2805, Principles of Software Engineering Final Submission

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Contents

1 Principles of Software Engineering Final Submission

1.1 Design Principles

When creating any piece of software, various design principles must be acknowledged and taken into consideration. Principles such as least privilege, fail-safe defaults, separation of concerns, information hiding and data encapsulation, coupling and cohesion and the principle of single responsibility. When creating or writing any code segment in a project it is important to keep in mind the overarching structure along with TODO:

1.2 Design Process

TODO:

1.3 System Models

TODO:

1.4 Minesweeper Software System Design

TODO:

1.5 Software Architecture

TODO:

1.6 Design Pattern Implementations

Model View Controller and Interface Programming

TODO:

Facade Pattern

TODO:

State Pattern

TODO:

1.7 User Interface

TODO:

Principles of Composition and Single Responsibility

TODO:

1.8 Version Control

The version control used in developing this software system was Git. And the source repository was hosted on the website GitHub.com. This allowed for the generation of graphs as well as logs of commits and other metrics. By using version control the project has been able to accurately track the source code as well as providing valuable versioning services used when trying to determine when a bug was introduced into the source. As the developers work across multiple devices source control has been a valuable tool in keeping multiple local copies of the repository synchronized and up-to-date across multiple computers.

Note: Repository is private to prevent plagiarism. | This log was created by using the command

```
git log --pretty=format:'%h;%an;%s' > ./log.csv
```

Version Control History / Log

Author	Time	Comment
ZaymonFC	Fri Sep 22 15:00:06 2017 +1000	Finalized file names and dir structure
ZaymonFC	Fri Sep 22 12:59:45 2017 +1000	Added timer, scoring and win/loss notifications
ZaymonFC	Wed Sep 13 13:23:49 2017 +1000	Added default closing behaviour
ZaymonFC	Tue Sep 12 23:40:48 2017 +1000	Finished hexagon implementation
ZaymonFC	Tue Sep 12 22:12:03 2017 +1000	Added positioning service
ZaymonFC	Tue Sep 12 15:45:27 2017 +1000	Started creating position service
ZaymonFC	Tue Sep 12 15:06:42 2017 +1000	Implemented hexagonal grid
ZaymonFC	Thu Sep 7 21:45:13 2017 +1000	Fixed performance bug where tiles were being drawn but not deleted resulting in unnecessary replication (space leak)
ZaymonFC	Wed Sep 6 13:27:42 2017 +1000	Refactored menu button creation into a parameterised function
ZaymonFC	Tue Sep 5 15:27:35 2017 +1000	Ignored pycache and changed settings
ZaymonFC	Tue Sep 5 15:14:39 2017 +1000	Added main menu elements and pages to select game size and game difficulty
ZaymonFC	Sun Sep 3 20:12:00 2017 +1000	Milestone 02 Submission
ZaymonFC	Sun Sep 3 14:56:34 2017 +1000	Added all diagrams
ZaymonFC	Sun Sep 3 00:19:47 2017 +1000	Added Histogram and Activity Diagram
ZaymonFC	Sat Sep 2 23:26:24 2017 +1000	Added sequence diagram
ZaymonFC	Sat Sep 2 22:40:27 2017 +1000	Added class diagram
ZaymonFC	Sat Sep 2 21:26:56 2017 +1000	Added 5 sections to report
ZaymonFC	Sat Sep 2 18:29:57 2017 +1000	Added encoding for epydoc2
ZaymonFC	Sat Sep 2 18:27:35 2017 +1000	Added encoding for epydoc
ZaymonFC	Sat Sep 2 17:00:15 2017 +1000	Added Report Dir
ZaymonFC	Fri Sep 1 23:17:40 2017 +1000	Added Covers

Author	Time	Comment
ZaymonFC	Fri Sep 1 22:59:15 2017 +1000	Implementing covers
ZaymonFC	Fri Sep 1 22:42:09 2017 +1000	Implemented MVC and used canvas to draw board
ZaymonFC	Fri Sep 1 18:49:28 2017 +1000	Merge branch 'master' of https://github.com/ZaymonFC/PSD_MineSweeper
ZaymonFC	Fri Sep 1 18:49:22 2017 +1000	PreMerge
ZaymonFC	Fri Sep 1 18:02:23 2017 +1000	Added click position event hadler for game canvas
ZaymonFC	Fri Sep 1 16:37:13 2017 +1000	Added function to render grid of buttons to canvas
ZaymonFC	Fri Sep 1 15:43:04 2017 +1000	Added view
ZaymonFC	Wed Aug 30 22:36:37 2017 +1000	Added title lable and finished main menu functionality
ZaymonFC	Wed Aug 30 21:25:47 2017 +1000	Added button assets for main menu and worked on GUI components
ZaymonFC	Wed Aug 30 20:27:31 2017 +1000	Added skeleton for MVC
ZaymonFC	Wed Aug 30 19:09:26 2017 +1000	Started Game Restructure
ZaymonFC	Mon Jul 31 20:07:31 2017 +1000	Modified recursive reveal to show extra layer of tiles
ZaymonFC	Fri Jul 28 23:45:57 2017 +1000	Fixed button tile images to display actual tile png'
ZaymonFC	Fri Jul 28 20:02:30 2017 +1000	Added Class Diagram Data
ZaymonFC	Fri Jul 28 19:59:08 2017 +1000	Added Class Diagram
ZaymonFC	Fri Jul 28 19:31:29 2017 +1000	MileStone 01 Achieved
ZaymonFC	Fri Jul 28 17:08:56 2017 +1000	Added recursive reveal and reveal mine end conditions
ZaymonFC	Fri Jul 28 16:34:11 2017 +1000	Added images for python implementation and added event callbacks to the buttons
ZaymonFC	Thu Jul 27 23:45:45 2017 +1000	Added grid of buttons with colouring to test generating functions
ZaymonFC	Thu Jul 27 23:25:57 2017 +1000	Added methods to the python variant to create the graph, add the mines and generate the button numbers

| Author	Time	Comment
ZaymonFC	Thu Jul 27 22:39:03 2017 +1000	Modified Tiles, Created a python attempt at back end representation
ZaymonFC	Thu Jul 27 20:57:53 2017 +1000	Merge branch 'master' of https://github.com/ZaymonFC/PSD_MineSweeper
ZaymonFC	Thu Jul 27 20:57:45 2017 +1000	MineSweeperJS Fixed
ZaymonFC	Wed Jul 26 12:32:47 2017 +1000	Worked on creating the graph for neighbors
ZaymonFC	Tue Jul 25 15:28:53 2017 +1000	Added style and untracked output files from main repo
ZaymonFC	Tue Jul 25 15:14:53 2017 +1000	Added square tile spritesheet and frameboarder
ZaymonFC	Tue Jul 25 14:46:07 2017 +1000	Fixed index title, added a class for game tile which extends the phaser button object
ZaymonFC	Tue Jul 25 00:11:11 2017 +1000	Added assets for buttons, loaded them into the mainmenu game state and then created event handlers to switch state to the GameState class on click
ZaymonFC	Mon Jul 24 23:38:08 2017 +1000	Added Mainmenu state, fixed state handling, implemented a global constant file for game configurations
ZaymonFC	Mon Jul 24 23:00:29 2017 +1000	Setup webpack and refactored starting code. Added MineSweeper class to act as a state manager
ZaymonFC	Mon Jul 24 20:10:59 2017 +1000	Configured node modules and installed webpack
ZaymonFC	Mon Jul 24 20:00:52 2017 +1000	Created class to represent tile and created basic constructor
ZaymonFC	Sun Jul 23 22:36:30 2017 +1000	Understood working with phaserjs sprites and implemented a 'game' GameState
ZaymonFC	Sun Jul 23 14:02:10 2017 +1000	Initial Commit

Histogram of Effort
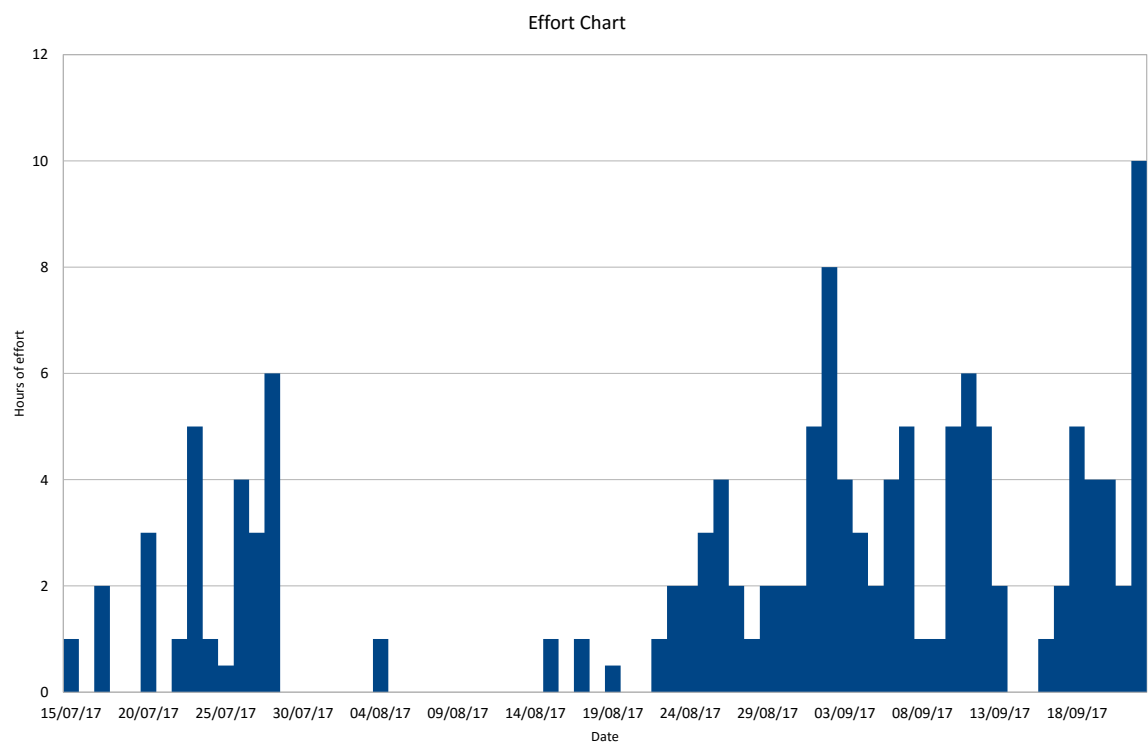
Figure 1: Collaboration diagram for MineSweeper

FIXME: