CET-225

Operating Systems

Experiment # 14

Experiment Title

Open-Ended Lab Activity: Simulating a Simple Parking Lot Management System

Assessment of CLO(s): 04

Performed on _____

Student Name:			
Roll No.		**Group**	
Semester		**Session**	

Total (Max)	**Performance (03)**	**Viva (03)**	**File (04)**	**Total (10)**
Marks Obtained				
Remarks (if any)				

Experiment evaluated by

Instructor's Name	**Engr. Bushra Aziz**		
Date		**Signature**	

Task:

Imagine a **parking lot** with **5 parking spaces** and a stream of **10 cars** arriving randomly.

- Each car needs to park in a space, stay for a random amount of time, and then leave.
- If no spaces are available, the car must wait until one is free.

Your goal is to write a program that:

1. Simulates the behavior of cars entering and leaving the parking lot.
2. Ensures no two cars occupy the same parking space simultaneously.
3. Prevents issues like cars waiting indefinitely.

Deliverables:

1. **Program Code**:
    - A well-documented program that simulates the parking lot scenario and includes synchronization mechanisms.
2. **Short Report**:
    - Describe the strategy you used and any variations implemented.
    - Highlight challenges faced and how you solved them.
    - Discuss insights gained from experimenting with variations.