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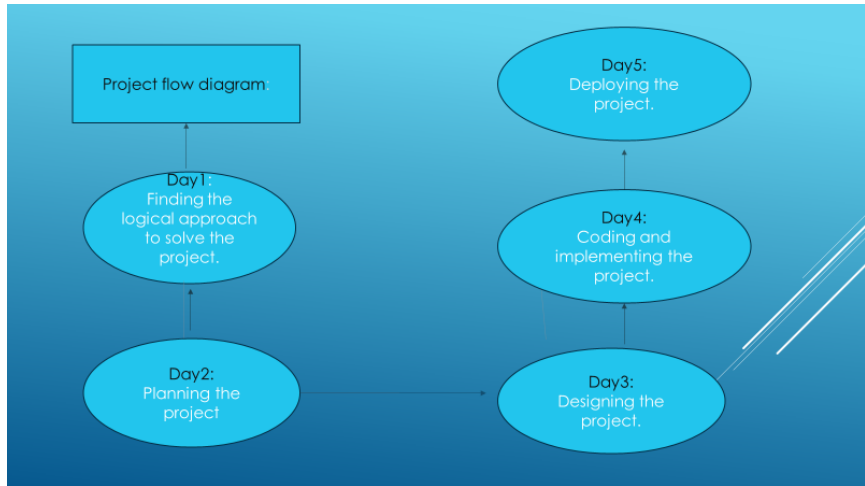
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DESCRIPTION

Tetris is a video game developed in the Soviet Union in 1984. The game has a simple goal of destroying lines of block before it reaches the top. The line is made up of a square block. Tetrominoes is the shape of the 4 connected blocks that falls vertically down.

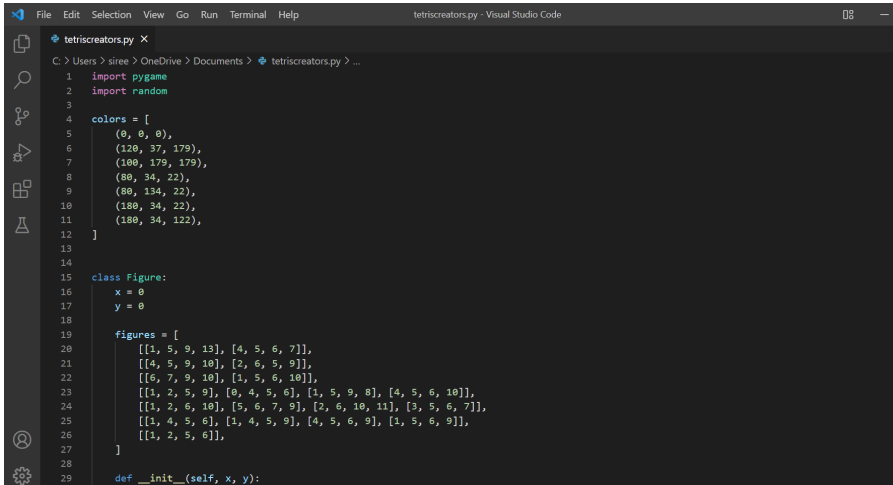
PROCESS FLOW DIAGRAM



TECHNICAL STACK

- *Python Language
- *VS CODE
- *Python IDLE
- *Jupyter notebook
- *Sys module
- *Pygame snippets
- *Code Runner
- *Random module

