

## **Documentation on how to run your project**

The deliverable product for our group is an executable jar file. It requires at least java6 JVM to be installed on the host computer in order to run appropriately. The product is strongly based on the traditional game minesweeper. The first screen the user sees when starting the application in the level select screen.

To run the product, execute:

```
$ java -jar SuperSweeper.jar
```

### **Level Select Screen:**

- Left-Click a level to play it [66]
- Right-Clicking anywhere should have no response [6,7,90,91]
- Levels can only be played if the level before them has been successfully completed. [1]
- Left-Clicking a level (that can be played) should bring up that level and remove the level selection screen.

### **Game Screen:**

- Should initiate to a screen with:
  - 1 Label displayed number of flags placed (initially 0) [52]
  - A timer displaying how much time remains for a completed level (should begin countdown on first click) [75]
  - The Game Grid itself, should be a rectangular set of unpressed buttons
  - 3 powerup buttons at the bottom (+1) (\\_) (^) [26,79]
- Left-Clicking on the flag label or timer should do nothing [80,92]
- Right-Clicking on the flag label or timer should do nothing [81,93]
- Left-Clicking an unpressed grid unit should expose the unit as a bomb, or a number. [12,95]
- When an unpressed unit is exposed, it should display the number of mines amongst its 8 neighbor units.
- Right-Clicking an un-pressed grid unit should plant a flag on that unit, and increment flag counter at top. [20,96]
- Left-Clicking a flagged unit should do nothing. [9,99]
- Right-Clicking a flagged unit should remove the flag, and decrement flag counter at top [8]
- Left-Clicking an exposed unit should do nothing. [23,84,85,94,98]

- Right-Clicking an exposed unit should do nothing. [34,82,83,97,100]
- Left-Clicking the (+1) power-up button should check if the player has enough score points available, and if he does then
  - Protect his next click from causing a game over. If he clicks a bomb after clicking the +1, it just flags the bomb.
  - This should also decrement his score by the value of the powerup [17,18,19,86,87,88]
- Left-Clicking the (\\_) power-up button should empower the player's next click to automatically flag all mines within a 9 grid square around the user's pointer. This should decrement the user's score by the value of the power-up
- Left-Clicking the (^) power-up button should empower the player's next click to automatically flag all mines, and expose all numbers within a 9 grid square around the user's pointer. This should decrement the user's score by the value of the power-up [74]
- Right-Clicking any of the power-up buttons should do nothing [27,32,33]
- Right-Clicking with a power-up enabled should act normally

#### MenuBar:

- There should be an Options element with subelements:
  - Level Select, Restart Level, Help, and Exit [29]
- There should be a Score element that keeps track of a user's current score during gameplay, and cannot otherwise be interacted with. Initialized to 0. [30,43,80]
- Level Select will redirect user to Level Selection screen, quitting any current games if they're in progress [49,67,76]
- Restart Level will literally restart whatever level they are currently playing, reshuffling the mines [50,59,60,62,64]
- Help will display a text box about some general information [10, 11]
- Exit will close the application [40]

#### GameLogic:

- Left-Clicking a bomb should end the game with failure. [22]
- Running out of time should end the game with failure. [22,25,77,78]
- Successfully exposing all non-minefields should end the game with success and unlock the next level. [21]
- The timer should be decremented at a natural rate [15,16]
- There is no limit to the number of flags one can plant
- Flagging a non-mine still restricts the user from exposing it, even though its not a mine

| Defect # | Defect   | Output before seed                     | Output after seed   | Suggested Correction  | White or Black | Severity | Commit #   |
|----------|--|--|---|---|----------------|----------|--|
| 1        | All levels can be accessed regardless of user's progress | User could only access currLevel +1    | User can access any level                                       | Add logic to read user's current progress to detect which level the user can play | B              | 2        | a71fdb465<br>82f9abbba<br>a5766eb4<br>aa892972<br>0494a9 |
| 2        | Timer does not reset after restarting level              | Timer resets after restarting a level  | Timer does not reset after restarting a level                   | Call resetTimer when clicking restart level                                       | B              | 2        | 3af96a239<br>663ef400f<br>c8b48f9ac<br>65f541a94<br>8500 |
| 3        | Minefield flickers on drag                               | Minefield does not flicker on drag     | Minefield flickers on drag                                      | On mouseDragged, make sure to only call repaint once                              | B              | 3        | -  |
| 4        | Minefield flickers on click                              | Minefield does not flicker on click    | Minefield flickers on click                                     | On mousePressed, make sure to only call repaint once                              | B              | 3        | -  |
| 5        | Minefield flickers on release                            | Minefield does not flicker on release  | Minefield flickers on release                                   | On mouseReleased, make sure to only call repaint once                             | B              | 3        | -  |
| 6        | Right click level select should have no effect           | Right click level select has no effect | Right click level select replaces image with "normal" grid unit | Predicate the setting of an image with which mouse button is being pressed        | B              | 3        | f4379f086<br>a8e1ba0f2<br>4998c43a<br>c7c46313<br>94e4a0 |

