

Within the logbook:

- A list of work completed is to be identified such as:
 - *Completed the main menu function*
 - *Includes a login input and checks against a list of users*
 - *Added in some colours to the main menu function*
 - *Imported colorama library*
- Challenges or achievements:
 - **Achievement:** *Issues with user input have been solved by checking if it is alphabetical.*
 - **Challenge:** *Using the colorama library of code and attaching it to all documents to be submitted to work properly*
- References and links that are vital to the development of the project
 - *Geeks For Geeks - Dictionaries* - <https://www.geeksforgeeks.org/python-dictionary/>
 - *Images can be included to demonstrate the work completed or highlight issues*

Date	Work Completed	References / Links
02/01/22	<ul style="list-style-type: none"> ● Looked through pygame tutorials (Which are referred to, multiple times throughout the development of this project) 	Pygame links: https://coderslegacy.com/python/python-pygame-tutorial/ https://www.pygame.org/docs/ref/pygame.html
06/01/22	<ul style="list-style-type: none"> ● Experimented with placing objects in a grid ● Researched classes <p>Achievements</p> <ul style="list-style-type: none"> ● Created a prototype resizeable 5x5 grid 	Python classes: https://www.learnpython.org/en/Classes_and_Objects https://www.geeksforgeeks.org/python-classes-and-objects/
01/02/22	<ul style="list-style-type: none"> ● Adjusted grid assignment method in the prototype ● Created draft of gantt chart <p>Challenges</p> <ul style="list-style-type: none"> ● Problem with variable assignments ● Problem with the list that stored the grid squares 	
02/02/22	<ul style="list-style-type: none"> ● Removed some unnecessary variables ● Fixed variable issues ● Started work on detecting when grid squares are clicked by mouse input 	
03/02/22	<ul style="list-style-type: none"> ● Worked on mouse selection 	Detecting mouse input:

```

mouse = pygame.mouse.get_pos()
for event in pygame.event.get():
    if event.type == QUIT:
        pygame.quit()
        sys.exit()
    elif event.type == pygame.MOUSEBUTTONDOWN:

```

04/02/22

- Tested mouse selection by drawing boxes
 - Fixed box selection
- Challenges**
- Multiple boxes being selected when one is clicked
- Achievements**
- When each grid is clicked, its coordinates are returned