DAY-1 WORK

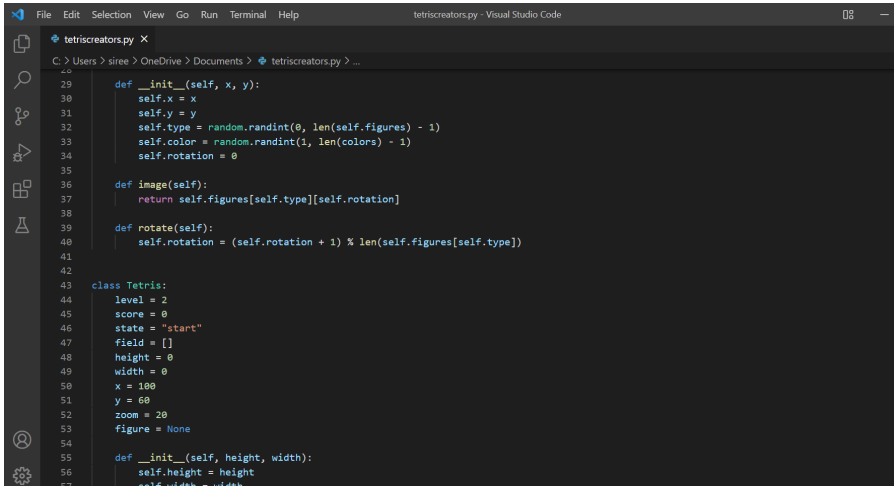


```
File Edit Selection View Go Run Terminal Help tetriscreators.py - Visual Studio Code

tetriscreators.py X
C: > Users > siree > OneDrive > Documents > tetriscreators.py > ...

1  import pygame
2  import random
3
4  colors = [
5      (0, 0, 0),
6      (120, 37, 179),
7      (100, 179, 179),
8      (80, 34, 22),
9      (80, 134, 22),
10     (180, 34, 22),
11     (180, 34, 122),
12 ]
13
14
15 class Figure:
16     x = 0
17     y = 0
18
19     figures = [
20         [[1, 5, 9, 13], [4, 5, 6, 7]],
21         [[4, 5, 9, 10], [2, 6, 5, 9]],
22         [[6, 7, 9, 10], [1, 5, 6, 10]],
23         [[1, 2, 5, 9], [0, 4, 5, 6], [1, 5, 9, 8], [4, 5, 6, 10]],
24         [[1, 2, 6, 10], [5, 6, 7, 9], [2, 6, 10, 11], [3, 5, 6, 7]],
25         [[1, 4, 5, 6], [1, 4, 5, 9], [4, 5, 6, 9], [1, 5, 6, 9]],
26         [[1, 2, 5, 6]],
27     ]
28
29     def __init__(self, x, y):
```

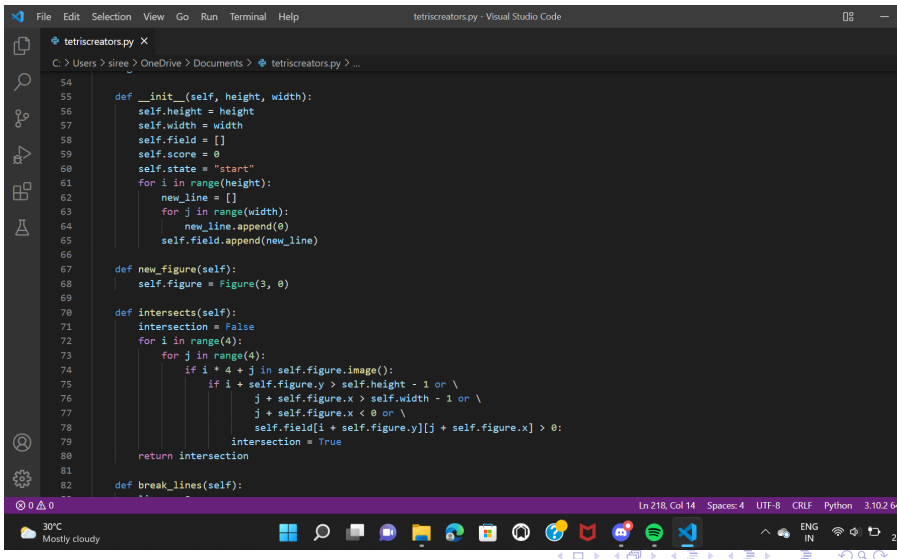
DAY-2 WORK



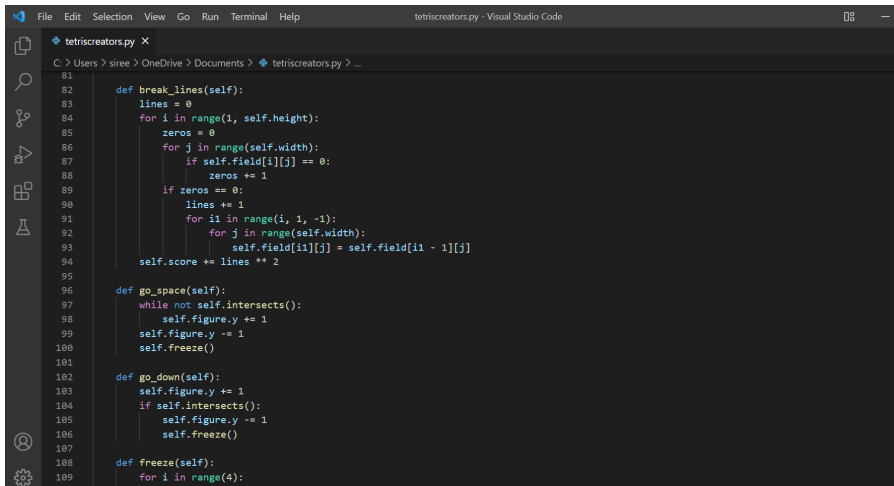
```
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tetriscreators.py - Visual Studio Code

tetriscreators.py X
C:\> Users > siree > OneDrive > Documents > tetriscreators.py > ...

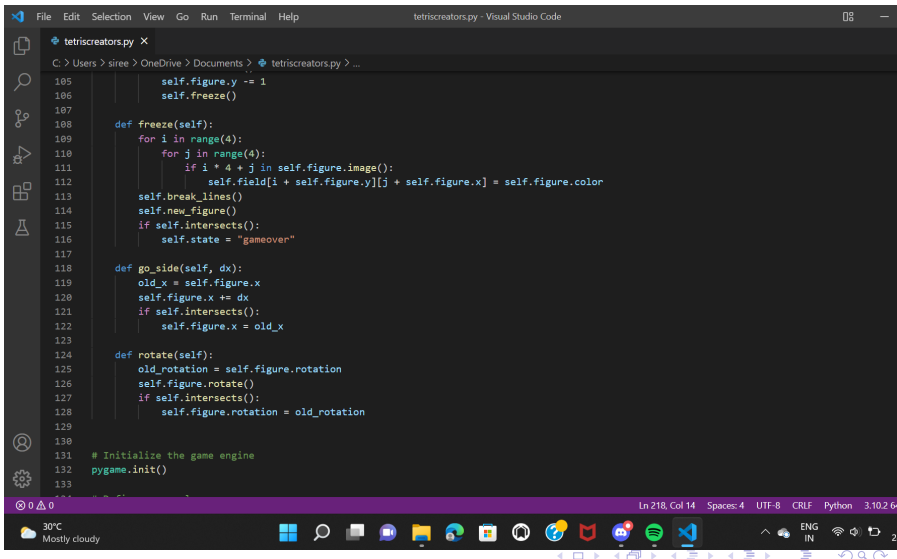
29 def __init__(self, x, y):
30     self.x = x
31     self.y = y
32     self.type = random.randint(0, len(self.figures) - 1)
33     self.color = random.randint(1, len(colors) - 1)
34     self.rotation = 0
35
36 def image(self):
37     return self.figures[self.type][self.rotation]
38
39 def rotate(self):
40     self.rotation = (self.rotation + 1) % len(self.figures[self.type])
41
42
43 class Tetris:
44     level = 2
45     score = 0
46     state = "start"
47     field = []
48     height = 0
49     width = 0
50     x = 100
51     y = 60
52     zoom = 20
53     figure = None
54
55 def __init__(self, height, width):
56     self.height = height
57     self.width = width
```



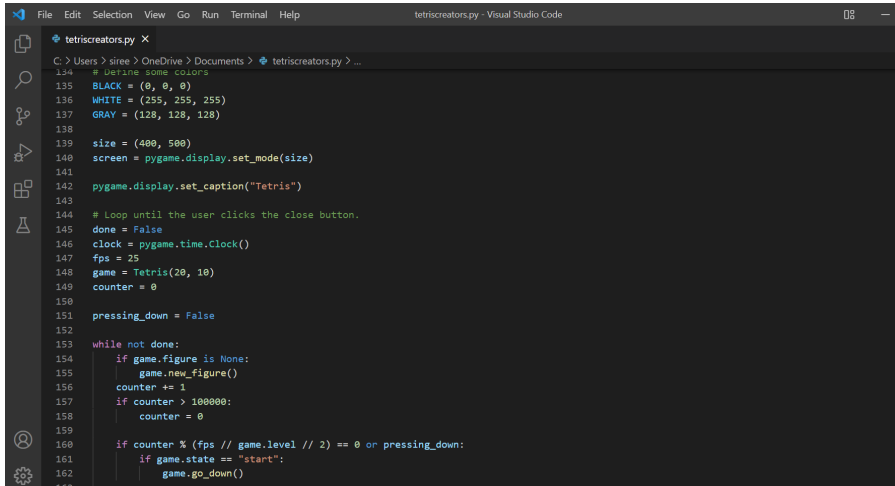
DAY-3 WORK



```
81
82     def break_lines(self):
83         lines = 0
84         for i in range(1, self.height):
85             zeros = 0
86             for j in range(self.width):
87                 if self.field[i][j] == 0:
88                     zeros += 1
89             if zeros == 0:
90                 lines += 1
91                 for i1 in range(i, 1, -1):
92                     for j in range(self.width):
93                         self.field[i1][j] = self.field[i1 - 1][j]
94             self.score += lines ** 2
95
96     def go_space(self):
97         while not self.intersects():
98             self.figure.y += 1
99         self.figure.y -= 1
100        self.freeze()
101
102     def go_down(self):
103         self.figure.y += 1
104         if self.intersects():
105             self.figure.y -= 1
106             self.freeze()
107
108     def freeze(self):
109         for i in range(4):
```

