

# Shri Shambhubhai V. Patel College of CS &BM

## SYBCA Sem-3

### Object Oriented Programming Practical

### Assignment-1

**Date: 05<sup>th</sup> July**

1.	Write a program to print the area and perimeter of a triangle taking the value of sides from user by creating a class named 'Triangle' with a function to print the area and perimeter.												
2.	a) Print the average of three numbers entered by the user by creating a class named 'Average' having a function to calculate and print the average.  b) Print the average of three numbers entered by the user by creating a class named 'Average' having a function to calculate and print the average without using objects												
3.	Write a program that would print the information (name, year of joining, salary, address) of three employees by creating a class named 'Employee'. The output should be as follows: <table><tr><td>Name</td><td>Year of joining</td><td>Address</td></tr><tr><td>Robert</td><td>1994</td><td>64C- WallsStreat</td></tr><tr><td>Sam</td><td>2000</td><td>68D- WallsStreat</td></tr><tr><td>John</td><td>1999</td><td>26B- WallsStreat</td></tr></table>	Name	Year of joining	Address	Robert	1994	64C- WallsStreat	Sam	2000	68D- WallsStreat	John	1999	26B- WallsStreat
Name	Year of joining	Address											
Robert	1994	64C- WallsStreat											
Sam	2000	68D- WallsStreat											
John	1999	26B- WallsStreat											
4	Create a class student with roll no, name marks (of 5 subject). write a program to print the total marks of only the roll no given by the user (note: use array of objects and array within a class)												
5	Create a class bank with account no, account holder name. write a program to credit amount as well as debit amount from the account no. Amount should be debited only if the balance is > 500. [use array of objects.												
6	Create a class directory with data members phone number, name. write a program to search phone number when user gives name as input and find name when user gives phone number as input.												
7	Create a class bill with unit, amount as members. Write a program to generate the bill with the following condition. 0 to 100 unit - Fix 150 Rs 101-200 unit - 1.50 Rs per unit 201-300 unit - 2.00 Rs per unit 301-400 unit - 2.50 Rs per unit 401-500 unit - 3.00 Rs per unit Above 500 unit - 4.50 Rs per unit												

# Shri Shambhubhai V. Patel College of CS & BM

## SYBCA Sem-3

### Object Oriented Programming

### Practical Assignment-2

**Date: 19<sup>th</sup> July**

1.	Write a program using function which accept two integers as an argument and return its sum. Call this function from main( ) and print the results in main( ).
2.	Write a program to swap two numbers using pass by reference.
3.	Write a Menu Driven program using overloading function. <ul style="list-style-type: none"> <li>1. Find Radius of Circle</li> <li>2. area of Rectangle</li> <li>3. Area of Triangle</li> <li>4. Exit</li> </ul>
4.	<p>Define a class BOOK with the following specifications:</p> <p>Private members of the class BOOK are</p> <p>BOOK NO            integer type</p> <p>BOOKTITLE        20 characters</p> <p>PRICE               float (price per copy)</p> <p>TOTAL_COST()    A function to calculate the total cost for N number of copies where N is passed to the function as argument.</p> <p>Public members of the class BOOK are</p> <p>INPUT()            function to read BOOK_NO. BOOKTITLE, PRICE</p> <p>PURCHASE()      function to ask the user to input the number of copies to be purchased. It invokes TOTAL_COST() and prints the total cost to be paid by the user.</p>
5.	<p>Define a class REPORT with the following specification:</p> <p>Private members:</p> <p>adno                4-digit admission number</p> <p>name                20 characters</p> <p>marks               an array of 5 floating point values</p> <p>average            average marks obtained</p> <p>GETAVG()          a function to compute the average obtained in five subject</p> <p>Public members:</p> <p>READINFO()       function to accept values for adno, name, marks. Invoke the function GETAVG().</p> <p>DISPLAYINFO()    function to display all data members of report on the screen.</p>
6.	Create two classes DB & DM. DM stores distances in Meters & Centimeters and DB in feet

