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Final Project Report

1. A brief description of the game and its URL where you download the game program from.

Game Description: The game is called Block Fortress and a Arkanoid game. In the game, the player controls the game's "paddle" to hit a ball that will bounce against a number of bricks, causing it to break and disappear. Player also tries to prevent a ball from falling from the playing field. When all the bricks are gone, the player goes to the next level, where another pattern of bricks appears.

Program: You can download the game program [here](http://www.pygame.org/project/2717/4458).

2. A list of modifications you made to the original game program. For each modification, include a very brief description of which part of the code was changed.

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| # | Modification | Modification Description | Modification Location |
| 1 | Python 3.6 | The original code was written in Python 2.X. My computer had Python 3.6. Therefore, program wouldn’t run as there were errors. | Any files that included print functions, exceptions, cPickle/Pickle. |
| 2 | Window Size | The original game window was just too big to fit completely on my screen, so I changed the window dimensions. | - constants.py |
| 3 | Name of Game | Changed name from Block Fortress to Block Breaker. The change can be seen on the menu and game window title. | - Game class in main.py  > run()  - constants.py  - BuildExe class in pygame2exe.py  > \_\_init\_\_() |
| 4 | Menu | Changed the Menu Options, and menu background image. | - image/background-hd.png  - Menu class main.py |
| 5 | Playing Field/ Background | In the original game’s playing field, it was restricted inside the two pillars in the game. I changed it so it can go from the scoreboard all the way to the right border of the window. | - image/background2-hd.png  - class Game in main.py  >\_\_init\_\_()  - constants.py |
| 6 | Scoreboard/ Scoring Display and Algorithm | I made it scoreboard section bigger. I changed how the scoreboard displayed the total score, the combo hit point and the number of combo hits. Changed the scoring algorithm. | - class Game in main.py  >\_\_init\_\_()  > loading\_init()  >draw()  >lost()  - Ball class in ball.py  >combo\_done()  >check\_and\_handle\_block\_collision()  - Block class in block.py  >calculate\_score\_for\_hit() |
| 7 | New levels | Created all new levels with completely new block layout. | - levels folder, 1-10 |
| 8 | Add two power-ups/ power-up algorithm | Add two new power-ups. The Extra Life power-up gives you an extra life but you can only have 5 lives max. The Extra Point power-ups give you 100 extra points. Created new power-up images for each new power-ups. I changed the algorithm for when power-ups drops. | - Game class in main.py  >\_\_init\_\_()  >create\_powerup()  >add\_life()  >add\_extrapoint()  - ExtraLife class in powerups.py  - ExtraPoint class in powerups.py  - ResourceManager class in ResourceManager.py  > \_\_load\_resource\_by\_key()  - Block class in block.py  >powerup\_dropped() |

3. Either include a copy of your program in the report, or attach it separately in the email.

A copy of my program will be attached to the email.