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| 7  | Right click release level select should have no effect | Right click level select has no effect               | Right click release performs the level select action               | Predicate the level select action with which mouse button is being pressed                | B | 3 | 2609d910f86def51668ccb3fc4b08afd4f587fb7 |
| 8  | Right click flag increments score unnecessarily        | Right clicking should only remove flag               | Right click on flag increments the score                           | Remove the increment counter code that is incorrectly placed in right-clicking-flag logic | B | 3 | 8fb315b3b0c809a6a3143641e378510fc2ffb416 |
| 9  | Left click on flagged unit shows the number            | Left-clicking flagged units should do nothing        | left clicking on flag ignores the flag and exposes the unit anyway | Add logical check to see if a unit is flagged before exposing it                          | B | 2 | b1b1a84bcf31c2db98765c7722fdb93fd23a9af9 |
| 10 | Click on help opens multiple dialogs                   | The help menuitem should bring up a single dialog    | The Help menuitem opens multiple dialogs                           | Remove the duplicate logic that caused multiple dialogs to appear                         | B | 3 | 7107e6b420c695cdcfba5bfb01d3dfc32f96c32d |
| 11 | Help dialog prints the same thing twice                | Help dialog contains text describing the game        | The Help dialog is prints description of the game twice            | Add a immutable string to the help dialogs content field and print it once                | B | 3 | 4ba6b0b4b5ff1f3578aa68c4c2184d6396c99778 |
| 12 | Exposing area exposes flagged units                    | Flagged units are uncheckable, even if they're empty | Flagged units get unchecked by expanding of empty units            | Check to see if a unit is flagged before expanding onto it and exposing it                | B | 2 | df3ee2acf000164d56195db15ad3c612c43e1c18 |
| 13 | Highscore saved even when user                         | Highscores are only saved when the                   | Highscores get saved on  | Move the save-highscore logic from onGameEnd  | W | 2 | 41179ff4789437a96f                       |

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|    | loses  | game is completed successfully                             | gameEnd, even if it was a loss                                  | to onGameVictory  |   |   | d349ce0950eee22ba241d7                   |
| 14 | Grid unit stays pressed when mouse drags off | Grid units should unpress when the cursor leaves the grid  | Grid units stay pressed if the mouse is dragged out of the grid | Implement MouseDrag Listener to unclick previous units when the cursor strays out of bounds of it | B | 2 | c99d9ba95a000edce61bc9bc91abaf80ee4a654f |
| 15 | Timer counts down by 2                       | Timer counts down by 1 per interval                        | Timer counts down 2 per interval                                | Change the decrement function from -2 to -1   | B | 1 | 776ccdc4beca18c5ad76410d48b5194685ccd306 |
| 16 | Timer counts down at double speed            | Timer should count down one second at a time               | Timer counts down at half the interval                          | Change the time interval to be one per second, not a shorter interval                             | B | 1 | 20a6ae5c344a154eda5747751702a91044b7c706 |
| 17 | Using metal detector does not cost points    | Metal detector should deduct 150 points from overall score | Metal detector deducts 0 points from overall score              | Initialize the powerup with 150 points  | B | 3 | a37e36584ffb360dff78520c44ffb1fbdd27f8a1 |
| 18 | Using missile does not cost points           | Missile should deduct 200 points from overall score        | Missile deducts 0 points from overall score                     | Initialize the powerup with 200 points  | B | 3 | c5195cbef1d9fb51d8d197aa9115a26cb6d155cb |
| 19 | Using extra life does not cost points        | Extra life detector should deduct 100 points from overall  | Extra life deducts 0 points from overall score                  | Initialize the powerup with 100 points  | B | 3 | 91e3b589a6f40f1bf083192536               |

