PROJECT   SYNOPSIS

D.A.V Public Sr. Sec School Parwanoo

Computer Science Project Synopsis:
Topic: *"Snakegame using python and MySQL database"*

Submitted to Mrs. *Monika Khera*
Submitted by:
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Class: XII
Section: Science
Roll no: 23
Registration no: 17679932
Session: 2021-2022
Subject: *Computer Science*

Certificate:

This is to certify that **Sharad Chandel** of class 12 has successfully completed the project work on P*ython and MySQL programs* for class XII practical examination of the Central Board of Secondary Education in the year 2021-2022. It is further certified that this project is the Group work of the candidate.

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Signature of project Guide

Acknowledgement:

I would like to express my special thanks of gratitude to my teacher Mrs. Monika Khera who gave me the golden opportunity to do this wonderful project on the topic python programs and mysql programs.

Which also helped me in doing a lot of Research and i came to know about so many new things.

I am really thankful to them.
Secondly i would also like to thank my parents

And friends who helped me a lot in finishing this project within the limited time.

Thirdly thanks to my uncle Mr. Sarvdeep Singh who helped me by lending me his company laptop.

I am making this project not only for marks but to also increase my knowledge.

Special thanks to Arti for Sharing content of INTRODUCTION as i was so confused in that.

THANKS AGAIN TO ALL WHO HELPED ME !!!.

<u>Index:</u>

<u>Introduction:</u>

We the students of CLASS XII SCIENCE of DAV PUBLIC SR. SEC. SCHOOL PARWANOO have been assigned the work of SCHOOL MANAGEMENT SYSTEM. To perform this task the students were divided into the group of students named as

1. Sharad Chandel
2. Sourabh Thakur
3. Kartik Kumar

We had been assigned the work of coding and programming have been assigned the work of analyzing the overall mistakes and have done the conclusion work.

We are so glad that this work have been assigned to us, yet we haven't done this work before . Ms. Monika Khera our subject teacher have also helped us a lot to complete this project. We feel so blessed that we have learnt all this work with the help of our teacher. Its hard to imagine a better computer science teacher than her, she makes everything hard, soo simple! . As we are the students of CLASS XII SCIENCE and we haven't done this type of project before, we have performed all that which we have learnt from our CBSE PROGRAMMING .Hence, we know that this programming would be further done on a big platform. We believe that this programming would further help us a lot in our future .We are also thankful to our group mates for cooperating with each other while performing this task we have also polished the skills of group activity.

My name is Sharad and here's my POV:-

I love playing games. I had started played games since i was 10. It was some old potato pc but it ran <u>Grand Theft Auto: San Andreas</u> perfectly.Since then i love games. Thats why i have taken <u>computer science</u>,i.e to make games and do advanced computers stuff. So when Monika Ma,am gave us project. Idea struck into my mind ,that idea was ...why not i learn and make a game. Then i gathered 2 more of my friends and We thought we would make a decent open world fighting game but when we researched about making game in python. We got to know about pygame module. It already defined some helpful functions to make a decent game. So we read documentation of pygame, although didnt understand anything but we then learned making a simple snakegame from

codewithharry youtubechannel. And the end product was really bad and my respect increased for game developers that how they make such good games but then they don't get paid enough for it. People pirate their games! Which is really bad and sad.

Why we choose choose making a childish game?

So that we can build the most important thing in the entire programming i.e LOGIC BUILDING. Making a game enable us to think what's the logic and how will i make a computer to do this. Let it be a paid course or free course. Most programming teacher will emphasis on teaching a language through a simple text based game or GUI game. So Programming logic is **a set of principles that delineates how elements should be arranged so a computer can perform specific tasks**. Logical thinking, whether programming or formal, means applying principles in a disciplined manner to achieve an acceptable result.

Features:

1. Background sound from Erased Anime OP.

2. Game over sound effect counter strike AWM.

3. We can retry playing the game.

4. We can store hi score in a seperate file.

5. Simple menu screen with "tip of the day".

6. Game over if snake touches itself or screen side.

7. Stores name and scores in mySQL database names "snakegamescores" in table "scores"

8. (new!)Random funny/cute background pics(17+) each gameplay.

9. (new!)Random quotes(10+) related to snakes at menu screen.

Goal of the Project:

Goal of this project is to make a game that everybody loves playing and it should be hard to make it more enjoyable. we love playing games that are short and simple,this should be one of those. It should be a game that one should play while waiting in a line or waiting for someone. Basically this game should be able to bring a smile on the the user.

Scope of the Project:

I think there is a very high scope of this project. We can bring multiple features to it such as changing the skin of our snake,changing the food to pizza, burger, Cholle Bhature etc for comedy/fun purpose. We can bring online multiplayer via connecting SQL database "snakegamescores" to online and make TOP PLAYER Section. Well, but That takes a knowledge of complete college Computer Science.

Technology Used:

A old custom build computer. A BenQ 1336x768p monitor, an Intex speaker, Logitech keyboard, Dell mouse, a wireless

adapter 802.11n, a pendrive, Visual Studio Code, Libreoffice write, Firefox browser, Google drive, Screenshot tool, that's all i think!

<u>System requirements:</u>

1. Any working pc with ubuntu any linux distro or windows 10 or 7 will work.

2. Working internet connection. At least 200kb/s speed.

3. Ram should be more than 500mb.

4. Pygame module must me installed.

5. Google drive,in case your game files got deleted or corrupt.

6. Python must be installed correctly.

7. Any integrated development environment. I recommend Visual Studio Code. Its somewhat heavy on CPU but it has lots of plugins and features.

8. A simple Text editor.

9. Libreoffice writer(open source) for creating this project file.

If you have all these things then you are good to go!

How to install python in windows:

go to this link _https://www.python.org/downloads/_ and select version that suit you best.

Now run the downloaded setup exe and select location to install python.

Click on install now and relax,maybe grab a coffee. Don't forget to check the boxes before installation. And you are done installing python on windows 10.

How to install python in linux(ubuntu):

On linux its so simple.just open terminal by ctrl+alt+t and type
`sudo apt-get install python`
and you are done! Thats one of the reasons i like linux.

How to install pygame module
in Linux(ubuntu):

Type this in terminal: `sudo apt install python3-pygame`
now type password and you are done.

