**Project 2 Retrospective: C# Group**

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

**Organization of Work**

The group decided that, because there were two distinct features to implement, it would be easiest to accomplish the objectives by splitting the group into two sub-groups. Because of this Adam and Josh worked on implementing the high score system, while Brandon and Alex worked on adding the cheat system and, after finding some deficiencies in the inherited code, ensuring that the project met the expectations of project 1. Additionally, each member of the group was responsible for testing the project individually.

**Challenges**

The largest challenge faced by the group was the timing of the project. Nearly every member of the group had a barrage of tests the week before spring break. This caused the group to work mostly during spring break. This lowered the group’s ability to coordinate as effectively as they could have otherwise. To compensate for the lack of face-to-face communication the group held discussions and planning sessions over Skype and stayed in frequent contact over GroupMe.

**Missing Features**

As noted in the meeting documentation a fix was implemented to prevent flagged tiles from revealing. While this fix worked for its intended consequence there were numerous other bugs reported by each member over groupme. Some of the bugs encountered included the game no longer triggering a win state if all bombs and only bombs were flagged, and the game freezing or crashing after either of the end game conditions were met. The bugs discovered also would only sometimes occur even if a sequence of events was duplicated multiple times the bug would only occur in some instances. Since this bug was discovered last minute we opted to not push this branch (glitchTest) to the master branch and therefore the master branch still allows flagged tiles to be flipped.

**Room For Improvement**

A more structured group environment and more firmly set duties for individual members would allow for greater efficiency and fewer cases of redundancy due to multiple people performing the same task simultaneously. Additionally finalizing the project earlier would allow for more time to diagnose and fix unexpected bugs.

**Project Log**

3/11/2019

**Location:** Skype multi-call

Brandon Pramann, Adam Soelter, Josh Vandeleuv

**Meeting outcomes:**

* *Divided into teams to work on features:*
* *Custom addition decided: scoreboards.*
* *Brandon and Alex working on cheat mode.*
* *Josh and Adam working on scoreboards.*
* *Forked Repository location established.*

3/11/2019-3/18/2019

**Location:** GroupMe chat room

Adam Soelter, Alex King, Brandon Pramann, Josh Vandeleuv

**Meeting outcomes:**

* *Tested newly implemented cheat and uncheat functions.*
* *Decided to add a cheat button as well as the hotkey options (b) for cheat and (v) for uncheat.*
* *Discussed specifics of scoreboard implementation.*
* *Pushed and bug tested scoreboard. minor issues raised and resolved.*

3/18/2019

**Location:** In-class meeting

Adam Soelter, Alex King, Brandon Pramann, Josh Vandeleuv

**Meeting outcomes:**

* Project finalized, group will begin final bug testing before due date

3/20/2019

**Location:** Groupme Chat

Adam Soelter, Alex King, Brandon Pramann, Josh Vandeleuv

**Meeting outcomes:**

* *During final check of project noticed bug causing flagged tiles to be flipped and become inactive. This causes the player to no longer be able to win the game and must either restart or intentionally lose the game.*
* *Fixed bug on branch gitTest by modifying board.py flip() function to check for flagged tiles as well as tiles with no mines. This however seemed to produce unintended consequences sometimes resulting in strange behavior of game end states.*
* *New issues:*
  + *Marking all bombs and only bombs will sometimes not cause a win game to trigger.*
  + *Flagging empty spaces, then flagging all bombs, then removing flagged empty spaces will not trigger winning game unless bomb spaces are unflagged then flagged again. NOTE: This did not always fix the issue, and it is difficult to say exactly what sequence of events will trigger this bug.*