Testing with rectangles:

```

pygame.draw.rect(screen, (255, 0, 0), (square[0], square[1], xinterval-1, yinterval-1))

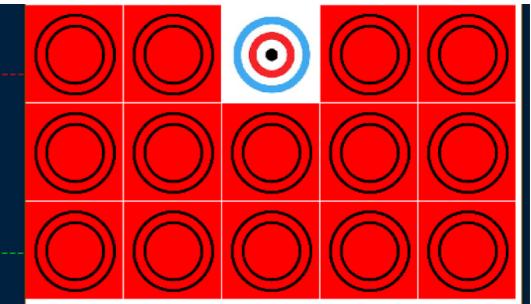
if square[0] < mouse[0] < square[1] and square[2] < mouse[1] < square[3]:
    if click == True:
        print("CLICK! (item.pos)") #FLAG-----
        print()

square in grid:

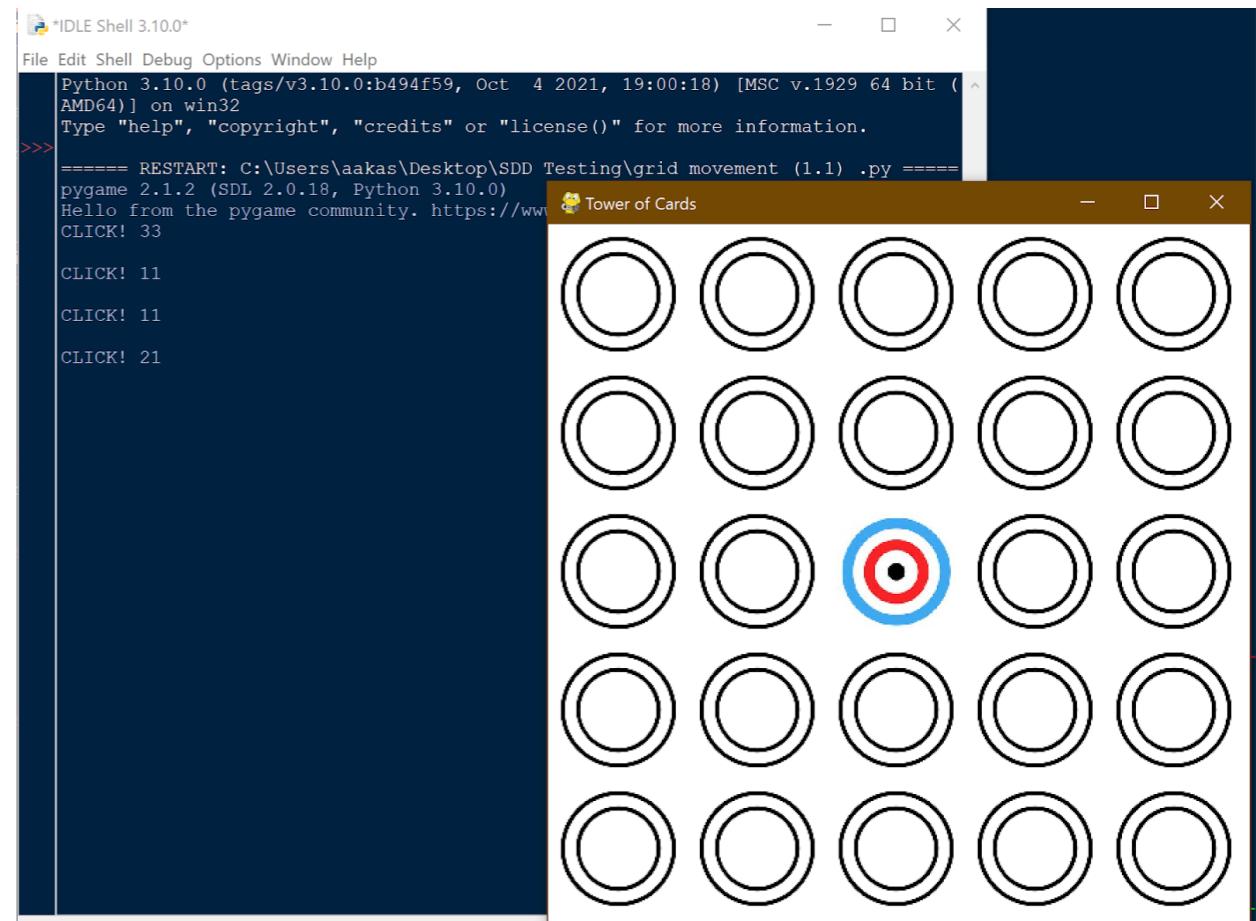
#assign image files depending on square.squareElement.cardName:
match square.squareElement.cardName:
    case 'image':
        square.squareElement.display = image
    case 'target':
        square.squareElement.display = target
    case _:
        print("----- no image file uh oh -----")

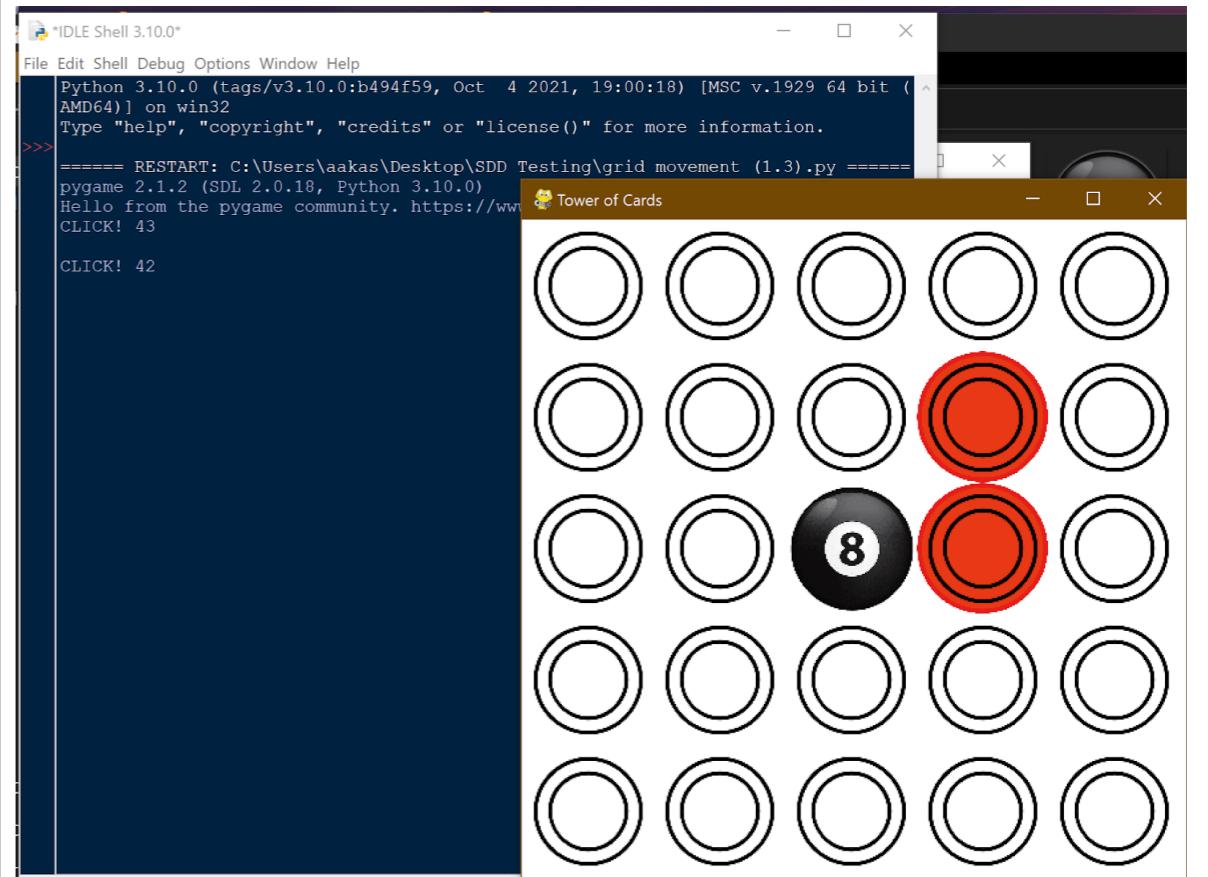
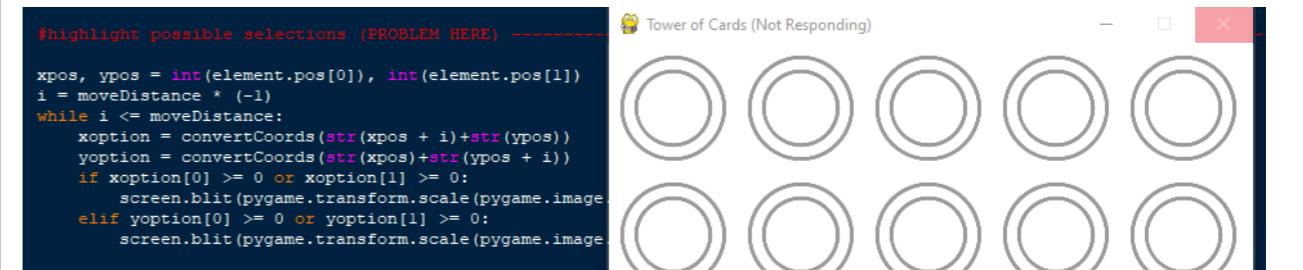
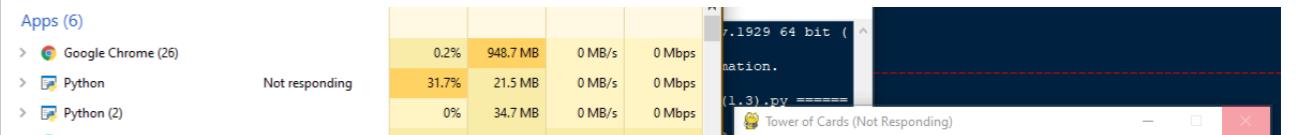
screen.blit(square.squareElement.display, convertCoords(square.pos))