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|    |  | score  |  |  |   |   | b73b966ff<br>7895a                                       |
| 20 | Flagging increments flag counter by 2                          | Every time a flag is placed, the flag count should be incremented by one   | Placing a flag increments the counter by 2                                 | Make sure one flag counts towards one tally on the count   | B | 3 | 821621f36<br>b4abeb6c<br>afcacd0c7<br>6dc3ac42<br>8a3843 |
| 21 | Winning does not display end game screen                       | A dialog should appear informing that the game is over & the user has won  | No dialog appears at end of game, it appears that the game has just frozen | Add some sort of dialog at the end of game, regardless of win or loss so the user is aware it is over. | B | 1 | 75068e1e<br>e1b9c256<br>53871199<br>4d25d09c<br>bc1912a7 |
| 22 | Losing does not display end game screen                        | A dialog should appear informing that the game is over & the user has lost | No dialog appears at end of game, it appears that the game has just frozen | Add some sort of dialog at the end of game, regardless of win or loss so the user is aware it is over. | B | 1 | 276469a9f<br>7bdf08264<br>66a5f1434<br>00db1e56<br>76988 |
| 23 | Left click exposed unit replaces image with "normal" grid unit | Left-clicking exposed units does nothing                                   | Left-clicking exposed units turns the unit back to unpressed               | Don't change the bitmap of gridunits after they have been exposed under any condition                  | B | 3 | 398a5933<br>65295352<br>e0db96ef7<br>231ed5f80<br>1ba4f0 |
| 24 | Initial flag count nonzero                                     | When there is a new game flag count should start at 0                      | Flag count does not start at 0   | For every new game, initialize flag count to 0.  | B | 3 | 61e28dce<br>824f3210b<br>a9c94895<br>763920e4<br>e4b6309 |

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| 25 | Game does not end when timer is up          | A "Game Over" message should appear and game panel should be disabled | "Game Over" message does not appear. Game is still playable | Check if the timer < 0, if it is call endGame()                               | B | 2 | -  |
| 26 | Only two powerups are shown on level 1      | All three powerups should be displayed for every level                | Only two of the powerups are displayed for level 1          | Change level definition so there is enough width to display all powerups      | B | 1 | 95bab9145dcfd25fc3c591ecb6a5900094a5ace5 |
| 27 | Right click extra life does give extra life | Right clicking a power up should not activate the power up            | Right clicking a power up activates the powerup             | Add a condition that checks if the mouse click event is the Left Mouse button | B | 2 | 199315586e3570d1a76581a555e10ebad3a9ff09 |
| 28 | First click can be a mine                   | The first click should never result in an automatic loss              | The first click has the potential to be a mine              | Add logic to reshuffle mines if the first click is on a mine                  | B | 1 | faa25158fd759feaaaad1ea6ce77ddc2f6149091 |
| 29 | Extra unnecessary menu items                | The Option menu should only contain 4 elements                        | The option menu now contains extra items that do nothing    | Remove the unnecessary manu elements  | B | 3 | f988d16fac93ab07191da030fd9e98b85953245  |
| 30 | Score can be negative                       | Score should always be greater than zero                              | Score can go in the negatives                               | Add a check if the score will be less than zero before removing points        | W | 2 | dc0018d02e881dad4df3f8ca5c8e2e79ea8eac56 |
| 31 | Checking empty                              | Uncovering empty  | Uncovering  | Check if the pressed unit   | W | 2 | f132ee350                                |

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|    | grid unit gives points                          | grid units should not add points to score                  | empty grid units adds points to score           | is empty, if it is, do not add any points                                     |   |   | d373b50759e617651be363110821f8a          |
| 32 | Right click missile does give extra life        | Right clicking a power up should not activate the power up | Right clicking a power up activates the powerup | Add a condition that checks if the mouse click event is the Left Mouse button | B | 3 | 199315586e3570d1a76581a555e10ebad3a9ff09 |
| 33 | Right click metal detector does give extra life | Right clicking a power up should not activate the power up | Right clicking a power up activates the powerup | Add a condition that checks if the mouse click event is the Left Mouse button | B | 3 | 199315586e3570d1a76581a555e10ebad3a9ff09 |
| 34 | Left click flag label opens a dialog box        | Left click flag label should not open a dialog box         | Left click flag label opens a dialog box        | Remove line of code which opens a dialog in GamePanel                         | B | 3 | 7910841c92d7b5e006c64eb9bf00c1d870708ae3 |
| 35 | The Frame icon is just the default java icon    | The Frame icon should be related to the game               | The Frame icon is just default java icon        | Explicitly define the Frame's icon to be a mine from the game                 | B | 3 | cadc07a5c00d5f8fcd11fd0386295bdd6b33e1f9 |
| 36 | The Frame's title just says GameFrame           | The main Frame's title should say SuperSweeper             | The main Frame's title just says GameFrame      | Explicitly define the Frame's title to say SuperSweeper                       | B | 3 | fda62065d2a15edfb1df0cf9a6c5fbafa7c770a7 |
| 37 | The executable jar spawns two                   | The executable should only spawn a single application      | The executable spawns more than one             | Remove the duplicate logic in the main() functino that creates                | B | 1 | 868f61a6ca784e92896f0ccf61               |



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|    | application windows  | window  | application window   | multiple frames  |   |   | 1acb6f779cdf1a                           |
| 38 | Not the entire gridPanel is drawn due to lack of space             | The entire grid should be visible at any given time during gameplay | Some of the grid is cut off because there is not enough room | Make sure the defineMinSize() definitions for the subpanels are large enough to give everything room to be displayed | B | 2 | f302327ffdf02471a937c8f412f979269cf39723 |
| 39 | There is empty space along one side of the GamePanel               | The GamePanel should be centered in the frame                       | The frame is larger than necessary and exposes empty space   | Make sure the gamePanel's preferred width is the right size  | B | 3 | f302327ffdf02471a937c8f412f979269cf39723 |
| 40 | Options → Exit menu item does not exit the application             | Exit menu item should terminate the application                     | Exit menu item just shrinks the screen                       | Implement exit logic when the exit menu item is pressed  | B | 1 | e944bdbd28a19666481cb6bcbe888916ee8f0784 |
| 41 | The timer label is drawn incorrectly                               | The timer label has no extra 0s in it                               | The timer label has preceding extra 0s                       | Ensure the timer is formatted to now show extra 0s   | B | 2 | 995196c920933a4c09937b170bfa6d724687729b |
| 42 | The default [X] button on the JFrame does not exit the application | When the user presses the [X] the application should terminate      | Application does not terminate when the user presses [X]     | Change the ON_CLOSE operation of the Game Frame  | B | 1 | 1cb237c48226721731d51765b77e6225e19f01c5 |

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| 43 | The score label of the menu bar is spelled scare       | Score should be spelled correctly                           | Score is spelled scare, which is incorrect                          | Change the string scare to score  | B | 3 | 9127bee18d5a17f6735a32802688809273e4afb3 |
| 44 | Encapsulation of GamePanel is not maintained           | Variables should not be visible directly from other classes | Variables are publicly accessible, so may be improperly manipulated | Change variable scope to private, and if they're needed elsewhere implement getters and setters | W | 2 | 8f5131c135729079db56f088dce30230b7895ec2 |
| 45 | Encapsulation of LevelSelectionPanel is not maintained | Variables should not be visible directly from other classes | Variables are publicly accessible, so may be improperly manipulated | Change variable scope to private, and if they're needed elsewhere implement getters and setters | W | 2 | bb8da5bf494b9463b9136f258a4711505de84f05 |
| 46 | Encapsulation of GameState is not maintained           | Variables should not be visible directly from other classes | Variables are publicly accessible, so may be improperly manipulated | Change variable scope to private, and if they're needed elsewhere implement getters and setters | W | 2 | a8deff2916431af22504b66ed99ecdf057845682 |
| 47 | Encapsulation of GridPanel is not maintained           | Variables should not be visible directly from other classes | Variables are publicly accessible, so may be improperly manipulated | Change variable scope to private, and if they're needed elsewhere implement getters and setters | W | 2 | 23ab51a99822ed38b4a4f232593566a9aa9e0d12 |
| 48 | Utility class  | Utility class is final                                      | The Utility class   | Make the class final, and   | W | 3 | -  |

