**Retrospective Write-up**

**EECS 448**

***Josh Vandeleuv, Alex King, Brandon Pramann, Adam Soelter***

**Log of all Meetings:**

**Meeting #1:**

***Date & Location*:**

* February, 8, 2019
* Learned Classroom

***Purpose*:**

* Formal establishment of team members, project language, graphic framework, IDE, and other standardizations to make project run smoothly.

***Topics Discussed*:**

* Decided on using C# as the programming language with a .Net framework.
* Decided to use Trello to organize the workflow of the project.
* Setup project management board (Trello), added group members and assigned jobs.
* Setup and shared GitHub repository.
* Established soft deadline of February 13, 2019 to discuss progress.
* Assigned Initial tasks to each person.
  + ***Adam:*** *Create a class for the initial game sequence. This class should use the initial form to start the game when the file is executed. Form 1 should contain fields that allow the user to indicate the desired number of mines, columns, and rows. It should also prevent the user from inputting nonsensical values in for any of the fields.*
  + ***Alex:*** *Create a class that can be used for the end game sequence. This should reveal the board showing all mines and appropriately display the correct ending depending on whether the player won or lost the game. The form should also include a retry/play again button and a quit button on both the end screen forms. The retry button should recall the intro class constructor created by Adams class to restart the game and the quit button should close the form.*
  + ***Josh:*** *Create a class that generates a random 2-dimensional array the same dimensions as the current gameboard and randomly populate that array with the specified number of mines stored inside of Adam’s initial class. Add .bmp icons to be used by the gamemap class to draw the images over the proper tiles.*
  + ***Brandon:*** *Create a class that generates a form, tracks the users input, and interacts with the other classes to call the appropriate forms and functions at the right time. This class should also reference the bomb array to track whether a player clicks on a bomb or a free space.*

**Meeting #2:**

***Date & Location*:**

* February, 13, 2019
* Leep2 Atrium

***Purpose*:**

* Touch base on current progress of initial tasks. Establish plans based on current availability to update and test game.

***Topics Discussed*:**

* Updated group members on status of the game.
* Planned to have stable version of the game completed by Friday.
* Updates:
  + ***Alex:*** *Built end screens that showed displayed either “you win” or “you lost”. Included buttons however they are not yet linked to the starting sequence. Currently only the lose screen will show up and only when you hit a mine.*
  + ***Brandon:*** *Built functioning version of game map. Currently rows and columns are fixed and revealing of spaces may be buggy. Plans to continue testing and refining.*
  + ***Josh:*** *Builiding mines array, going to work with Adam to determine how to get values from his class.*
  + ***Adam:*** *Designed initial form used for starting the game. Working to get values from the user and pass them to the specified places.*

**Meeting #3:**

***Date & Location*:**

* February, 15, 2019
* Class

***Purpose*:**

* Discuss state of project and next appropriate actions.

***Topics Discussed*:**

* Added all uncommitted work to GitHub repository.
* Conducted test of gameplay.
* Discussed minor bug fixes and possible additions.
* Set hard date for February 16, 2019 to have all code ready for the final series of tests.
* Updates:
  + Game in working condition. Need to update a few bmp images and do some overall refining. Ready to begin bug testing.
  + Need to find and update all comments to support a documentation software.

**Work Split:**

* Our group divided the project into separate classes that would interact with each other with each person in charge of a specific class and any subclasses that may develop. This approach ended up with Adam being in charge of a class that was meant to initialize the game, Josh and Brandon working on classes that dealt with the specific game map that the player would see and the underlying placement of objects on that map, and Alex being in charge of designing and generating a class that would display the appropriate forms when the ending of the game was triggered and would have appropriate links to either quit or restart the game.

**Challenges:**

* **No programming experience in C#:** We chose this language however because it was similar to C++ which the group did have experience working in and it was supported by Visual Studio and more importantly .Net.
* **Little experience with graphical frameworks:** We still opted to use .Net because of its compatibility with a language that is similar to C++. Additionally, one of our group members has had experience using .Net. Other options were Qt however on initial setup we ran I into some errors and opted to use a framework that at least 1 of us had experience working in before.
* **Late formation of group:** Because our group formed on the last possible day this compressed our timeline for planning and development. To make up for lost time we maintained a constant communication throughout the whole development of the project in order to be as efficient as possible.

**Planned Features:**

* Timer
* Scoreboard/points system

**Things to Change:**

* **Form team earlier:** This is a direct response to one of the challenges we faced. If we had established our team earlier we would have had a few extra days to implement more features and conduct further testing.
* **Spend more time planning:** While our group overall did a good job of communicating what each of us planned to do. It would be nice to have a complete picture of how the project should look before we begin coding. Some things specifically would have been a standardization of how we will be documenting the code, concept drawings of all the forms to be used in the project, and other things that if standardized before hand would have prevented some re-work.