Snowfall display using Pygame in Python

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Not everybody must have witnessed Snowfall personally but wait a minute, What if you can see the snowfall right on your screen by just a few lines of creativity and Programming.

Turtle Tkinter Matplotlib Python Imaging Library Pyglet Python Numpy Pandas Python Database

Pygame.

Steps for snowfall creation

1. Importing modules

First, we need to import the Pygame module by using the command.

```
import pygame
```

Also, along with Pygame, we will also need random module. Python has a built-in module that you can use to make random numbers just by importing random module.

```
import random
```

2. Initialize the game engine

It simply means choose the colors you want to use. In programming World, Whatever you can think you can make. At the end of the article, you will find green snowfall on the white background.

Python3

```
# initialize
pygame.init()

# chosen colours will be used
# to display the output
WHITE = [255, 255, 255]
GREEN = [0, 255, 0]
```

3. Specify the size of the screen

It can be a new number depending upon the resolution of your system.

Python3

```
# specify the size

SIZE = [400, 400]
screen = pygame.display.set_mode(SIZE)
```

4. Assign a name to your snowfall window screen

The name given can be seen on the left corner of the output window.

Python3

```
# caption for output window

pygame.display.set_caption("Programming World of GFG")
```

5. Create an empty array for your snowfall

Python3

```
snowFall = []
```

6. Looping to get snowfall positions

Make a loop and run to 50 times and add a snowfall in a random x,y position using random Module.

Python3

```
for i in range(50):
    x = random.randrange(0, 400)
    y = random.randrange(0, 400)
    snowFall.append([x, y])
```

7. Track time

Create an object to help track time

Python3

```
# object to track time

clock = pygame.time.Clock()
```

8. Set criteria for snowfall occurrence

Snowfall should occur until the user presses the close button and for this inside **while** loop, use a **for** loop.

Python3

```
# loop till the close button is pressed
done = False

while not done:

  # User did something
    for event in pygame.event.get():

        # If user clicked close
```

```
        if event.type == pygame.QUIT:

          # Flag that we are done so
          # we exit this loop
            done = True
```

9. Set the screen background :

Python3

```
screen.fill(WHITE)
```

10. Process the snowfall

Now use a for loop to process each Snowfall in the list :

Python3

```
for i in range(len(snowFall)):
```

11. Draw the snowfall

Python3

```
pygame.draw.circle(screen, GREEN, snowFall[i], 2)
```

12. Adding movement

Python3

```
# Move the snowFall down one pixel
        snowFall[i][1] += 1
```

```
        # If the snowFall has moved off the bottom of the screen
        if snowFall[i][1] > 400:

            # Reset it just above the top
            y = random.randrange(-50, -10)
            snowFall[i][1] = y

            # Give it a new x position
            x = random.randrange(0, 400)
            snowFall[i][0] = x

    # Go ahead and update the screen with what we've drawn.
    pygame.display.flip()
    clock.tick(20)
pygame.quit()
```

And Yes, Green snowfall has started!!

Complete Program

Python3

```
import pygame
import random
pygame.init()

WHITE = [255, 255, 255]
GREEN  = [0,255,0]
SIZE = [400, 400]

screen = pygame.display.set_mode(SIZE)
pygame.display.set_caption("Programming World of GFG")

snowFall = []
for i in range(50):
    x = random.randrange(0, 400)
    y = random.randrange(0, 400)
    snowFall.append([x, y])

clock = pygame.time.Clock()
done = False
while not done:

    for event in pygame.event.get():
```

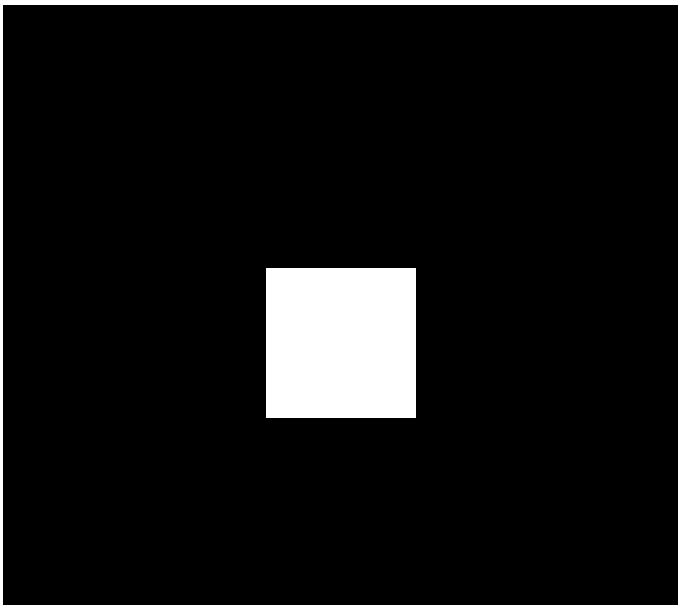
```
        if event.type == pygame.QUIT:
            done = True
    screen.fill(WHITE)
    for i in range(len(snowFall)):
        pygame.draw.circle(screen, GREEN, snowFall[i], 2)

        snowFall[i][1] += 1
        if snowFall[i][1] > 400:
            y = random.randrange(-50, -10)
            snowFall[i][1] = y

            x = random.randrange(0, 400)
            snowFall[i][0] = x

    pygame.display.flip()
    clock.tick(20)
pygame.quit()
```

Output



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