PVP Siddhartha Institute of Technology

Department of CSE

Assignment – 1 Advanced Python Programming

Course Code: 23CS6401 | B.Tech CSE | Semester: II

Answer the following questions:

Q1. Write a Python program using map, filter, and reduce to calculate the factorial of all even numbers from a list.

Q2. Demonstrate the use of iterators and generators by creating a custom generator that yields Fibonacci numbers up to n.

Q3. Develop a Python program to parse a JSON file containing student records and display students who scored more than 80 in Mathematics.

Q4. Write a program that validates a given phone number and PAN number using regular expressions.

Q5. Create a NumPy program to generate a 5x5 random matrix, find its transpose, and compute row-wise and column-wise sums.

CO – Bloom's Level Mapping:

Q.No	CO	Level
1	CO1, CO2	L3
2	CO1	L2
3	CO2	L3
4	CO1, CO2	L3
5	CO3	L3

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Assignment – 2 Advanced Python Programming

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Answer the following questions:

Q1. Write a Pandas program to clean missing values, perform group-by aggregation, and visualize results using a dataset of your choice.

Q2. Implement a multithreaded program in Python where multiple threads update a shared counter with proper synchronization.

Q3. Develop a client-server chat application in Python using TCP sockets where multiple clients can send and receive messages.

Q4. Using TensorFlow, create and train a simple neural network model for predicting house prices based on features (e.g., size, rooms, location).

Q5. Compare the performance of two models (one built with TensorFlow and another with Keras) on the same dataset. Discuss the differences in results.

CO – Bloom's Level Mapping:

Q.No	CO	Level
1	CO3	L3
2	CO4	L3
3	CO4	L3
4	CO5	L4
5	CO5	L4