Python Fundamentals

Lab 1

Description: This lab covers Python basics, including variables, type casting, math functions, strings, conditionals, and loops.

Deadline: 05 December 2025

Submission Instructions : Rename your file with your name for example (Mohamed_Hamed.py or Mohamed_Hamed.ipynb) and submit it via this form: Python Task1 Form

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Write a Python program that does the following:

1) Ask the user to enter his name and age and convert age to an integer and print them using f-strings, for example "Hello Mohamed, you are 26 years old"

2) Ask the user to enter the length and width of a rectangle, and convert these to floats and find the area of the rectangle

3) Use math functions to calculate and print:
❖ Square root of the age
❖ Age squared (age raised to the power of 2)
❖ Absolute difference between age and 50
❖ Ceiling of half the age
❖ Floor of half the age

5) Using the email "monaelgabaly@gmail.com", apply string functions to print:

- ❖ The first and last character
- ❖ The email in uppercase and lowercase
- ❖ The email capitalized and in title case
- ❖ The email reversed
- ❖ Number of times 'a' appears in the word
- ❖ Replace all 'a' with '@'
- ❖ The index of the first 'e'
- ❖ The email with no leading or trailing spaces

7) Use a for loop to print all numbers from 1 to the user's age.

8) Use a while loop to repeatedly ask the user to type "exit" to end the program. After the user types "exit", print "Goodbye, <name>!".