**Bomber Game Bug Report**

**Bug 1:** If the user misses one bomb, the program does not let the user drop another one. If a bomb did not touch to a building, it falls infinitely. Since one bomb can not be thrown if another one is still active, users can not throw another bomb after they missed one. Instead, the bomb should be deleted after it reaches to the lowest point on the canvas, so that users can drop other bombs.

* if self.position.Y> CANVAS\_HEIGHT:

self.falling = FALSE

I added this condition statement to the move() function, so that whenever the position of the bomb passes the height of the canvas, users can drop other bombs.

**Bug 2:** In the beginning of each round, the program automatically creates more buildings that it should create. There’s always one building whose only small portion of it is visible because it is out of the canvas. Instead, all buildings should be fully visible on the screen, so that users can actually win a round.

* for building\_num in range(0, CANVAS\_WIDTH//SPACING -1 ):

In the actual code, the red part was 1200//SPACING. However, the width of the canvas is smaller than 1200; therefore, the program created an additional building that is outside of the canvas. I added CANVAS\_WIDTH, which is 1000, and divide it to SPACING, which is 100, to create 10 buildings. With this way, all buildings are visible. Yet, -1 Is used at the end of the statement in order to solve another bug. That reduces the amount of building to 9.

**Bug 3:** The user can never hit the building that is located at the right side of the canvas because of its position. It is very close to the point where plane starts its tour, so the program does not let user to hit that building. Instead, the users should be able to hit that building in order to win the round. So, either the starting point of the plane should be changed or amount of buildings must alter.

* for building\_num in range(0, CANVAS\_WIDTH//SPACING -1 ):

I added -1 to that part of the code in order to allow users to hit all of the buildings. Normally, the program generates 10 buildings. With my addition, 9 buildings are created, but their positions are perfect so that users can hit all of them. One less building creates a free space to the at the right of the screen.

**Bug 4:** Heights of buildings never be zero. After each hit, heights decrease successfully, yet whenever the height should be zero, a small rectangle stays at the bottom of the canvas. From what I experienced, this does not affect the game, yet it is still a bug. Instead, there should be an empty space whenever the user manages to destroy the building totally.

* if(self.height>0):

self.main\_rect = self.canvas.create\_rectangle(self.x, CANVAS\_HEIGHT, self.x + self.width, CANVAS\_HEIGHT-self.height, fill="brown")

I added this long statement into a condition statement. In shrink() function, the buildings should be deleted, and with this addition to the code, the program successfully erases every part of buildings whenever they are hit by the user.

**Bug 5:** Users can not win even if they destroy all the buildings. Plane does not land, so users lose each round. Instead, the plane should land successfully if users manage to destroy each building. They should be able to win the round and go to the next round.

* if(self.height<=0):

return False

I added this code into the is\_inside() function. Without this addition users can not win the round even though there’s no buiding left on the screen. This statement returns false because there’s no building.

* if plane\_body\_bottom.getY()>=CANVAS\_HEIGHT and …

I changed this operator in check\_plane() function. Previously it stated that plane body must be equal to canvas height, yet I realize that they do not be exactly equal. Therefore, I changed the operator to make sure that plane lands successfully after the bottom of its body passes the height of the canvas. Without this addition, plane does not land and the program does nothing infinitely.

**Note:** If the remaining height of a building is five or less program sometimes does not delete it. Hence, users can not pass the round. I could not find a way to fix it.