

Python Programming Assignment: Basic Concepts

Assignment Title: Introduction to Python and Basic Syntax **Instructions:**

- Answer all questions below.
- Write your Python code in a `.py` file or `.ipynb`
- Include comments in your code to explain your logic.
- push `Assignment1.ipynb` in your git repository and share its url in the form when asked.

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Part 1: Introduction to Python

1. Python Installation and Execution

- Install Python on your system (if not already installed).
- Write a Python script that prints your name, course name, and the Python version you're using.
- Execute the script from the command line and include a screenshot of the output.

1. Using IDLE

- Open IDLE and write a Python script that prints "Hello, Python World!".
- Save the script as `hello.py` and execute it using IDLE.

Part 2: Basic Python Syntax

1. String Operations

- Write a Python program that takes a user's first and last name as input and prints them in reverse order with a space between them.
- Use at least two string methods and explain their purpose in the comments.

1. Numeric Data Types and Conversion Functions

- Write a Python program that takes an input number from the user, converts it to different numeric data types (integer, float, and complex), and displays the converted values.
- Explain the difference between these data types in comments.

1. Simple Input and Output

- Create a Python script that calculates the area of a rectangle. The script should:
- Prompt the user to enter the length and width of the rectangle.
- Calculate the area.
- Display the result using the `print` function.

1. Using the `format` Method

- Modify the rectangle area program to format the output so that it displays the area with two decimal places.

1. The `%` Method and `print` Function

- Write a Python script that takes three numbers as input and prints their average using the `%` method for string formatting.
- Also, use the `print` function to display a message that states, "The average of the three numbers is: [calculated average]".

Part 3: Language Components

1. Control Flow (if Statements and Loops)

- Write a Python program that asks the user for a number and determines whether it is positive, negative, or zero.
- Implement a loop that continues to ask the user for a number until they enter 'exit'.
- Use `break` to exit the loop and `continue` to prompt for a new number if the input is not 'exit'.

1. Relational and Logical Operators

- Create a Python script that takes two numbers as input and prints whether both numbers are even, odd, or one of each using relational and logical operators.

1. For Loop and Bitwise Operators

Write a Python program that takes an integer input and prints its binary, octal, and hexadecimal equivalents using a for loop and bitwise operators.

Submission Requirements:

- Ensure that your code is well-commented and follows Python naming conventions.

Assignment Submission URL: <https://forms.office.com/r/Kx2nBmBWSu>
(<https://forms.office.com/r/Kx2nBmBWSu>)