



National University of Computer & Emerging Sciences



AL2002 – Artificial Intelligence – Lab (Spring 2025)

BSCS-6B

Lab Work 1 (Python Basics)

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Instructions:

Note: Carefully read the following instructions

1. You also have to submit .ipynb file.
2. Plagiarism is strictly prohibited, 0 marks would be given to students who cheat.
3. Write codes in PYTHON language and you may use any IDE or Notebook environment.
4. First think about the problem statements before starting your programming.
5. At the end when you have done your tasks, attached .py or .ipynb files on google classroom.
6. Paste your complete code in word file along with output in case of .py file (Make sure your submission is completed). In case of missing any file, marks will be deducted.
7. Please submit your file in this format 22Fxxxx_Name_SecB_Lab#
8. Do not submit your assignment after deadline. Late and email submission is not accepted.
9. Do not copy code from any source otherwise you will be penalized with ZERO Marks.
10. **YOUR MARKING WILL BE BASED ON THE PRIOR SUBMISSION OF YOUR CODE BEFORE DEADLINE.**

Lab Tasks:

1. In the AI Lab, where wonders unfold,
A realm of code, where stories are told.
Python, the language, so sleek and wise,
Guides our journey through data and skies.

With if and else, we craft logic's play,
Loops and arrays shape the digital way.
From neural networks to data so vast,
Python ensures our dreams hold fast.

Errors may come, but we debug and fight,
Turning challenges into insight.
Each line we write, a spark, a flame,
In this AI Lab, we play the game.

So here's to the lab, and Python, our guide,
With you, we conquer, horizons wide.



**A future built with logic and art,
AI and Python—forever a part.**

Write a program to print the above poem. Print the above statements in the specified format.

2. Write a program in Python to swap two numbers. Take two variables “num1” and “num2”. Assign values to both variables. Swap both numbers without using a third variable. Display output using String formatting %d (use for integers).
3. Write a program to find if the number is the factor of 24 or not. Take input value of a number from the user and then check if it is factor of 24 then print “Input number is factor of 24” otherwise print “Input number is not a factor of 24”.
4. Take input of all the courses you have studied till now, then print last course assigned in the list. Display output using String formatting %s (use for string).
5. Draw this pattern. Take input from the user for maximum no. of rows.

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6. There is a cleaning robot named “AutoCleaner”. The room has the shape of a rectangle. It needs to calculate the room and wants the length, width and height of the room. Create a function “Calculate_Area(length, width)” and return the calculated area. The Calculate_Volume(length, width, height) function takes the length, width and height as parameters and returns the calculated volume. Take the length, width and height of a rectangle from user. The program then display the area and volume of the rectangle in main function. After this, display “Cleaning Starts...”.
7. Write a calculator program in Python using ADD, SUB, SQUARE, CUBE functions. Take input values of Two numbers, an Operator and call the corresponding functions to perform these tasks.