**Python: As a scripting language**

**Subject - Unix Operating System**

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**PRN – 22610001 Class – TYIT**

**Assignment No – 10(a)**

**Title-** Write a program to display the following pyramid. The number of lines in the pyramid should not be hard-coded. It should be obtained from the user. The pyramid should appear as close to the centre of the screen as possible.

**Objective:**

1. To learn about python as scripting option.

**Theory:**

The pyramid task involves creating a visual pattern of characters (typically \*) arranged in a pyramid shape. The number of lines in the pyramid should be dynamic, meaning that the program should not have a fixed number of lines but instead should prompt the user to provide this input.

Key Concept

1. **User Input**: The number of lines in the pyramid will be determined by user input. We use the input() function in Python to get input from the user and convert it to an integer for further processing.
2. **Loops**: To generate the pyramid pattern, you will use loops, particularly **for loops**, to iterate over the number of lines and print each line with an appropriate number of stars (\*).
3. **String Manipulation**: For each line of the pyramid, you will need to:

* Print the appropriate number of spaces to centre the stars.
* Print the stars in the correct pattern (odd number of stars in each row).

1. **Centring the Pyramid**: To make the pyramid appear centred on the screen, we need to adjust the number of spaces before the stars on each line. This can be done by calculating the maximum number of spaces needed (based on the number of lines) and adjusting the number of spaces accordingly for each line.

**Program:**

def print\_pyramid(n):

# Maximum width of the pyramid

max\_width = 2 \* n - 1

# Loop to print each row

for i in range(1, n + 1):

# Calculate the number of stars to print for this row

stars = 2 \* i - 1

# Calculate the number of spaces before the stars to center the pyramid

spaces = (max\_width - stars) // 2

# Print spaces and stars

print(" " \* spaces + "\*" \* stars)

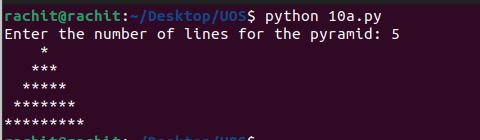
# Get the number of lines from the user

n = int(input("Enter the number of lines for the pyramid: "))

# Call the function to print the pyramid

print\_pyramid(n)

**Output:**

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**Conclusion:**

1. Basics of python like the concept of loops learnt

2. Conditional statements learn