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|    | should not be instantiable or inheritable  | and cannot be instantiated  | could be instantiated  | create a private constructor   |   |   |  |
| 49 | The Options → Level Select menu item resets the level                                | The Options → Level Select menu item takes the user back to the level select screen | The Options → Level Select menu item resets the level                                | Implement the menu item's action listener to change the screen to the level selection panel      | B | 1 | 9ece19aa<br>77c32115<br>8c016bad<br>9e4af67c1<br>527b760 |
| 50 | The Options → Restart Level menu item takes the user back to the level select screen | The Options → Restart Level menu item should restart the current level              | The Options → Restart Level menu item takes the user back to the level select screen | Implement the menu item's action listener to reset the level to its original state               | B | 2 | 9ece19aa<br>77c32115<br>8c016bad<br>9e4af67c1<br>527b760 |
| 51 | Dragging a GridUnit on level select changes its state to flagged.                    | Dragging a GridUnit on level select should do nothing                               | Dragging a GridUnit on level select changes its state to flagged.                    | Override dragging action listener to do nothing.   | B | 2 | bf0f3dbc7<br>2792cfd1b<br>a164f6267<br>411d1c57<br>529d4 |
| 52 | Game initializes with game units already flagged                                     | Game should start with all units in their "normal" state                            | Game starts with some of the units already flagged                                   | When creating the initial game, populate the game with only mines and "normal" grid unit bitmaps | B | 2 | 1571b50c<br>447f6eb44<br>a3a611e1<br>cc689da9<br>da2850b |
| 53 | Many classes contain unused imports  | All imports are utilized somewhere in the code                                      | Some imports are not used anywhere in the code, and are therefore                    | Remove unused imports  | W | 3 | -  |

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|    |   |  | unnecessary   |   |   |   |  |
| 54 | Bonus level time is negative                                    | Time is always non-negative in the level properties file                                     | Time for the bonus level appears negative                               | Change the level definition for the bonus level to be positive                      | W | 1 | 7c8058b233fe4b0c5c03b4632f28489bf7099f6f |
| 55 | Bonus level time is not an integer                              | Time should always be an integer in the level properties file                                | Time for the bonus level is defined as a float                          | Change the level definition for the bonus level to be a positive integer            | W | 1 | 7c8058b233fe4b0c5c03b4632f28489bf7099f6f |
| 56 | Bonus level number of mines is greater than the number of units | There should always be less mines than available grid units in the level properties file     | There are more mines than spaces, so the user can't win (infinite loop) | Change the level definition for the bonus level to have fewer mines than grid units | W | 1 | 7c8058b233fe4b0c5c03b4632f28489bf7099f6f |
| 57 | Bonus level grid height is not an integer                       | There grid height should always be a positive integer in the level properties file           | The grid-height is not an integer so the level can't load               | Change the bonus level properties file to have an integer value grid height         | W | 1 | 7c8058b233fe4b0c5c03b4632f28489bf7099f6f |
| 58 | Bonus level grid width is not an integer                        | There grid width should always be a positive integer in the level properties file            | The grid width is not an integer so the level can't load                | Change the bonus level properties file to have an integer value grid width          | W | 1 | 7c8058b233fe4b0c5c03b4632f28489bf7099f6f |
| 59 | Clicking Reset Level does not reshuffle the mines               | Reset level function should shuffle around the mines so they are not always at the same spot | Pressing Reset Level does initiate shuffling of mines                   | Use a random mine generator to generate the mines in different locations            | B | 2 | 6ceb2be024aa047814c3c90b8276414c7ccfb40e |

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| 60 | Clicking Reset Level does not remove flags                            | Reset Level should reset all units to "normal" state   | Reset level changes all units to "normal" state except flagged units                 | Reset all units to "normal" state disregarding their current state        | B     | 2 | 4de9ff307<br>c932411d<br>c27615a3<br>48ef92cf2<br>d0687e |
| 61 | Winning a game does not give bonus points                             | Each level should have a bonus point associated with it in the level properties file, that the user receives for success | The user does not receive the bonus points from winning                              | Add the level's bonus score to the user's score if he completes the level | B     | 2 | 41706921<br>50a7e60b<br>6251eb07<br>3b81e3c6<br>7d3ae0cc |
| 62 | Clicking Reset Level does not reset the score                         | Resetting the level should set the score back to 0   | Resetting the level does not change the score from what it was                       | Add the logic to reset call to also change the score back to 0            | B     | 2 | -  |
| 63 | Right clicking on powerup displays empty dialog box                   | Right clicking on a powerup should not do anything   | Right clicking on a powerup display an empty dialog box                              | Remove mouselistener from powerup buttons                                 | B     | 2 | 19931558<br>6e3570d1<br>a76581a5<br>55e10eba<br>d3a9ff09 |
| 64 | Clicking ResetLevel changes the object's states, but not their images | Restarting a level changes all the images back to unpressed  | Restarting a level changes what the units states are, but all their images are mines | Reset the image to unpressed, not mines if the level is restarted         | B & W | 1 | 314d4c61f<br>30c24e9f1<br>3ea5db76<br>ceb48fb91<br>5802a |
| 65 | There is an unused class  | Unused Classes should be removed   | There is an unused Class   | Remove the unnecessary class definition                                   | W     | 3 | 862a3f7ba<br>10bcffe3fd                                  |