How to install pygame module
in Windows:

just type this in powershell/cmd: `pip install pygame`

<u>Project Code:</u>

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


## defining Colors into rgb colour codes. format = (0-255,0-255,-255)  ##
white = (255, 255, 255)        # in use
red = (255, 0, 0)             # in use
black = (0, 0, 0)            # in use
Blue = (0,0,255)              # in use
snakecolor=(171, 228, 10)      # in use
Orange=(255, 213, 128)         # in use
green = (0,100,0)             # in use
Darkorange=(255,140,0)         # in use
Darkgreen=(0,128,0)           # in use


# Creating window
screen_width = 900
screen_height = 600
gameWindow = pygame.display.set_mode((screen_width, screen_height))


### retrieving top 3 high score from SQL ###


import mysql.connector as sqltor
mycon =
sqltor.connect(host="localhost",user="root",passwd="123456",database="snakegamescores")


top3scorer = mycon.cursor()
top3scorer.execute("SELECT * FROM scores ORDER BY score DESC")
displaytop3scorer = top3scorer.fetchall()
a=str(displaytop3scorer[0])
b=str(displaytop3scorer[1])
```

```python
c=str(displaytop3scorer[2])
d=' Player      Highscore'


##################################################


# Game Title
pygame.display.set_caption(" Snakegame_with_Sharad_Kartik_Sourabh :  ver_3.21 (OSHMKUFA)
added MORE random Funny/cute snake image each Retry ;) ")
pygame.display.update()
clock = pygame.time.Clock()
font = pygame.font.SysFont(None, 55)


def text_screen(text, color, x, y):
    screen_text = font.render(text, True, color)
    gameWindow.blit(screen_text, [x,y])


def plot_snake(gameWindow, color, snk_list, snake_size):
    for x,y in snk_list:
        pygame.draw.rect(gameWindow, color, [x, y, snake_size, snake_size])


def welcome():
    TIPS=['"Nagin Song Is Imp Part of Marriage"','"~~~ Nagin Dance ~~~"','"Snakes Are
Cute!"','"Snake Wanna Have Fun!"','"Snakes Are Dangerous!"','"Snakes Are AEWSOME!"','"Dont
Forget To Feed Your Snakes!"','"Snakes Are Good Pets!"','"Snakes Likes To Be Your Belt!"','"Never
Wound a Snake, Kill It"','"The Snake Will Always Bite Back"','"Sometimes Just Ssssmile!"','"Life is
Snake&Ladder, Without Ladder"','"Snakes Are COOL Creatures!"']
    CHOOSENTIP= random.choice(TIPS)
    exit_game = False
    while not exit_game:
        gameWindow.fill(white)
        text_screen("Welcome To Snakes;Gate", black, 240, 40 )
        text_screen("Tip of the Day! :", green, 30, 120 )
        text_screen(CHOOSENTIP, Blue, 135, 200 )
        text_screen("Press SPACEBAR To Play" ,Darkorange , 225 , 350 )
        text_screen("~~~~~~~~~~~~~~~" ,Darkgreen ,270 ,425 )
        text_screen("@" ,red , 640, 425 )
        text_screen("~~~~~~~~~~~~~~~" ,Darkgreen ,220 ,470 )
        text_screen("@" ,red ,140 , 470 )
```

```python
        for event in pygame.event.get():
            if event.type == pygame.QUIT:
                exit_game = True
            if event.type == pygame.KEYDOWN:
                if event.key == pygame.K_SPACE:
                    pygame.mixer.music.load('background.mp3')
                    pygame.mixer.music.play()
                    gameloop()
        pygame.display.update()
        clock.tick(60)




# Game Loop
def gameloop():
    # Game specific variables
snakepics=["angrysnake.jpg","dabsnake.jpg","gentelsnake.jpg","hatsnake.jpg","heygurlsnake.jpg","
twosnake.jpg","musclesnake.jpg","jazzsnake.jpg","snakegameu.jpg","hisnake.jpg","fistsnake.jpg","
drumsnake.jpg","smartsnake.jpg","harrysnake.jpg","voilinsnake.jpg","praysnake.jpg","funsnake.jpg
","Cutehatsnake.jpg","tiesnake.jpg"]
    # Choosing random background pics
    CHOOSEBACKGROUND=random.choice(snakepics)

    exit_game = False
    game_over = False
    snake_x = 45
    snake_y = 55
    velocity_x = 0
    velocity_y = 0
    snk_list = []
    snk_length = 1
    # Check if hiscore file exists
    if(not os.path.exists("hiscore.txt")):
        with open("hiscore.txt", "w") as f:
            f.write("0")

    with open("hiscore.txt", "r") as f:
```

```python
        hiscore = f.read()

    food_x = random.randint(20, screen_width / 2)
    food_y = random.randint(20, screen_height / 2)
    score = 0
    init_velocity = 5
    snake_size = 30
    fps = 80
    while not exit_game:
        if game_over:
            with open("hiscore.txt", "w") as f:
                f.write(str(hiscore))
            gameWindow.fill(white)
            text_screen("Game Over!", red, 350,400)
            text_screen("Press ENTER to Continue!", green, 225, 460)
            text_screen(a, Blue, 150, 200 )
            text_screen(b, Blue, 150, 250 )
            text_screen(c, Blue, 150, 300 )
            text_screen(d, Darkorange, 150, 125 )

            for event in pygame.event.get():
                if event.type == pygame.QUIT:
                    exit_game = True

                if event.type == pygame.KEYDOWN:
                    if event.key == pygame.K_RETURN:
                        welcome()

        else:

            for event in pygame.event.get():
                if event.type == pygame.QUIT:
                    exit_game = True

                if event.type == pygame.KEYDOWN:
                    if event.key == pygame.K_RIGHT:
```

```python
            velocity_x = init_velocity
            velocity_y = 0


        if event.key == pygame.K_LEFT:
            velocity_x = - init_velocity
            velocity_y = 0


        if event.key == pygame.K_UP:
            velocity_y = - init_velocity
            velocity_x = 0


        if event.key == pygame.K_DOWN:
            velocity_y = init_velocity
            velocity_x = 0


        if event.key == pygame.K_q:
            score +=10


    snake_x = snake_x + velocity_x
    snake_y = snake_y + velocity_y

    if abs(snake_x - food_x)<6 and abs(snake_y - food_y)<6:
        score +=10
        food_x = random.randint(20, screen_width / 2)
        food_y = random.randint(20, screen_height / 2)
        snk_length +=5
        if score>int(hiscore):
            hiscore = score

    #Background Image
    bgimg = pygame.image.load(CHOOSEBACKGROUND)
    bgimg = pygame.transform.scale(bgimg, (screen_width, screen_height)).convert_alpha()

    gameWindow.fill(white)
    gameWindow.blit(bgimg, (0, 0))
    text_screen("Score: " + str(score) + "  Hiscore: "+str(hiscore), Blue, 5, 5)
```

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```python
        pygame.draw.rect(gameWindow, red, [food_x, food_y, snake_size, snake_size])

        head = []
        head.append(snake_x)
        head.append(snake_y)
        snk_list.append(head)

        if len(snk_list)>snk_length:
            del snk_list[0]

        if head in snk_list[:-1]:
            game_over = True
            pygame.mixer.music.load('gameover.mp3')
            pygame.mixer.music.play()

        if snake_x<0 or snake_x>screen_width or snake_y<0 or snake_y>screen_height:
            game_over = True
            pygame.mixer.music.load('gameover.mp3')
            pygame.mixer.music.play()
        plot_snake(gameWindow, snakecolor, snk_list, snake_size)
    pygame.display.update()
    clock.tick(fps)

# CONNECTING the python game to mysql database through mysql-connector-python
import mysql.connector as sqltor
mycon = sqltor.connect(host="localhost",user="root",passwd="123456",database="snakegamescores")
if mycon.is_connected():