```

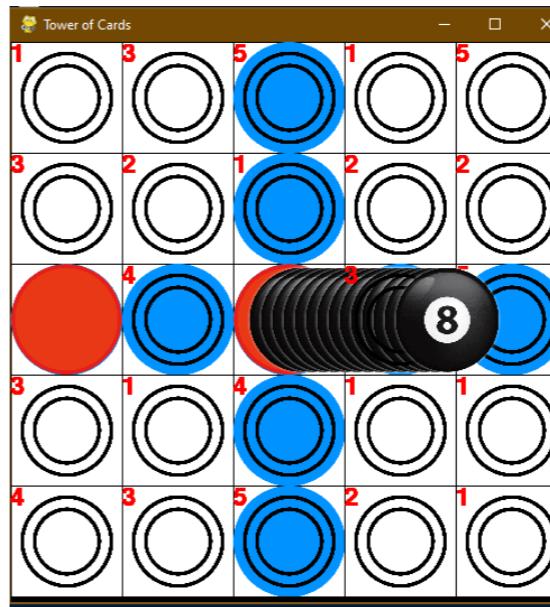


Grid Selection:

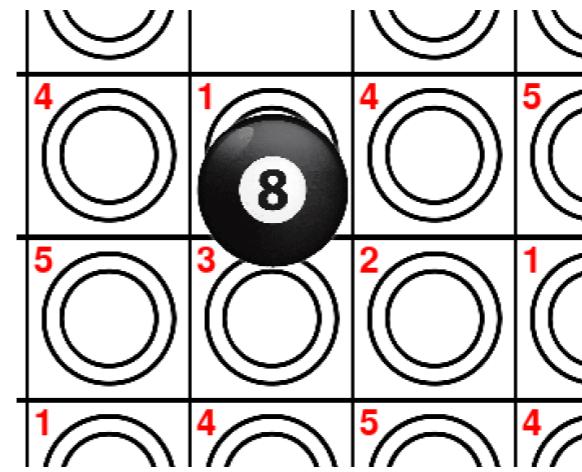


09/02/22	<ul style="list-style-type: none"> Worked on visual confirmation of selection (highlighting clicked grid squares) 																															
10/02/22	<ul style="list-style-type: none"> Worked on selecting squares Prevented users from selecting the same square twice. <p>Achievements</p> <ul style="list-style-type: none"> Code allows the user to select two grid squares, and highlights them both on click. On third click, both objects are deselected. 	<p>Two objects selected:</p>  <pre> *IDLE Shell 3.10.0* File Edit Shell Debug Options Window Help Python 3.10.0 (tags/v3.10.0:b494f59, Oct 4 2021, 19:00:18) [MSC v.1929 64 bit (AMD64)] on win32 Type "help", "copyright", "credits" or "license()" for more information. >>> ===== RESTART: C:\Users\akas\Desktop\SDD Testing\grid movement (1.3).py ===== pygame 2.1.2 (SDL 2.0.18, Python 3.10.0) Hello from the pygame community. https://www.pygame.org CLICK! 43 CLICK! 42 </pre>																														
11/02/22	<ul style="list-style-type: none"> Worked on validating movement selection Added a temporary limit of only allowing the user to move two spaces at a time Adjusted selection function so that the first click is always the user character (in this case, the 8 ball image) Highlighted possible selections after movement <p>Challenge</p> <ul style="list-style-type: none"> Code for highlighting valid movement causes program to 'not respond' : 	<p>Not responding:</p>  <pre> highlight possible selections (PROBLEM HERE) ---- xpos, ypos = int(element.pos[0]), int(element.pos[1]) i = moveDistance * (-1) while i <= moveDistance: xoption = convertCoords(str(xpos + i)+str(ypos)) yoption = convertCoords(str(xpos)+str(ypos + i)) if xoption[0] >= 0 or xoption[1] >= 0: screen.blit(pygame.transform.scale(pygame.image elif yoption[0] >= 0 or yoption[1] >= 0: screen.blit(pygame.transform.scale(pygame.image </pre>																														