	& inches. Write a program which will take input for both class objects and then add object of DM with object of DB. Use a friend function to carry out the addition operation.
7.	<p>Define a class to represent bank account. Include following members.</p> <p>Data members:</p> <ol style="list-style-type: none"> <li>1. Name of depositor</li> <li>2. Account number</li> <li>3. Type of Account (It may be saving or current)</li> <li>4. Balance amount in account.</li> </ol> <p>Member function:</p> <ol style="list-style-type: none"> <li>1. To assign initial value.</li> <li>2. To deposit an amount.</li> <li>3. To withdraw an amount after checking the balance.</li> <li>4. Display name and balance.</li> </ol> <p>Write a main program to test the program.</p>
8.	<p>Create a class time which contains hour and min as data member and gettime and puttime as member function. Write a program to perform addition of two objects of class time using objects as function argument.</p> <p>Example:</p> <p>Obj1= 2 hour 45 min</p> <p>Obj2= 3 hour 30 min</p> <p>Output= 6 hour 15 min</p>
9.	<p>Define a class shopping_cart which contains the item_code and item_price as data member of a class. Perform following operation.</p> <ol style="list-style-type: none"> <li>1. Take an input for item.</li> <li>2. Display total price of all items.</li> <li>3. Remove item from the cart.</li> <li>4. Display all items of a cart.</li> <li>5. Exit</li> </ol> <p>Create a menu drive program for all this operation.</p>
10.	<p>Write a program for telephone directory which may contains name and phone number. To perform following operation.</p> <ol style="list-style-type: none"> <li>1. Add records</li> <li>2. Display all records</li> <li>3. Search phone number</li> <li>4. Exit</li> </ol> <p>Write a menu driven program to perform all operation.</p>

# Shri Shambhubhai V. Patel College of CS & BM

## SYBCA Sem-3

### Object Oriented Programming

### Practical Assignment-3

**Date: 20<sup>th</sup> August**

1.	Write a program to maintain a telephone directory. Use add () and show () methods to add new entries and display the telephone numbers of person when the name of the person is given.
2.	Write a program that consists of 2 class time12 and time24. The first maintain time on 12-hour basis, whereas the other one maintain time on 24-hour basis. Provide conversion function to carry out conversion from object of one type to another.
3.	Create two classes DM and DB which store the value of the distances. DM stores distance in meters and centimeters and DB stores distance in feet and inches. Write a program that can add one object of DM with another object of DB. Use a friend function to carry out the addition operation. And this function will display answer in meter and centimeter.
4.	Create the M (Row) & * N (Column) matrix using NEW operator and find the highest number from upper triangular matrix. Also DELETE operator to be allocate the memory. Take appropriate member function to display the result in proper format.
5.	Write a program that consists of two classes, Rupee and Dollar. Provide conversion function to carry out conversion from object of one type to another.
6.	Define a class to represent a bank account for handling 10 customers. Include the following members. Data members: 1) Name of the A/c Holder 2) Account number 3) Balance amount in the account Member function: 1) To display the values 2) To deposit an amount 3) To withdraw an amount
7.	Create a class matrix and do the following: ---Add two matrix ---Multiply two matrix ---subtract two matrix
8.	Write a program that consists of 2 class time12 and time24. The first maintain time on 12-hour basis, whereas the other one maintain time on 24-hour basis. Provide conversion function to carry out conversion from object of one type to another.
9.	Write a program to find addition of 1 to 200 using + operator overloading
10.	Create a class with at least two data members and overload >> and << operators.

**SHRI SHAMBHUBHAI V. PATEL COLLEGE OF COMPUTER SCIENCE & BUSINESS  
MANAGEMENT  
S.Y.B.C.A (THIRD SEMESTER)  
Data Structure  
Practical Assignment 4**

**Date: 5<sup>th</sup> September**

1. Write a program to perform the following operations on stack using switch case:
  - a. Push
  - b. Pop
  - c. Peep tos
  - d. Change tos
  - e. Display
2. Given an infix expression, convert it to Reverse Polish Notation.
3. Given an infix expression, convert it to Polish Notation.
4. Write a program to find the factorial of given number using recursion.
5. Write a program to print Hemchandra series for a given number using recursion.
6. Implement Simple Queue using array and perform the following operations on it:
  - a. Insert an element
  - b. Delete an element
  - c. Display all the elements
7. Implement Circular Queue using array and perform the following operations on it:
  - a. Insert an element
  - b. Delete an element
  - c. Display all the elements
8. Implement DEQUE using array and perform the following operations on it:
  - a. Insert an element at front
  - b. Delete an element from front
  - c. Insert an element at rear
  - d. Delete an element from rear
  - e. Display all the elements