



Programming Fundamentals

Tutorial 5

Note: You are not allowed to copy-paste code snippets. You need to have a basic understanding of following concepts at the end of the Tutorial

- Use Python FOR loops
- Nested FOR loops
- FOR- Else
- Continue and break with FOR
- 1. Use Pycharm integrated development environment (IDE) to write and run the following programs. If it not installed, you can use Python IDLE.
- 2. Following code snippet demonstrates a simple nested FOR loop in python. Execute the code and try to understand the flow of the code

```
for i in range(1,100):

#outer loop iterates 1 to 99

for j in range(1,50):

#inner loop iterates 1 to 49

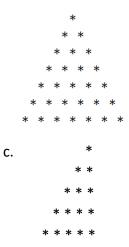
print(str(i)+" "+str(j))
```

- 3. Write a program that simulates the rolling of two six-sided dice and then counts the number of times that the dice generate a double (e.g. both dice shown the same value). Roll the dice 50 times and then print the number of doubles. Example output., Out of 50 you rolled 5 doubles.
- 4. Display the cube of the number up to given number
- 5. Print the following patterns using FOR loop
 - a. 55555 5555 555 55

b.







- 6. Writa a loop to find the factorial of a given number?
- 7. Write a program that generates a random number (0-10) and ask you to guess it. You have three attempts.
 - Define a random number with randit between 0-10.
 - Initialize guesses_left to 3.
 - Use a loop to let the user keep guessing so long as guesses_left is greater than zero.
 - Ask the user for their guess, just like the second example above.
 - If they guess correctly, print 'You win!' and break. Decrement guesses left by one.
 - Use an else: case after your loop to print: You lose.
- 8. Scrabble is a game where players get points by spelling words. Words are scored by adding together the point values of each individual letter. Write a program which takes a word as input and returns the equivalent scrabble score for that word.

```
score = {"a": 1, "c": 3, "b": 3, "e": 1, "d": 2, "g": 2,
  "f": 4, "i": 1, "h": 4, "k": 5, "j": 8, "m": 3,
  "l": 1, "o": 1, "n": 1, "q": 10, "p": 3, "s": 1,
  "r": 1, "u": 1, "t": 1, "w": 4, "v": 4, "y": 4,
  "x": 8, "z": 10}
```

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