    print("successful connected to python database")

username=input("write a username:")
cursor=mycon.cursor()
query="INSERT INTO scores(name, score) VALUES('{}',{})".format(username, score)
cursor.execute(query)
mycon.commit()
print("data insertion successfully")
pygame.quit()
```
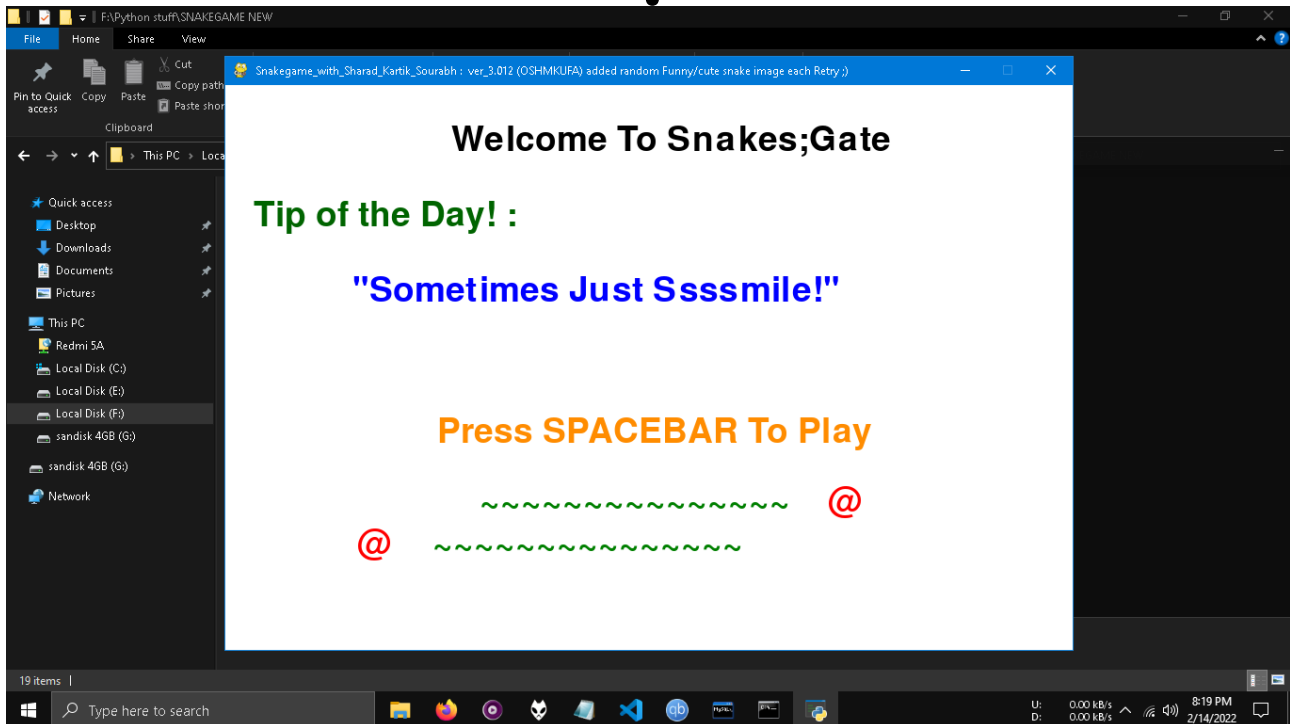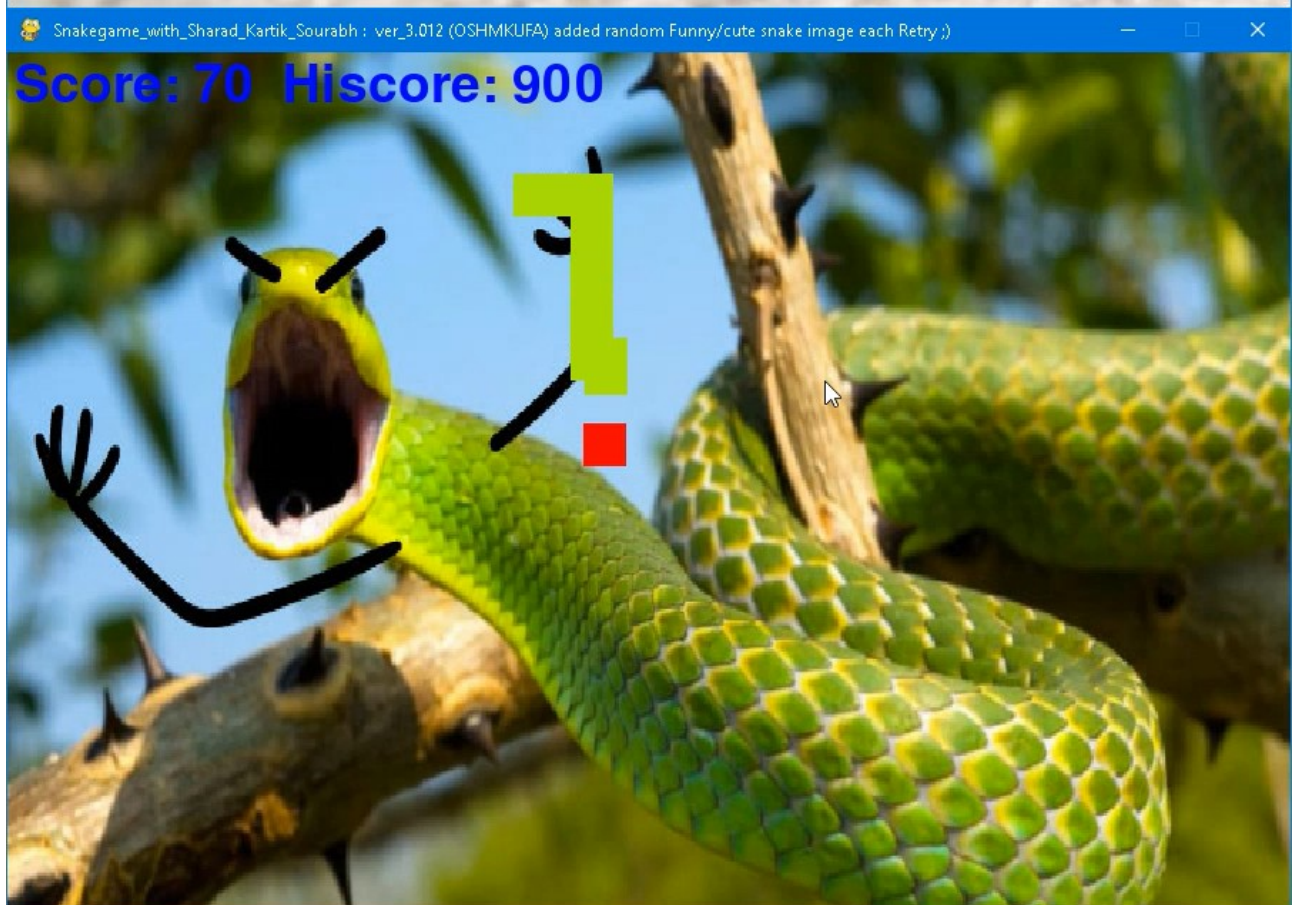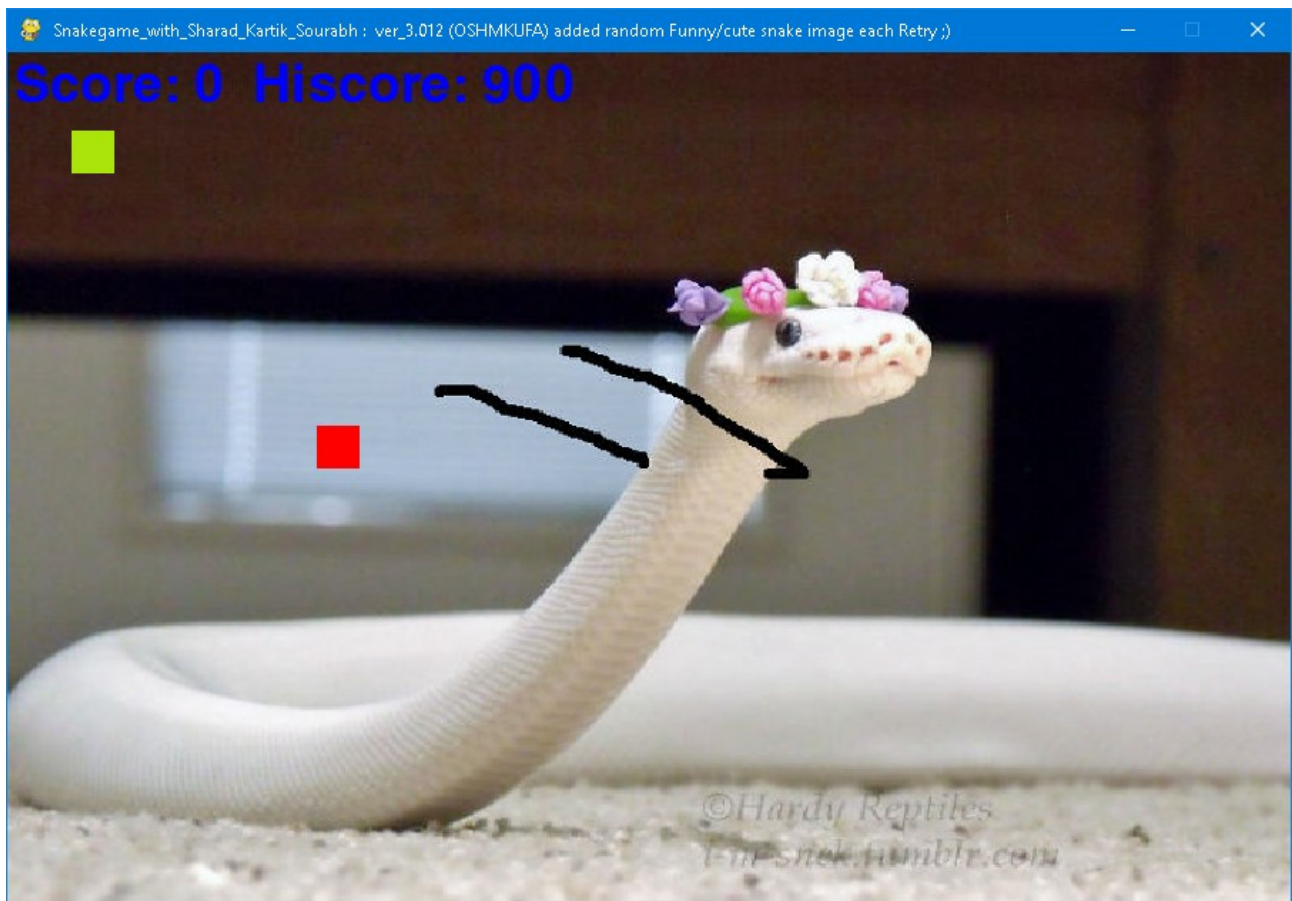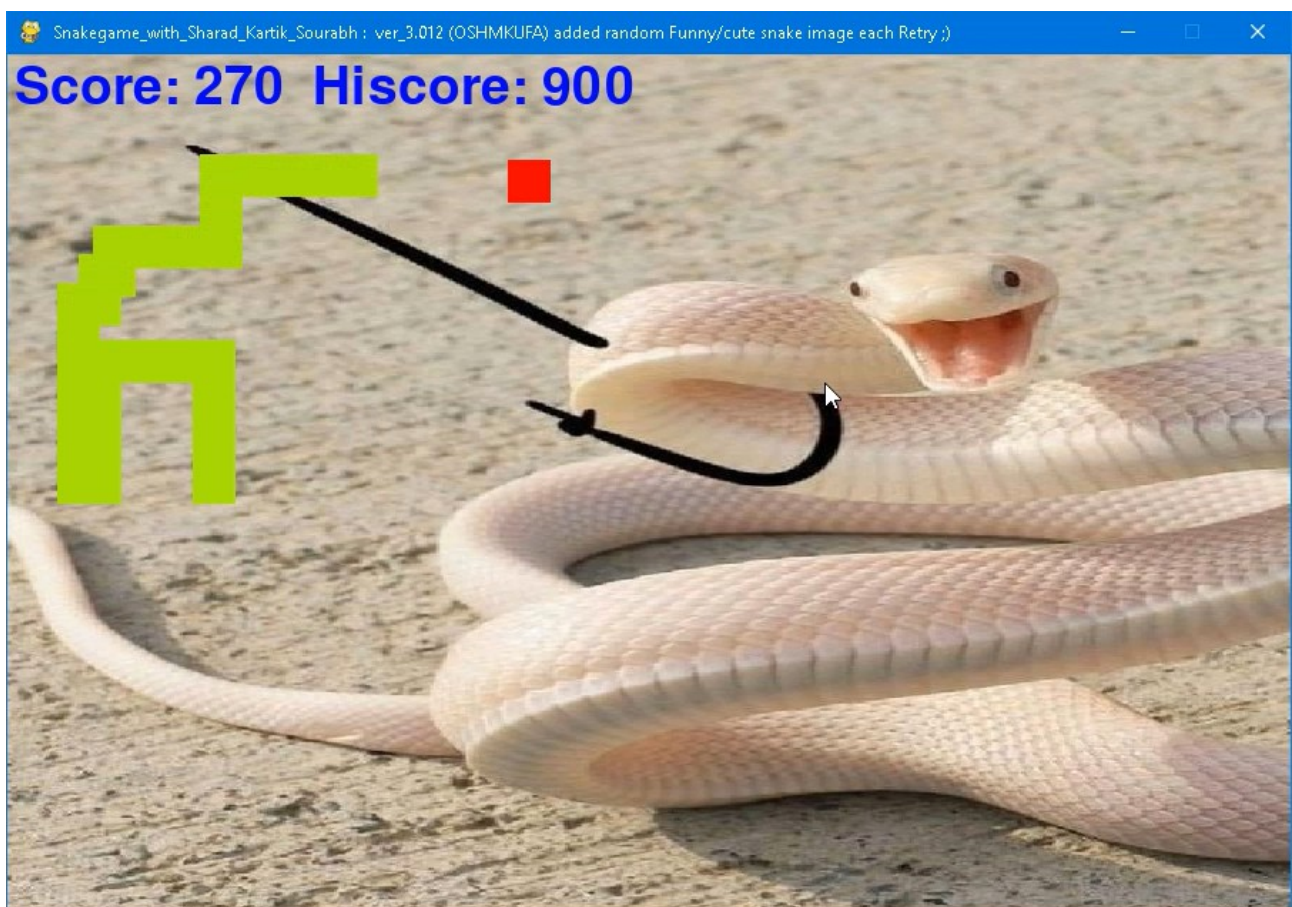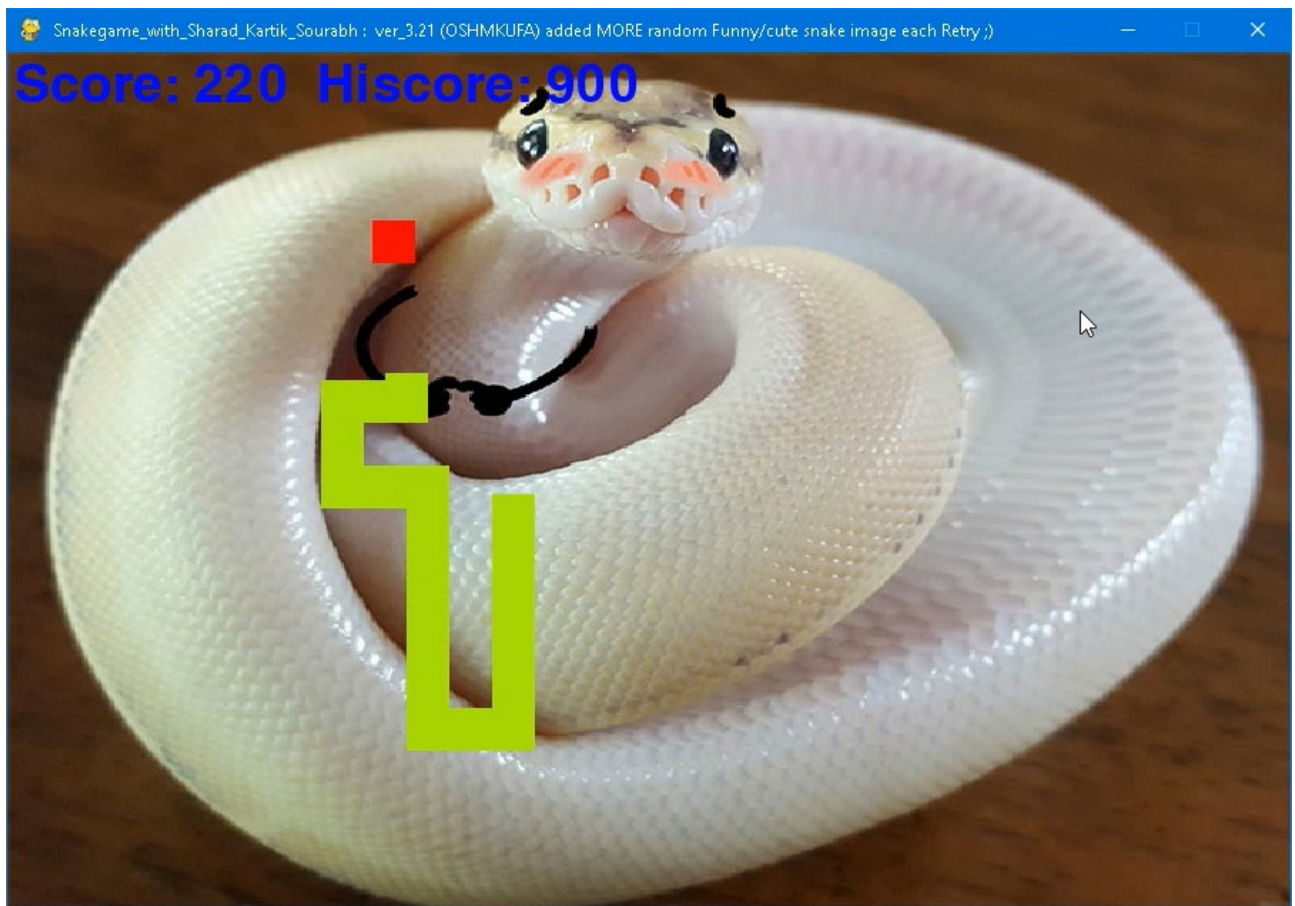
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```
    quit()
welcome()
```

Output:

Welcome To Snakes;Gate

Tip of the Day! :

"Sometimes Just Ssssmile!"

Press SPACEBAR To Play

~~~~~~~~~~~~~~~   @
@   ~~~~~~~~~~~~~~~

Snakegame_with_Sharad_Kartik_Sourabh : ver_3.012 (OSHMKUFA) added random Funny/cute snake image each Retry ;)

Welcome To Snakes;Gate

Tip of the Day! :

"Dont Forget To Feed Your Snakes!"

Press SPACEBAR To Play

~~~~~~~~~~~~~~~   @
@   ~~~~~~~~~~~~~~~

Player   Highscore

('sktiman', 900)
('sujeet', 600)
('gabruz', 558)

Game Over!
Press ENTER to Continue!

Score: 270 Hiscore: 900

22

24

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Snakegame_with_Sharad_Kartik_Sourabh : ver_3.21 (OSHMKUFA) added MORE random Funny/cute snake image each Retry ;)
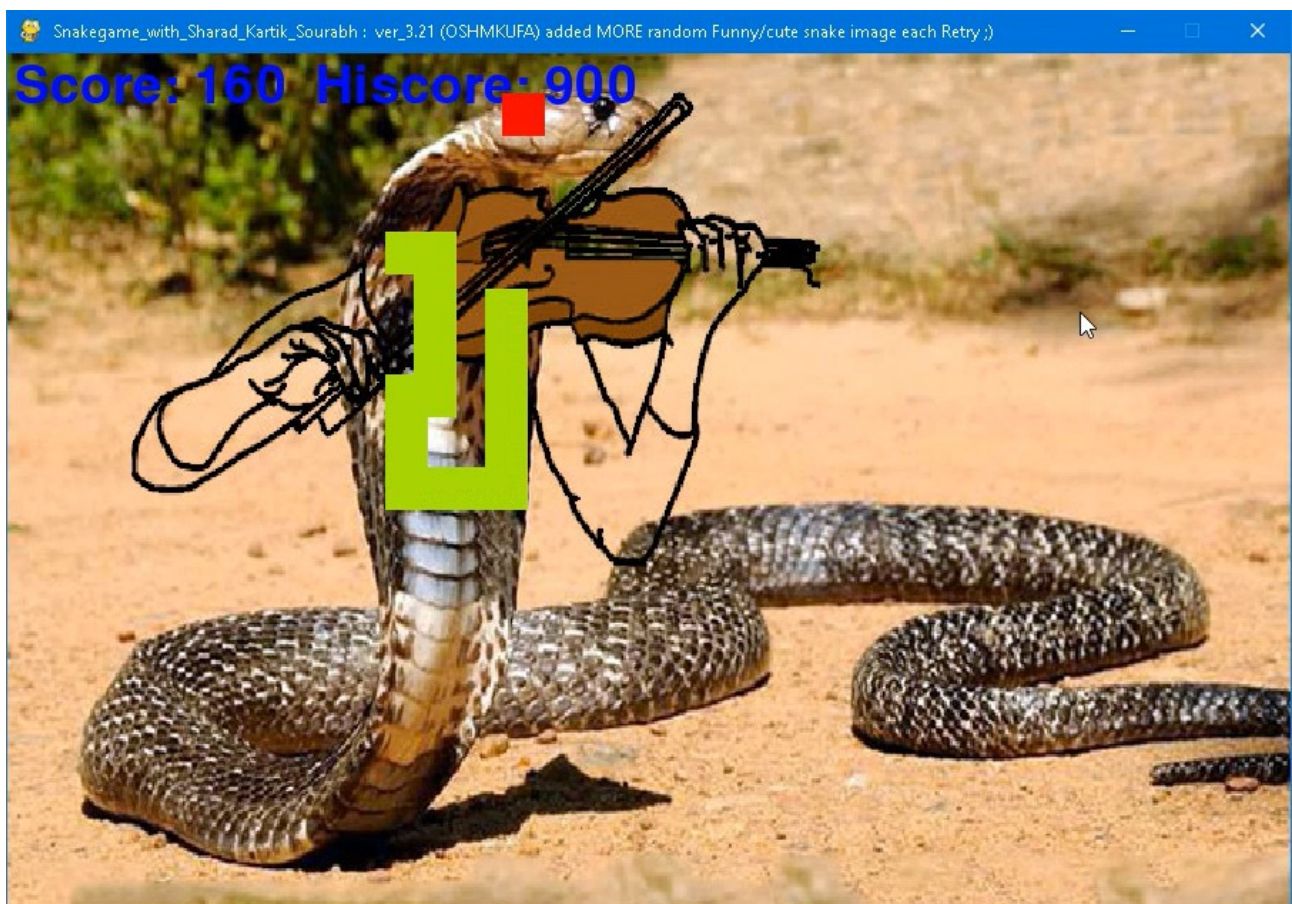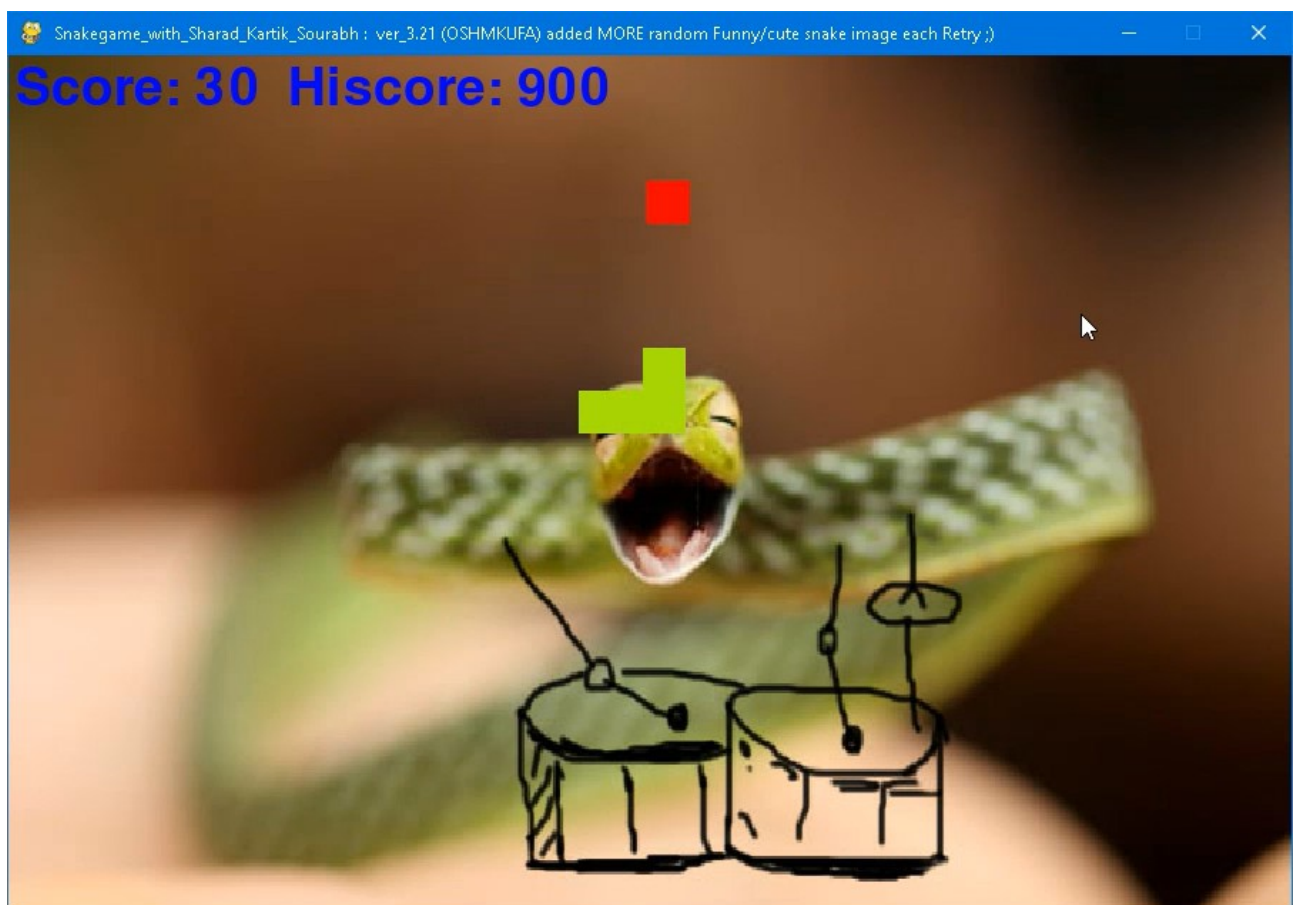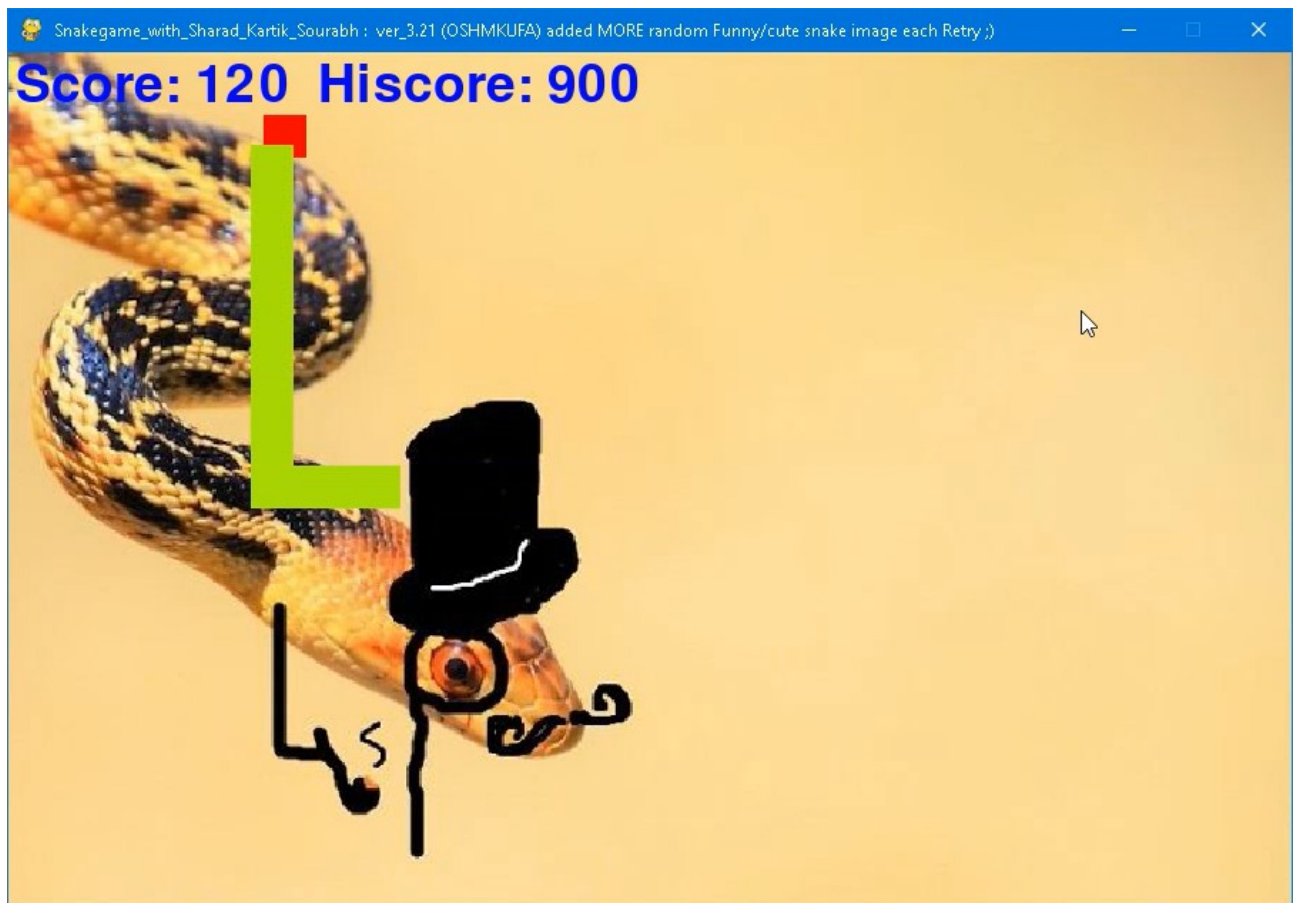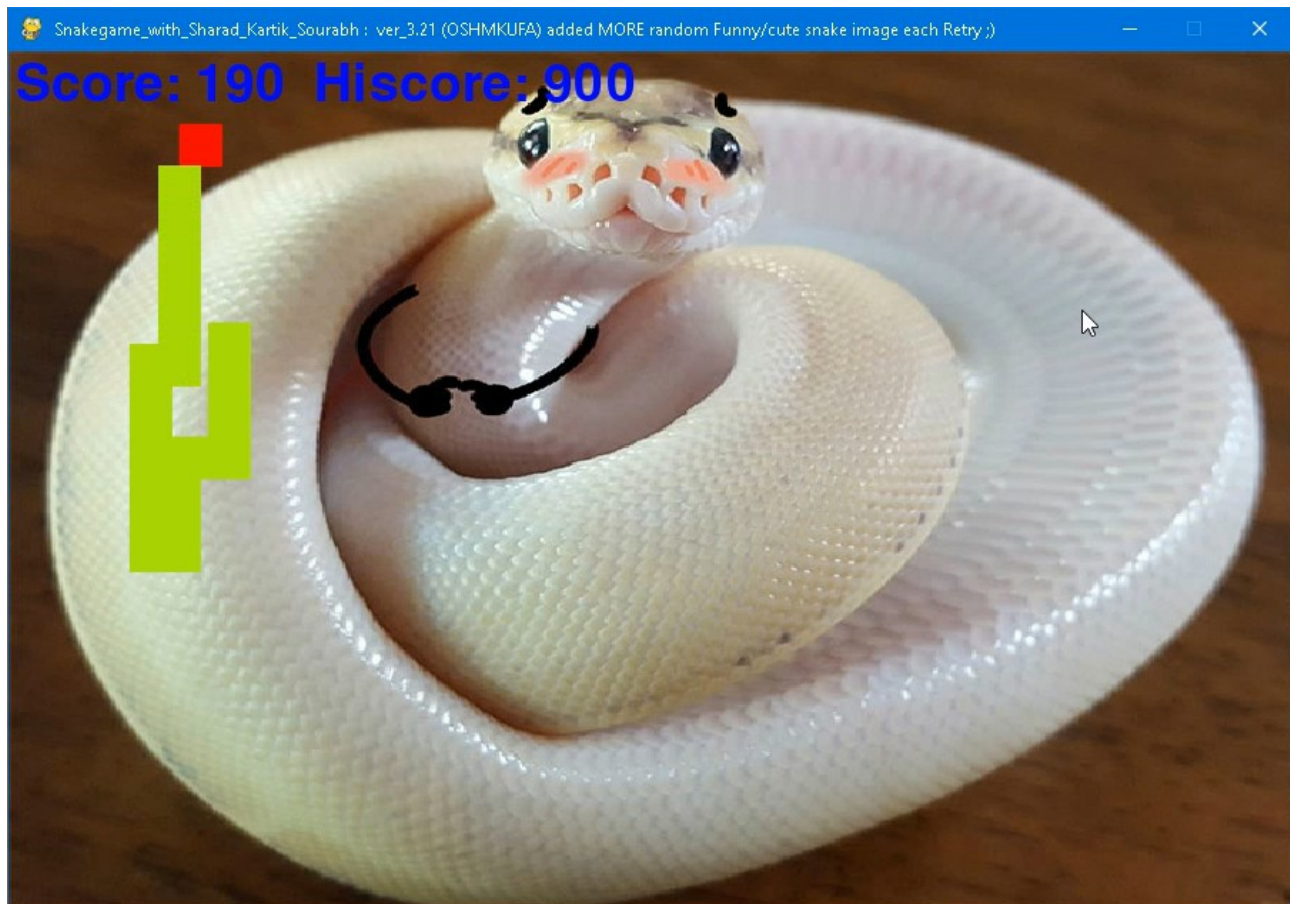
Score: 190 Hiscore: 900