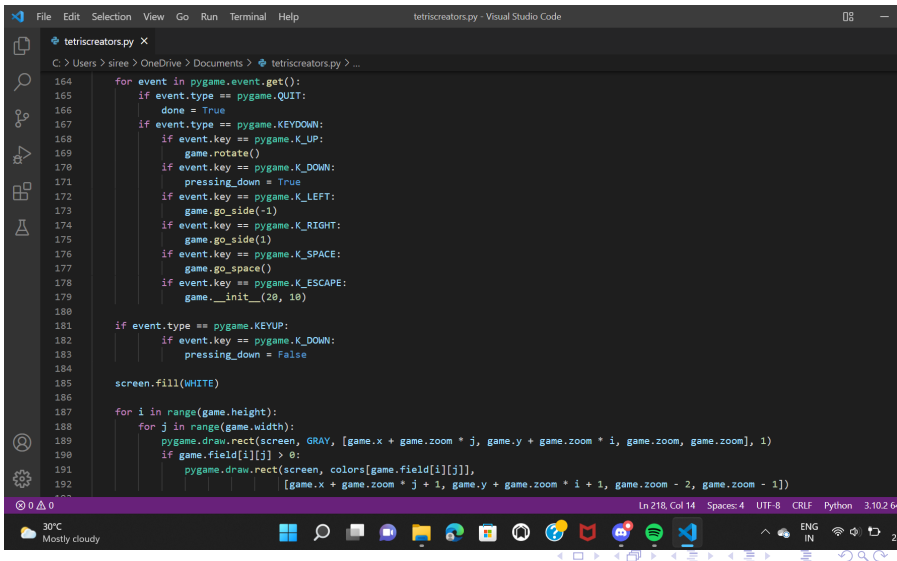


DAY-4 WORK

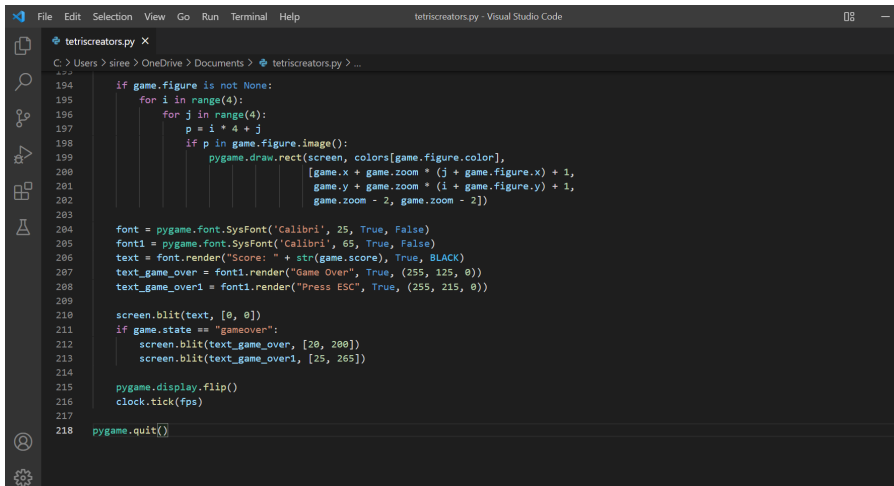


```
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tetriscreators.py X
C: > Users > siree > OneDrive > Documents > tetriscreators.py > ...
134 # Define some colors
135 BLACK = (0, 0, 0)
136 WHITE = (255, 255, 255)
137 GRAY = (128, 128, 128)
138
139 size = (400, 500)
140 screen = pygame.display.set_mode(size)
141
142 pygame.display.set_caption("Tetris")
143
144 # Loop until the user clicks the close button.
145 done = False
146 clock = pygame.time.Clock()
147 fps = 25
148 game = Tetris(20, 10)
149 counter = 0
150
151 pressing_down = False
152
153 while not done:
154     if game.figure is None:
155         game.new_figure()
156         counter += 1
157     if counter > 100000:
158         counter = 0
159
160     if counter % (fps // game.level // 2) == 0 or pressing_down:
161         if game.state == "start":
162             game.go_down()
```



