POST-MOTERM

WHAT WENT WELL

1.Cllision between sprites

2.Enemies can shoot toward helicopter(rotate follow your mouse)

3.Animations played well

4.While attacked, the fighters or helicopter will change their images' color to yellow,which can better show the attack.I use Surface.get_at() and Surface.set_at() function to achieve that.

5.I think my menu and buttons are beautiful and cool

WHAT WAS DIFFICULT

1. Change the alpha of the image. I have tried the function set_alpha(), but it can not work. Finally, I use get_at() and set_at() functions to modify each pixel's ARGB and solve the problem

2. Change the RGB of iamge. It is similar to the above problem. I wanted to change the color to yellow when the fighters and helicopter are being attacked.

3. Make the shells shooting toward helicopter accurately. It is the largest difficulties I met in the project. At the beginning, I calculate the direction the shell towards with the cursor's position and the enemy's position. Then,use the direction to figure out the x and y speed of the shell.However, it have some error. I debugged for a long time and finally found the reason. It is because my variables centerx and centery are int type.But the variables speedx and speedy are decimal. Then at every frame, it will produce a bit error when I convert the result to int. Therefore, after several frames, the error will be accumulated and become larger.

   My solution is: set two variables realx and realy with the type double. Use them to calculate and record the real position of the shell. And before I have to draw the image, I assign them to centerx and centery. With this methord, I can make the error range within one pixel.

HOW WOULD I DO THINGS DIFFERENTLY NEXT TIME

In this game, the action of the enemies are randomly except the shooting toward helicopter. Next time, I think I will make the game's artificial intelligence better.

WHAT I LEARNED

I learn so much in this project:

1. How to design the game before programming.

2. How to manage my code.

3. How to update my game gradually and finally arrive at the complete game.

4. Certainly, how to programming game using pygame.