Faculty of Technology and Engineering

U & P U Patel Department of Computer Engineering

Date : 28 / 02 / 2022

Practical List

Academic Year	:	2021-22	Semester	:	2
Course code	:	CE144	Course name	:	Object Oriented Programming in C++

Set No.	Sr. No.	Aim
Basics Concepts of C++, Tokens Expression and Control structures		
1.	1.1	Write a C++ program that will print output in the following form. Make sure your output looks exactly as shown here (including spacing, line breaks, punctuation, and the title and author). **Note:** Use cout and cin objects and endl manipulator. **Expected Output:**  Attach the screenshot of output. **Question:** Differentiate between \n and endl in two points in below given tabular format:

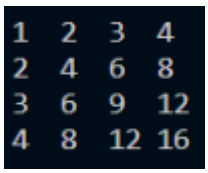
Sr. No.	\n	endl
1.		
2.		

	1.2	Write a program to create the following table by making use of endl and setw manipulator.

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

Expected Output:

Attach the screenshot of output.



Questions:

1. **Explain any three manipulators in the below given tabular format.**

Sr. No.	**Manipulator**	**Description**
1.		
2.		
3.		

1.3 Write a C++ program to add two floating numbers using pointer. The result should contain only two digits after the decimal.

Note: **Use fixed, scientific and setprecision() manipulators** for controlling the precision of floating point numbers.

Expected Output:

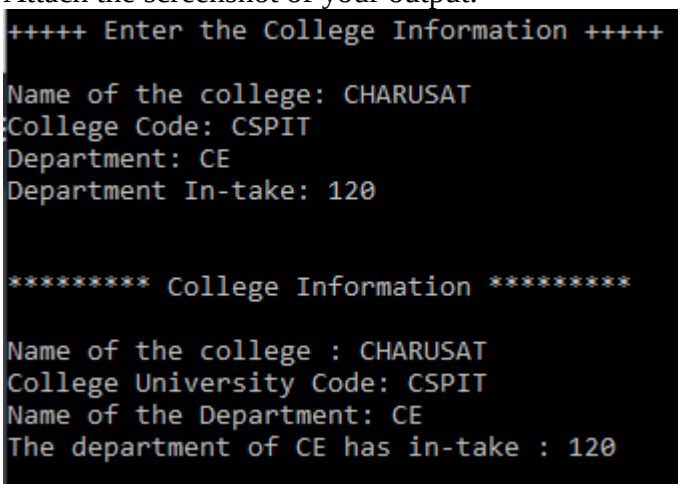
1. Fill the following table based on the outcome you get by executing the functions in given sequence- **fixed, scientific and setprecision().** Also attach the screenshot of output.

Sr. No.	**Input 1(in float)**	**Input 2 (in float)**	**Functions**	**Results**
1.			**Fixed**	
2.			**Scientific**	
3.			**Setprecision(2)**	

2. Fill the following table based on the outcome you get by executing the functions in given sequence- **scientific, fixed and setprecision().** Also attach the screenshot of output.

Sr.	**Input 1(in float)**	**Input 2 (in float)**	**Functions**	**Results**

		No. | | | | 1. | | | **Scientific** | 2. | | | **Fixed** | 3. | | | **Setprecision(2)** | **Questions:** 1. Which ios class function will be responsible for setting the number of decimal places?

2	2.1	Write a C++ Program to declare the struct named College_Details, by taking following data members:
		char college_name[10]; (eg. CHARUSAT)
		char college_code[10]; (eg. CSPIT/DEPSTAR)
		char deparment[5]; (eg. CE/CS/IT)
		int intake; (eg. 120)
		Collect the data from keyboard and display the same in appropriate view.
		
		Expected output:
		You may mention your own college code, department and intake.
		Attach the screenshot of your output.
		 
		`+++++ Enter the College Information +++++`
		
		`Name of the college: CHARUSAT`
		`College Code: CSPIT`
		`Department: CE`
		`Department In-take: 120`
		
		`********* College Information *********`
		
		`Name of the college : CHARUSAT`
		`College University Code: CSPIT`
		`Name of the Department: CE`
		`The department of CE has in-take : 120`
		
		Questions:
		1. Are you able to find the concept of struct that you studied in C Programing, similar to class? If yes, then in which ways?