13/02/22	<ul style="list-style-type: none"> Simplified some variables and lists Researched causes for the 'not responding' message <ul style="list-style-type: none"> Most likely due to high CPU usage 	<p>Investigating possible cause:</p> <p>https://www.makeuseof.com/tag/7-common-reasons-why-your-system-is-irresponsive-how-to-solve-them/</p>  <table border="1"> <thead> <tr> <th>Apps (6)</th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>> Google Chrome (26)</td> <td>0.2%</td> <td>948.7 MB</td> <td>0 MB/s</td> <td>0 Mbps</td> <td>7.1929 64 bit (</td> </tr> <tr> <td>> Python</td> <td>31.7%</td> <td>21.5 MB</td> <td>0 MB/s</td> <td>0 Mbps</td> <td>ation.</td> </tr> <tr> <td>> Python (2)</td> <td>0%</td> <td>34.7 MB</td> <td>0 MB/s</td> <td>0 Mbps</td> <td>(1.3).py =====</td> </tr> <tr> <td>-</td> <td>0.0%</td> <td>112.0 MB</td> <td>0 MB/s</td> <td>0 Mbps</td> <td>Tower of Cards (Not Responding)</td> </tr> </tbody> </table>	Apps (6)						> Google Chrome (26)	0.2%	948.7 MB	0 MB/s	0 Mbps	7.1929 64 bit (> Python	31.7%	21.5 MB	0 MB/s	0 Mbps	ation.	> Python (2)	0%	34.7 MB	0 MB/s	0 Mbps	(1.3).py =====	-	0.0%	112.0 MB	0 MB/s	0 Mbps	Tower of Cards (Not Responding)
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15/02/22	<ul style="list-style-type: none"> Worked on grid selection <p>Achievements</p>	<p>http://www.marinamele.com/7-tips-to-time-python-scripts-and-control-memory-and-cpu-usage</p> <p>Current Grid:</p>																														

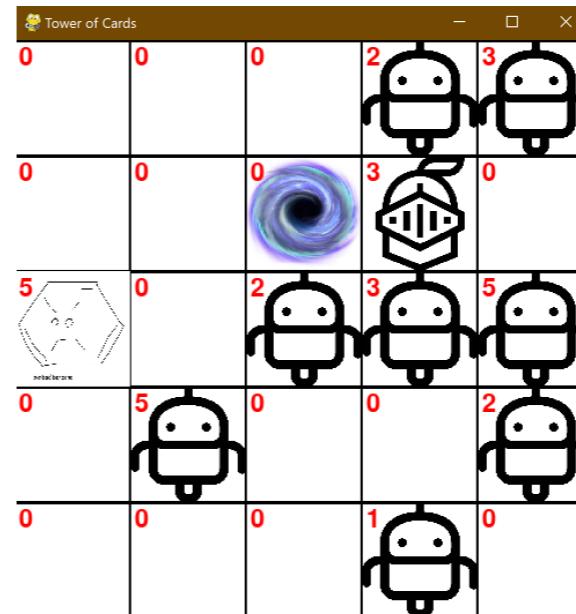
	<ul style="list-style-type: none"> Fixed issue by simplifying a section of code and moving it to the game loop Created a visual grid around the objects Finished grid object selection 	
16/02/22	<ul style="list-style-type: none"> Worked on object movement and movement animation 	
17/02/22	<ul style="list-style-type: none"> Looked through notes and test programs to figure out how to display text in pygame Implemented a 'hp' system, where the player can only move onto a square that has lower or equal hp to them. (this 'hp' system is a temporary measure to ensure that the player cannot move onto other enemies when they are implemented) Worked on a movement animation <p>Achievements</p> <ul style="list-style-type: none"> Player character (8 ball) can now move around the grid, according to hp and moveDistance limits <p>Challenges</p> <ul style="list-style-type: none"> Implemented a movement animation, but there are some bugs <ul style="list-style-type: none"> Left movement: multiple copies of the 8 ball appear Right movement: same as above, but the copies appear towards the left Movement up and down: 8 ball teleports to correct location after a delay 	<p>Grid movement and 'hp':</p> <p>Failed animation:</p>