DAY-5 WORK



```
File Edit Selection View Go Run Terminal Help
tetriscreators.py - Visual Studio Code

tetriscreators.py X
C: > Users > siree > OneDrive > Documents > tetriscreators.py > ...

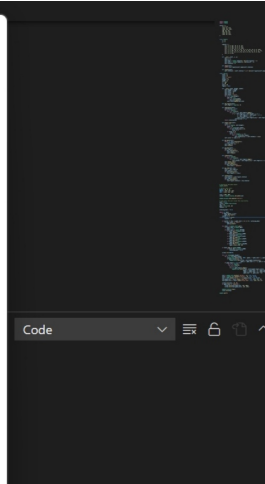
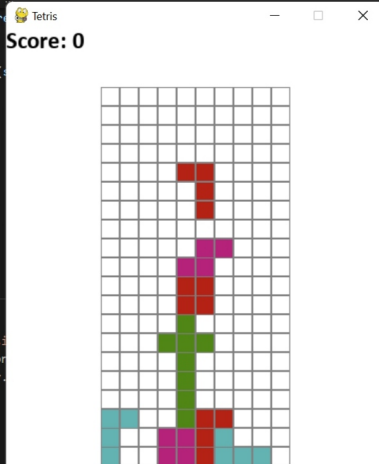
194 if game.figure is not None:
195     for i in range(4):
196         for j in range(4):
197             p = i * 4 + j
198             if p in game.figure.image():
199                 pygame.draw.rect(screen, colors[game.figure.color],
200                                [game.x + game.zoom * (j + game.figure.x) + 1,
201                                game.y + game.zoom * (i + game.figure.y) + 1,
202                                game.zoom - 2, game.zoom - 2])
203
204 font = pygame.font.SysFont('Calibri', 25, True, False)
205 font1 = pygame.font.SysFont('Calibri', 65, True, False)
206 text = font.render("Score: " + str(game.score), True, BLACK)
207 text_game_over = font1.render("Game Over", True, (255, 125, 0))
208 text_game_over1 = font1.render("Press ESC", True, (255, 215, 0))
209
210 screen.blit(text, [0, 0])
211 if game.state == "gameover":
212     screen.blit(text_game_over, [20, 200])
213     screen.blit(text_game_over1, [25, 265])
214
215 pygame.display.flip()
216 clock.tick(fps)
217
218 pygame.quit()
```

OUTPUT

```
C: > Users > siree > tetriscreators.py >
37         return self.figure
38
39     def rotate(self):
40         self.rotation = (self.rotation + 1) % 4
41
42 class Tetris:
43     level = 2
44     score = 0
45     state = "start"
46     field = []
47     height = 0
48     width = 0
49     x = 100
50     y = 60
51     zoom = 20
52     figure = None
```

PROBLEMS OUTPUT DEBUG CONSOLE

[Running] python -u "c:\Users\siree\source\repos\tetris\tetris.py"
pygame 2.1.2 (SDL 2.0.18, Python3 3.7.4)
Hello from the pygame community.



CODE STATUS

No.of.lines of code= 218

REPOSITORY

<https://gitlab.com/tetris5/tetris-creators.git>

CHALLENGES AND IMPROVEMENTS

The challenges we faced during project is mainly Indentation Error, which we overcame by wrong spacing between lines and whether the dot is missing somewhere that it needs to be.

And the other challenge we faced gladly is Attribute Error, which we rectified by checking line to line program code.

LEARNINGS

- * We have learnt about the pygame package.
- * We have also learnt how to code for creating a game
- * We have come across the application of different modulus like sys module ,random module etc.
- * We have also learnt about Latex , which helped us a lot in our documentation.
- * We have learnt about the functionality of new methods .

Thank
You!