Sharda School of Engineering and Technology, Greater Noida, UP

Assignment No-1
Based on UNIT-1
CSE114: Application based programming in python

Syllabus

Python Environment, Variables, Data Types, Operators.
Conditional Statements: If, If- else, Nested if-else.
Looping: For, While, Nested loops.
Control Statements: Break, Continue, And Pass. Comments

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1. What is the purpose of the "if" statement in Python, and how does it differ from "if-else" statements?
2. Explain the concept of nested if-else statements in Python. Provide an example scenario where nested if-else statements might be useful.
3. How do you use the "for" loop in Python, and what are the advantages of using it over other looping structures?
4. Differentiate between the "break" and "continue" statements in Python, and provide examples of situations where each would be useful.
5. What is the significance of the "pass" statement in Python, and when would you use it in your code?
6. How can you comment your Python code, and why is commenting important in programming?
7. Describe the role of variables in Python, and list the rules for naming a variable in Python
8. What is the purpose of operators in Python, and how are they used to manipulate variables and data?
9. Explain the concept of a "while" loop in Python and compare it to the "for" loop. When would you choose one over the other?
10. Provide an example of a situation where nested loops in Python would be necessary, and explain how they contribute to solving the problem at hand.
11. What do you understand by docstring in Python?
12. Create a Python program that uses nested loops to print a pyramid pattern of numbers. The user should input the height of the pyramid, and the program should generate the pattern accordingly.
13. Write a Python program that simulates a grading system. The user inputs a numerical grade, and the program should output the corresponding letter grade

(A, B, C, D, or F) based on the following criteria: A (90-100), B (80-89), C (70-79), D (60-69), F (0-59).

14. Implement a Python program that uses a combination of loops and control statements to find and print all prime numbers between 1 and 100. Additionally, comment on your code to explain the prime number generation logic.
15. Write a Python program that takes a sentence as input from the user and counts the number of vowels (both upper and lower case). Additionally, replace all spaces with underscores in the sentence.
16. Create a Python script that prints the current version of Python installed on your system.
17. Construct a Python Program to find the Sum of the First and Last Digit of a given number.
18. A student will not be allowed to sit an exam, if his/her attendance is less than 75%. Take the following input from the user
    a. Number of classes held
    b. Number of classes attended
    c. Print percentage of class attended
    d. Is a student allowed to sit an exam or not?
    e. If student is having medical cause, ask form the user if he/she is having medical cause or not (‘Y’ or ‘N’) and print accordingly.

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