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|    | Called Sprite, that is never implemented                                    |  |   |   |   |   | 8737fe792b86c88ce0654                    |
| 66 | Clicking a level on level select actually starts the next level             | Clicking level x started level x   | clicking level x started level x+1  | Remove the faulty preincrement logic when selecting a level | W | 1 | a2b18065b9b75244692d68f35d5ed231adb77ea3 |
| 67 | Exiting a game to level select sets the score menu item to a non-zero value | Score label is always set to zero when not in game                         | Score label is some random number when not in game                                  | Change the faulty number back from 481516234 to 0           | B | 3 | 8ac6cbb1d29590e1d4b523de04e772db5fe29113 |
| 68 | There exists unused images in the package                                   | Only images that are necessary are shipped to the client to preserve space | There exists unused resources in the jar that make the package unnecessarily larger | Remove unused Images  | W | 3 | 78027aa1e139f749520b84539905b70a0dcc14b2 |
| 69 | There exists outdated powerup definitions and logic                         | Only current code should be in the deliverable                             | There exists old/outdated code polluting the powerup class                          | Remove unused/outdated code from powerup class              | W | 3 | 99eae84b68051165e7619848f7ac9dfd4039097c |
| 70 | There exists unused level definitions                                       | Only implemented level definitions should be included in the deliverable   | There exists level definitions that had been used for debugging purposes in the     | Removed the unused debugging level definitions              | W | 3 | 355b23e01f513ba14ed8e418b80661d2e8cbba42 |

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|    |   |   | deliverable   |   |   |   |  |
| 71 | There are unused label definitions in GameFrame                   | GameFrame should only contain labels that are used within the deliverable                   | GameFrame contains unused labels that cause clutter in the class      | Remove unused label definitions and logic                 | W | 3 | 1e4c7763f<br>e80d3fd34<br>301b2ebd<br>11fa728da<br>46c73 |
| 72 | There exists unused GridUnit state variables                      | GridUnit should only contain state variables that are used within the deliverable           | GridUnit contains variables that are no longer being used or accessed | Remove unused state variables from GridUnit class         | W | 3 | 88468ea9<br>2ea6147e<br>a48cb63a<br>b43397fec<br>42d786e |
| 73 | GridUnit has getters for global variables (redundant)             | Since all of the variables within GridUnit are public, getters are redundant                | GridUnit contains redundant code                                      | Remove getters from GridUnit class                        | W | 3 | a0680d5c<br>46d55e00<br>696425be<br>89935652<br>db44ce19 |
| 74 | Missile powerup initially set to true. Game starts with a powerup | When the game starts, all powerups should be set to false and are only obtained with points | Game starts with the Missile powerup as active                        | Set all powerups to false initially                       | B | 2 | 909a15cb<br>2ca93480<br>d5a70589<br>14e60f2c3<br>76e28e8 |
| 75 | Timer does not start on first click                               | Timer should only start counting down when the user first clicks                            | Timer starts when the level has loaded                                | Implement logic to stall the timer until first click      | B | 1 | 69022026<br>75784bd6<br>87302cbf9<br>e0a1af80c<br>a1d142 |
| 76 | Pressing Options → Level Select does not remove                   | Pressing on Level Select should switch the user to a new                                    | Pressing Level Select appends the Level Select                        | Kill the current panel and open the Level Selection Panel | B | 2 | 30e241e0<br>9037e60e<br>033be387                         |

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|    | the current game from the game                           | screen   | panel to the right of the screen                                  |   |   |   | 5f49cbf00ba374ad                         |
| 77 | When time runs up, the timer label displays strange text | Timer should just display 00:00 when time runs out | Timer displays strange character when time runs out               | Change the<br>timeLabel.setText("asfl;jk asdf"); to<br>timeLabel.setText("0:00")<br>; | B | 2 | 824ba2359de07ec7d3b11ec34fb9708ab4bcea13 |
| 78 | Timer is not stopped, even if game is over               | Timer should stop counting down when the game ends | The timer keeps counting down, even if a mine is pressed          | Stop the timer counting down if the game has finished                                 | B | 1 | 824ba2359de07ec7d3b11ec34fb9708ab4bcea13 |
| 79 | There is an extra powerup button that does nothing       | There should only be three powerup buttons         | There's a fourth button that says help, that does nothing         | Remove the extra button definitions   | B | 2 | 50ebe81ebfc886e79a126605de6e8db0a6d1fe50 |
| 80 | Left releasing the score resets the score to zero        | Left releasing the score label should do nothing   | Left releasing on the score label resets the user's score to zero | Remove actionlistener from label  | B | 2 | e5e9320b21bdde7fb82a602867aaf4766b7153b8 |
| 81 | Pressing on flag label resets the flag count to zero     | Pressing the flag label should do nothing          | Pressing on the flag label resets the user's score to zero        | Remove actionlistener from label  | B | 2 | 58d05c7d07d73501e4f586a02535cbc4a941aed1 |
| 82 | Mouse click event on score label resets it to 0          | Mouse click event on score label should do nothing | Mouse click event on score label resets it to 0                   | Remove logic which resets the score in GamePanel                                      | W | 2 | 39c56e76fe65f0f8893a25e8bc0a94c339       |



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|    |  |   |  |  |   |   | 245733   |
| 83 | Right click<br>release an empty<br>grid unit in the<br>game panel<br>increments the<br>score | Right click release<br>an empty grid unit<br>should do nothing                                      | Right click<br>release an empty<br>grid unit adds 1<br>to the score        | Add logic in GameState<br>to check that if the unit is<br>exposed do nothing | B | 2 | 978dd205<br>8eee9c44<br>ccd7efca8<br>f45024114<br>19374a |
| 84 | Left pressing the<br>score resets the<br>score to zero                                       | Left pressing the<br>score label should<br>do nothing   | Left pressing on<br>the score label<br>resets the user's<br>score to zero  | Remove actionlistener<br>from label  | B | 2 | 09dbd957<br>6e8de204<br>501498dd<br>def96f77a<br>8484a32 |
| 85 | Right pressing the<br>score resets the<br>score to zero                                      | Right pressing the<br>score label should<br>do nothing  | Right pressing on<br>the score label<br>resets the user's<br>score to zero | Remove actionlistener<br>from label  |   |   | e5e9320b<br>21bdde7fb<br>82a60286<br>7aaf4766b<br>7153b8 |
| 86 | Missile power up<br>opens help dialog<br>on click  | Missile powerup<br>should enable the<br>corresponding<br>powerup without a<br>popup dialog          | Popup help<br>dialog appears<br>on powerup click                           | Remove call to help<br>dialog on press of<br>powerup                         | B | 3 | 4a04b0e7<br>02d40e7b<br>d4d78eed<br>9917e436<br>a04bdb86 |
| 87 | Mine detector<br>opens up help<br>dialog on click  | Mine detector<br>powerup should<br>enable the<br>corresponding<br>powerup without a<br>popup dialog | Popup help<br>dialog appears<br>on powerup click                           | Remove call to help<br>dialog on press of<br>powerup                         | B | 3 | 4a04b0e7<br>02d40e7b<br>d4d78eed<br>9917e436<br>a04bdb86 |
| 88 | Extra Life opens<br>up help dialog on  | Extra life powerup<br>should enable the   | Popup help<br>dialog appears   | Remove call to help<br>dialog on press of                                    | B | 3 | 4a04b0e7<br>02d40e7b                                     |

