 1: The product shall be usable in any environment where the computer it is on can be used

Requirements for Interfacing with Adjacent Systems

Not Applicable to this project

Productization Requirements

- 1: The product shall be distributed as a ZIP file

- 2: The product shall be able to be installed by a user with the aid of instructions

Release Requirements

Not Applicable for this project

References