```
F:\Python stuff\SNAKEGAME_v3.21>python snakegame_v3.21.py
pygame 2.1.2 (SDL 2.0.18, Python 3.10.1)
Hello from the pygame community. https://www.pygame.org/contribute.html
successful connected to python database
write a username:Watashi
data insertion successfully
```

```
mysql> use  snakegamescores;
Database changed
mysql> select * from scores;
+-----------+-------+
| name      | score |
+-----------+-------+
| sharad    |   160 |
| chintudon |   500 |
| gabruz    |   558 |
| sujeet    |   600 |
| rohan     |   110 |
| sumit     |   140 |
| joydeep   |   150 |
| tyson     |     0 |
| sharad057 |    30 |
+-----------+-------+
9 rows in set (0.00 sec)

mysql>
```

Conclusion:

At last i want to say that that i enjoyed creating this project and project report very much. I realised that studying a programming language from book gives less knowledge than creating a project and researching and fixing errors, understanding errors, understanding different terms etc.

And i had to make it again as my computer hard disk got completely corrupt and i was so sad even i didn't thought i will make this again, but i remembered a quote from my fav. Anime Steins;Gate and that quote was "**Keep the past, for all intents and purposes, where it is**." so i moved on, borrowed a laptop and downloaded Ubuntu on it and installed it on my pc. Installed Python and Pygame etc and here i am completing my project report 😁!

Moral of the Story: Do backup regularly and use cloud storage. And here's two of my fav quotes from Linus Torvalds:

"Most good programmers do programming not because they expect to get paid or get adulation by the public, but because it is fun to program."
— *Linus Torvalds*

"Theory and practice sometimes clash. And when that happens, theory loses. Every single time."
— *Linus Torvalds*

Thank you for reading!

Linus Torvalds

Bibliography:

1. https://www.codewithharry.com/

2. https://www.youtube.com/channel/UCeVMnSShP_Iviwkknt83cww

3. https://www.python.org/

4. https://askubuntu.com/

5. https://stackoverflow.com/

6. https://www.pygame.org/

7. https://drive.google.com/drive/u/0/folders/1nrW2kkDA6tR7rZxCVk3-qvVmVkyziWCH

- i downloaded <u>music</u> and <u>background</u> photo of the Snakegame from google.

- I understood <u>python code</u> for the game from CodeWithHarry Youtube channel.

- I used <u>askubuntu</u> for info on installing pip and Pygame on Ubuntu 20.04 LTS.

- I saved my game files on google drive. Link is on 7th position.

- I used <u>stack overflow</u> for troubleshooting errors in my game. Most were indentation and case related.

- That's all i think!