



BABU MADHAV INSTITUTE OF INFORMATION TECHNOLOGY, UTU
Integrated M.Sc.(IT)

Semester-II

060010210 | CC5 Object Oriented Programming

Practical List: 02		Enrollment No.:	Name:
Sr. No.	Practical Problems		
1.	Write a program to hold the details (enro, name, percentage, grade) of 10 students. Provide the facility to view details of the topper as well as to view details of a student by providing his/her enrollment number.		
2.	Create two classes DM and DB which stores values of distances. DM stores distances in meters and centimeters. DB stores distances in feet and inches. Write a program that can read values for the class objects. Add one object of DM with another object of DB. Use friend function to carry out addition's operations. And display it result in meter and centimeter.		
3.	Create the classes named DATE and TIME. Create a friend function which can act as a bridge between both the classes for finding date and time. Make a proper method which can take seconds for finding Time and also day, month and year for finding Date.		
4.	Write a program by creating two classes named "Length" and "Distance" which can convert meter to kilometer using proper methods. [Take the use of friend class.]		
5.	Create a class called "counter" by using appropriate methods count number of objects using static data members and member function.		
6.	Design a system for the following using a class called STOCK with suitable member functions and constructors. A book shop maintains the inventory of books that are being sold at the shop. The list includes details such as author, title, price, publisher and stock position. Whenever a customer wants a book, the sales person inputs the title and author; and the system searches the list and displays whether it is available or not. If it is not available, then an appropriate message must be displayed. If it is available, then the system displays the book details and requests for the number of copies required. If the requested copies are available, the total cost of the required copies will be displayed, otherwise the message "Sorry! These many copies are not in stock" will displayed.		
7.	Define a class Travel in C++ with the description given below: Private Members: T_Code of type string No_of_Adults of type integer No_of_Childern of type integer Distance of type integer TotalFare of type float		



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Public Members:

- A constructor to assign values as follows:
 T_Code with the word "NULL"
 No_of_Adults as 0
 No_of_Childern as 0
 Distance as 0
 TotalFare as 0

- A function AssignFare() which calculates and assigns the value of the data member TotalFare as follows:

For each Adult

Fare (Rs)	For Distance (Km)
500	≥ 1000
300	$< 1000 \ \& \ \geq 500$
200	< 500

For each Child the above Fare will be 50% of the Fare mentioned in the above table.

For example:

If distance is 750, No_of_Adults = 3 and No_of_Children = 2

Then TotalFare should be calculated as

$\text{No_of_Adults} * 300 + \text{No_of_Children} * 150$

i.e., $3 * 300 + 2 * 150 = 1200$

- Take a function EnterTravel() to input the values of the data members T_Code, No_of_Adults, No_of_Children and Distance; which can invoke the AssignFare function.
- Take a function ShowTravel() which displays the content of all the data members for a Travel.

8. Create a class called SHAPE which has private data member "area" which will be used to get value for finding area of square, area of rectangle, area of circle, by using a default, parameterized and copy constructor. Define all the constructors outside the class.

9. By taking the help of memory management operator, write a C++ program to get and display GPA (Grade Point Average) of N number of students.

Objective(s)	Basic programming concepts.
Pre-requisites	Fundamentals of Programming.
Duration for Completion	8 Hours
PEO(s) to be achieved	To provide quality practical skill of tools and technologies to solve industry problems.
PO(s) to be achieved	Ability to use the techniques, skills and modern tools as necessary for software development.
CO(s) to be achieved	Recognize, design, implement and use classes and methods.
Solution must contain	Program and output
Nature of submission	Handwritten



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References for solving the problem	--
Post Laboratory questions	<ol style="list-style-type: none">1. Write the significance of nameless object by giving example.2. How the memory is dynamic allocated for objects? Give one proper example using constructor and destructor.
Assessment	
Faculty Signature	
Date	