

Python: Assignment # 2

Part 1: Discover Building Blocks of Code with Scratch

Task 1: Guess the code

Guess how many times the repeat loop and what degree of turn will be implemented to form figure 1.1 and figure 1.2

Explain by making the video and sharing it within the group.

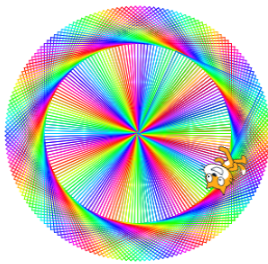
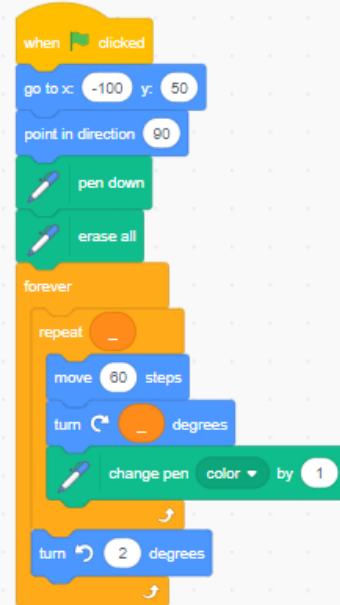


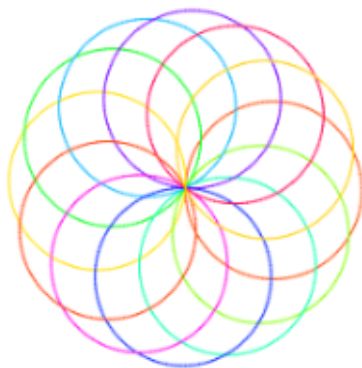
figure 1.1



figure 1.2



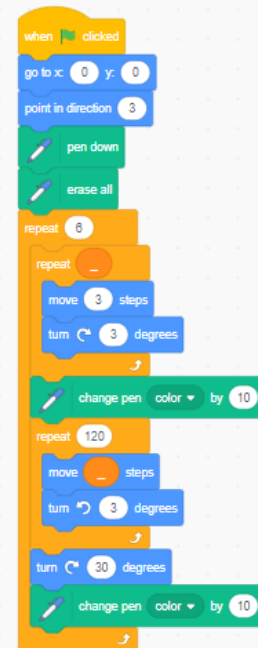
Look at the code two given to the right for the below figure.



Task 2: Your creativity

Now repeat task 1 by using different values for Repeat and Turn.

Explain it by making videos



Part 2: Exercise of Python Loops

Task 1: Table Printing

- Write a simple table printing as we did in the class, using a loop.
- Write a program to print an odd number table using a while loop
- Write a program to print an even number table using a while loop
- Write a table in reverse order.

```
-----Odd table Printing-----
Enter the number of which you want table: 16
Enter the range: 10
16x1=16
16x3=48
16x5=80
16x7=112
16x9=144
```

Task 2: Series Printing

- Write a program to print cubes of number given as input
- Write a program that takes starting and ending point as input and print the cubes of numbers within the range

```
Enter the number: 8
The cube of 8 is: 512
```

```
Enter the starting number: 2
Enter the ending number: 9
The cube of 2 is: 8
The cube of 3 is: 27
The cube of 4 is: 64
The cube of 5 is: 125
The cube of 6 is: 216
The cube of 7 is: 343
The cube of 8 is: 512
The cube of 9 is: 729
```

- Write the following series:(#HINT: use of multiple variables)
 - 1 100 2 150 3 200 4 250... 10 550
 - 100 15 90 14 80 13 70 ... 0 5
 - 2 3 4 9 8 27 16 81 32 ... 1024 59049
 - 32 81 16 27 8 9 1 0

Hacker Challenge 🕶️🕶️🕶️ : Series Printing

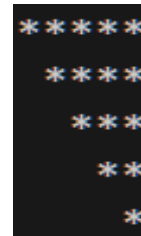
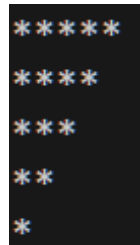
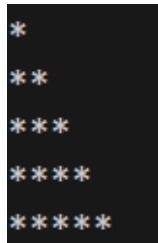
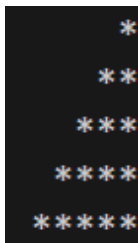
Print the following series:(#HINT: see the above four tasks)

1 2 15 81 2 4 14 27 3 8 13 9 ... 10 1024 6 0

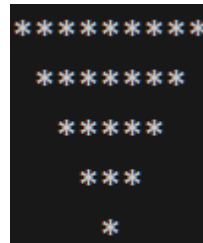
Task 3: Pattern Printing

Try making these shapes using a loop. Explain by making the video and sharing it with the group.

For Height as 5 (taken as input, keep in mind this value could change to e.g., 10 or 15 or 20 or so on), the following shapes should be printed.



Task 4: Pattern Printing



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Part 3: Scratch to Python

Convert all three sub-tasks in Part 1 into python code using Turtle library no need to change color.

```
tur = turtle.Turtle()
```

Instructions in Turtle Library:

```
tur.forward(number_of_steps)  
tur.backward(number_of_steps)  
tur.left(degree_of_anti-clockwise_turn)  
tur.right(degree_of_clockwise_turn)
```

These shapes must be showed:

