

CS2304 JAVA PROGRAMMING

Course Instructor: V P Jayachitra

WEEK 2 SCOPE, VARIABLES, ARRAY AND SELECTION STATEMENTS

Instruction:

- Use meaningful variable names (totalAccounts, not ta)
- Consistent indentation
- Proper error handling
- Proper comment to follow the question requirement

1. Write a program to demonstrate variable scope in a Bank Account System with static variable totalAccounts = 0, instance variables accountNumber and balance, and a method deposit(int amount) using local variable depositAmount. Expected output should show deposit details for each account and total accounts created.
2. Write a program to track student attendance for 5 days (Monday-Friday) with 8 hours per day using a 2D array.
Input: Enter 1 for present or 0 for absent for each hour of each day.
Output: Display daily attendance percentage for each day and overall weekly attendance percentage.
3. Write a Java program that counts login failures only when the user is NOT "admin" and the password is wrong. Use the && operator to check conditions so the fail count increases only if needed. Print the fail count each time a non-admin login fails.
4. Write a Java program that checks if a patient's age is between 18 and 65 (inclusive) to determine vaccine eligibility. If eligible, verify that their appointment number is a 3-digit number and check if it is even to assign a priority slot; otherwise, assign a regular slot. Then, print a gift based on the last digit of the appointment number using a switch statement: print "Gift: Pen"

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for last digit 1, "Gift: Mask" for 2, "Gift: Sanitizer" for 3, and "No special gift." for all other digits.

5. Write a Java program that reads a string from the user and convert the input to lowercase to handle uppercase letters. Use a character array to check each character and keep track of the counts. Finally, print the frequency of each vowel.

Hint: Use the `toCharArray()` String method to convert the string into characters. Use `toLowerCase()` String method to convert the input to lowercase

6. Write a Java program that takes input for a 3x3 matrix of numbers. Calculate and print the sum of each row. Display the row number with the highest sum.

7. Write a Java program that asks the user to enter the color of a traffic light (either "red", "yellow", or "green") . Use a proper selection statement to check the input and print "Stop" if the color is red, "Ready to move" if yellow, and "Go" if green. If the input is anything else, print "Invalid color".

Hint: convert the input to lowercase before the switch.