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|    | click   | corresponding powerup without a popup dialog                           | on powerup click  | powerup   |   |   | d4d78eed<br>9917e436<br>a04bdb86                         |
| 89 | Application is positioned off-center                          | GameFrame should be positioned in the center of the screen             | GameFrame is positioned off-center  | Remove the +20 on positioning the GameFrame             | B | 2 | cd791745<br>1465d829<br>3b96a194<br>62ce0e8a<br>9e14a109 |
| 90 | Right mouse click release on timer label resets timer to 2:00 | Releasing the right mouse button on the timer label should do anything | Releasing the right mouse button on the timer label resets the time to 2:00 | Remove logic to reset timer in GamePanel mouse listener | B | 2 | 3c000cffa<br>b65f5dabf<br>2d98713d<br>acfb0a746<br>e8b87 |
| 91 | Left mouse click release on timer label resets timer to 2:00  | Releasing the left mouse button on the timer label should do anything  | Releasing the left mouse button on the timer label resets the time to 2:00  | Remove logic to reset timer in GamePanel mouse listener | B | 2 | 3c000cffa<br>b65f5dabf<br>2d98713d<br>acfb0a746<br>e8b87 |
| 92 | Left mouse click on timer label resets timer to 2:00          | Clicking on the timer label should do anything                         | Clicking on the timer label resets the time to 2:00                         | Remove logic to reset timer in GamePanel mouse listener | B | 2 | 72faed9a9<br>39914c77<br>41f6fd194<br>33de6073<br>ba261a |
| 93 | Right mouse click on timer label resets timer to 2:00         | Right clicking on the timer label should do anything                   | Right clicking on the timer label resets the time to 2:00                   | Remove logic to reset timer in GamePanel mouse listener | B | 2 | 72faed9a9<br>39914c77<br>41f6fd194<br>33de6073<br>ba261a |
| 94 | On left mouse button release                                  | On left mouse button release action on a                               | On left mouse button release  | Remove adding points logic from grid unit if it         | B | 2 | 520eb852<br>8090e9b9                                     |

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|    | action on a numbered grid unit in the game panel increments the score                | numbered grid unit in the game panel should not do anything since it has already been exposed   | action on a numbered grid unit in the game panel adds points to the score                             | has already been revealed   |   |   | 5f2aff4fcef<br>df9563861<br>fb7f                         |
| 95 | Left release score label resets score to 0   | Left release score label should do nothing  | Left release score label resets score to 0  | Remove actionlistener from score label in GamePanel                       | W | 2 | 09dbd957<br>6e8de204<br>501498dd<br>def96f77a<br>8484a32 |
| 96 | Right mouse click on unchecked GridUnit resets timer to 2:00                         | Right clicking on an unchecked grid unit should only flag the GridUnit  | Right mouse click on unchecked GridUnit resets timer to 2:00  | Remove logic to set time to 2:00 in GameState                             | B | 2 | 3d8be5ec<br>92979df63<br>7874d848<br>1658e34a<br>309dc58 |
| 97 | Right mouse button press a numbered grid unit in the game panel increments the score | On right mouse button press action on a numbered grid unit in the game panel should not do anything since it has already been exposed | On right mouse button press action on a numbered grid unit in the game panel adds points to the score | Remove adding points logic from grid unit if it has already been revealed | B | 2 | 8fb315b3b<br>0c809a6a<br>3143641e<br>378510fc2<br>ffb416 |
| 98 | Left clicking on an exposed grid unit increments the timer                           | Left clicking on an exposed GridUnit should not do anything   | Left clicking on an exposed grid unit increments the timer by 30 seconds                              | Remove incrementation of timer logic from actionlisteners implementation  | B | 2 | f31a1cdc9<br>781b3dca<br>2d78bb1c<br>2508c798f<br>c9c1d5 |
| 99 | Left mouse button  | On left mouse button  | On left mouse   | Remove incrementing   | B | 2 | 667a0a4d   |

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|     | press a flagged grid unit in the game panel increments the timer | press action on a flagged grid unit in the game panel should do nothing | button press action on a flagged grid unit in the game panel increments the timer | the timer logic from clicking on a flagged GridUnit                      |   |   | e37f2f847<br>b20a4211<br>9105f9668<br>f82b62             |
| 100 | Right clicking on an exposed grid unit increments the timer      | Right clicking on an exposed GridUnit should not do anything            | Right clicking on an exposed grid unit increments the timer by 30 seconds         | Remove incrementation of timer logic from actionlisteners implementation | B | 2 | f62467698<br>92c37fc5f<br>efaea3f62<br>1532fd0f4<br>5f8b |