



BABU MADHAV INSTITUTE OF INFORMATION TECHNOLOGY, UTU

Integrated M.Sc.(IT)

Semester-II

060010210 | CC5 Object Oriented Programming

Unit-1: Introduction to Object Oriented Programming

Sr. No.	Problem Definition
1.	Adam has 200 Rupees. He needs to convert rupees in paisa and he often face the problem while doing conversion. So give the solution for the given problem.
2.	Write a C++ program that calculates area of circle where value of $\text{PI}=3.14$ must be constant.
3.	Write a C++ program that calculates average of five numbers.
4.	Take two inputs from user for two variables C and D. Write a C++ program to interchange the contents of C and D.
5.	Write a C++ program that calculates simple interest. $\text{Simple Interest} = (\text{Principal Amount} * \text{Time Period} * \text{Interest Rate}) / 100$
6.	A Dearness allowance is 40% and rent allowance is 20% of Jack's basic salary. Calculate his gross salary. $\text{Basic Salary} * \text{Percentage} / 100$
7.	Write a C++ program that input any integer number and print its absolute value. How far a number is from zero: "6" is 6 away from zero, and "-6" is also 6 away from zero. So the absolute value of 6 is 6, and the absolute value of -6 is also 6
8.	Write a program to enter the temperature and print the following message according to the given temperature by using if else ladder statement. 1. $T \leq 0$ "Its very very cold". 2. $0 < T < 10$ "Its cold". 3. $10 < T \leq 20$ "Its cool out". 4. $20 < T \leq 30$ "Its warm". 5. $T > 30$ "Its hot".
9.	Write a C++ program that input any number and check whether the number is odd or even.
10.	Write a C++ program that input any number and check whether the number is positive, negative or zero.



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11.	Write a C++ program that input any year and check whether the year is leap year or not.
12.	<p>Write a C++ program that input percentage and display the class according to the percentage.</p> <p>Percentage is between 70-100 then Class should be Distinction</p> <p>Percentage is between 60-69 Class should be First</p> <p>Percentage is between 50-59 Class should be Second</p> <p>Percentage is between 40-49 Class should be Pass</p> <p>Percentage <40 then print Fail</p>
13.	<p>Write a C++ program that input five subjects mark and calculate percentage and display the class according to percentage. [Maximum marks is 100 and Passing Marks is 40]</p> <p>Percentage is between 70-100 then Class should be Distinction</p> <p>Percentage is between 60-69 Class should be First</p> <p>Percentage is between 50-59 Class should be Second</p> <p>Percentage is between 40-49 Class should be Pass</p> <p>Percentage <40 then print Fail</p>
14.	<p>Enter any five digit number and calculate the sum of its digits.</p> <p>(Hint: Use the modulus operator '%')</p>
15.	<p>Enter any five numbers using array and display the smallest and largest digit.</p> <p>(Hint: Use the modulus operator '%')</p>
16.	<p>Input any five numbers using array and display the sum of odd digits.</p> <p>(Hint: Use the modulus operator '%')</p>
17.	Enter five-digit number through the keyboard and write a C++ program to reverse the number.
18.	Consider a currency system in which three notes are of six denominations namely, Rs.1, Rs. 2, Rs. 5, Rs. 10, Rs. 50 and Rs. 100. N Rs. is entered through the keyboard and print sum of it, write a C++ program to compute the smallest number of notes that will combine to give Rs. N.
19.	Operator enters decided cost price and selling price of a product. Manager wants to check whether profit made or not. Write a program to solve following problem which also define how much profit he made or loss he incurred.
20.	Enter three angle values from keyboard. Write a program to check whether a triangle is valid or not. (Hint : a valid triangle = Sum of three angles is 180 degree)



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21.	<p>Use appropriate control structure to implement given problem statement.</p> <ol style="list-style-type: none">1. If user will input any character from a-e than program will print corresponding words till e. If user will input any character other than a-e than program will print I haven't learnt yet. For example: User input :d Output: Dog Elephant2. If user will input any character from a-e or A-E than program will print corresponding words till e. If user will input any character other than a-e or A-E than program will print I haven't learnt yet.3. If user will input any character from a-e or A-E than program will print corresponding words. If user will input any character other than a-e or A-E than program will print I haven't learnt yet. For example: User input : d Output: Dog
22.	Write a menu driven program to create simple calculator that perform operations like addition, subtraction, division and multiplication [Use switch and do-while].
23.	Write a program to identify if an input is a symbol, digit or character.