22/02/22	<ul style="list-style-type: none"> Cleaned up code by removing unnecessary variables and repetitions and using more functions Worked on fixing move animation 	
2/03/22	<ul style="list-style-type: none"> Researched enumerate() function Cleaned up code and reorganised functions 	<p>Testing enumerate:</p> <pre>list = [chr(x) for x in range(65, 91)]</pre> <pre>for num, item in enumerate(list): print(num, item)</pre> <p>https://www.geeksforgeeks.org/enumerate-in-python/</p>
9/03/22	<ul style="list-style-type: none"> Started second version of move animation <p>Challenges</p> <ul style="list-style-type: none"> Multiple bugs as the object doesn't stop moving, leaves a trail of copies and does not work with different sized screens 	
10/03/22	<ul style="list-style-type: none"> Finished move animation Started work on card randomisation <p>Achievements</p> <ul style="list-style-type: none"> Entire program successfully optimised using a new structure Move animation works as required. 	Moving Player Icon:



11/03/22	<ul style="list-style-type: none"> Started work on random card picker Reworked function that displays images to screen to allow the function to work with any image file supplied 	
13/03/22	<ul style="list-style-type: none"> Created a txt file to store card stats Fixed some errors regarding use of exec() function 	<p>Research on exec() function: https://stackoverflow.com/questions/23168282/setting-variables-with-exec-inside-a-function</p> <p>Txt file:</p> <pre>cardfile.txt - Notepad File Edit Format View # File Syntax: # name:hp:damage player.png:3:5 image.png:1:1</pre>
14/03/22	<ul style="list-style-type: none"> Worked on random card drawing <p>Achievements</p> <ul style="list-style-type: none"> Finished card randomiser and selector <p>Challenges</p> <ul style="list-style-type: none"> Though the program works as intended, response time between user input and screen output is very slow 	<p>Randomly generated grid:</p>



16/03/22	<ul style="list-style-type: none"> Accidentally fixed response time issue, when experimenting with code. This was probably due to combining some 'if' statements together. However the same problem may arise again when more code is added to the game loop. (Refer back to link on right if that happens) 	Optimising Code: https://www.loginradius.com/blog/async/speed-up-python-code/
21/03 - 04/04	<ul style="list-style-type: none"> Half Yearly Exams No progress on project apart from finding a good online image editor 	Image Editor: https://pinetools.com/pixelate-effect-image
07/04/22	<ul style="list-style-type: none"> Improved aesthetics of gantt chart and made it look neater 	
08/04/22	<ul style="list-style-type: none"> Created a list of different types of biomes and enemies across levels 1 to 100 Searched for backgrounds 	
12/04/22	<ul style="list-style-type: none"> Used image editor to pixelate backgrounds and edit them to suit the project 	Biome 4 Background:
13/04/22	<ul style="list-style-type: none"> Created player sprite and other miscellaneous images (attack/health icon, portal icon) 	
14/04/22	<ul style="list-style-type: none"> Created all enemy sprites and boss sprite 	

	<ul style="list-style-type: none"> Organised current assets into folder 	
19/04/22	<ul style="list-style-type: none"> Created audio assets <ul style="list-style-type: none"> Background music for game SFX (Move, click, enter portal etc.) <p>Achievements</p> <ul style="list-style-type: none"> Finished making all assets 	
20/04/22	<ul style="list-style-type: none"> Made data flow diagrams: <ul style="list-style-type: none"> Level 1 Level 2: ('Game' process from level 1) 	
21/04 - 22/04	<ul style="list-style-type: none"> Remade some sprites and added new ones Edited data flow diagrams 	
26/04/22	<ul style="list-style-type: none"> Compiled Part A files and submitted <p>Achievements</p> <ul style="list-style-type: none"> <u>Part A Submitted</u> 	