Assignment-7
The Random and Math Packages

Subject: CSW1 (CSE 2141)
Session: Sep 2025 to Jan 2026
Branch: Computer Science and Engineering (CSE)
Section: All
Course Outcome: CO5
Program Outcomes: PO1, PO2, and PO5
Learning Levels: Remembering (L1), Understanding (L2), Application (L3), Analysis (L4) Evaluation (L5), and Creation (L6)

Sl. no.	**QUESTIONS**	**Learning Levels**
Q1.	Design a Python program that simulates tossing a fair coin 1,000 times using random.choice(["H","T"]) or equivalent. Count Heads and Tails, compute probabilities, and display results.	L1, L2
Q2.	Write a Python program to generate 10 random strings, each of length 8, using only lowercase letters. Use random.randint() or random.choice() to pick characters.	L2, L3
Q3.	Simulate rolling two six-sided dice 10,000 times using random.randint(1, 6). Count how often each sum (2–12) appears and compute simulated probabilities.	L2, L3
Q4.	Write a Python program that generates 5,000 random integers between 0 and 9 using random.randint(0, 9). Create a frequency table showing how many times each digit (0–9) appears and compute the ratio of actual hits to expected hits (n/10).	L2, L3
Q5.	You are given a list of 8 student names. Write a Python program that uses random.shuffle() to randomly rearrange the students and assign them into 4 project teams (Team A, B, C, D), each containing 2 students. Print the team assignments. Example Output: *Team A: John, Riya* *Team B: Meera, Amit* *Team C: Rahul, Zara* *Team D: Sneha, Kunal*	L2, L3

Q6.	Write a Python function that simulates spinning a 6-segment wheel (segments numbered 1 to 6) 2,000 times. Use random.randint(1, 6) to generate results. After simulation, print: 1. Count of each segment 2. Probability of each segment 3. The segment with the highest appearance 4. The segment with the lowest appearance	L3, L4
Q7.	Create a Python program that: 1. Initializes a **list of 52 cards** represented as integers 0–51 2. Uses `random.shuffle()` to shuffle the deck 3. Deals the first 5 cards	L3, L4
Q8.	Create a Python program that: 1. Randomly selects **100 letters** from `'a'` to `'z'` using `random.choice()` 2. Counts how many times each letter appears 3. Calculates **frequency** of each letter (frequency / 100)	L3, L4
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