	2.2	Write a C++ program to collect the details of student like roll_no, name, class and division(A/B) and display the same of 5 students. Declare the following data members in class as public: roll_no, name, class and division(A/B). Make use of two functions read and display as public for collecting information and displaying it respectively. **Note:** Create 5 different objects for 5 students. **Expected Output:** Fill the following table to showcase your outcome, also attach the screenshot of output.

Sr. No.	Name	Roll No	Class	Division(A/B)
1.				
2.				
3.				
4.				
5.				

Questions:

1. State the reason for creating object of class.

2.3 Write a C++ program to swap two numbers without using third variable, using the concept of class and object. Display the values of the variables before and after swapping.

Expected Output:

Attach the screenshot of output and fill up the below given table.

Sr. No.	Outcome	Variable_1 value	Variable_2 value
1.	**Before Swapping**		
2.	**After Swapping**		

3. 3.1 Find error in the following code and give reasons for each error:

```
#include<iostream>
using namespace std;
int main()
 {
 int no1=10, no2=12;
 int & x=no1;
 int & r;
 int & c = NULL;
 int & d[2] = {no1,no2};
 cout<<"x = "<< x+20;
 cout<<"no1="<< no1+10;
 return 0;
 }
```

Expected Output:

Attach the screenshot of output and fill up the below given table.

Sr. No.	Questions	Output	Remarks
1.	Can we declare an array of references?		
2.	Can we assign NULL		

		value to reference variable?		
	3.	Is **Reference variable** a pointer variable?		
	4.	Can we declare a reference variable without initializing it?		
	5.	Does Reference Variable change the original value of variable?		

3.2 Find output of the following code:

```
#include<iostream.h>
#include<conio.h>
int m=30;
int main()
{
 int m=20;
 {
 int m=10;
 cout<<"we are in inner block"<<endl;
 cout<<"value of m="<<m<<"\n";
 cout<<"value of ::m="<<::m<<"\n";
 }
 cout<<"we are in outer block"<<endl;
 cout<<"value of m="<<m<<"\n";
 cout<<"value of ::m="<<::m<<"\n";
 getch();
 return 0;
 }
```

Attach the screenshot of output.

Questions:

1. Explain how **scope Resolution operator** is used to access global version of a variable.

3.3 Write a program to enter a size of array. Create an array of size given by user **using "new" Dynamic memory management operator (free store operator).** Enter the data to store in array and display the data after adding 2 to each element in the array. Delete the array by **using "delete" memory management operator.**

Expected Output:

Fill the following table to showcase your outcome, also attach the screenshot of output.

Size of Array:		
Array Elements:		

After adding two to elements:		

Questions:

1. Where the new operator does allocate memory in system?
2. State two points on delete operator.

4. 4.1

Define three functions named divide (). First function takes numerator and denominator as an input argument and checks it is divisible or not, second function takes one integer numbers as input argument and checks whether the number is prime or not and Third function takes 3 float number as argument and finds out average of the numbers.

Note:

Use concept of **Function Overloading / static binding.**

Expected Output:

Fill the following table to showcase your outcome, also attach the screenshot of output.

Display	**Input**	**Output**
Input two numbers to check if it is divisible or not	Number1=____ Number2=____	Divisible/Not Divisible
Input a number to check if it is prime or not	Number=____	Prime/Non-prime
Enter three float numbers to get average of them	FNum1=____ FNum2=____ FNum3=____	Average = _____

Questions:

1. State the benefits of using function overloading

4.2

Write a function called tonLarge () that takes two integer arguments **call by reference** and then sets the larger of the two numbers to 100 using **Return by reference**. Write a main () program to exercise this function.

Expected Output:

Fill the following table to showcase your outcome, also attach the screenshot of output.

Display	**Inputs**	**Larger Number**	**Output**
Enter two numbers	Number1=____ Number2=____	Number1/Number2	Number1= Number2=

Questions:

1. Explain the difference of call by reference and return by reference, each in two points.

4.3

Write a inline function called power () that takes two arguments: a double value for **Base** and an integer for **Power**, and returns the result as double value. Use **default argument** as 2 for Base, so that if this argument is

omitted, the number will be squared. Write a main () function that gets values from the user to test this function.

Expected Output:
Fill the following table to showcase your outcome, also attach the screenshot of output.

Sr. No.	Inputs		Output
	Enter Base	**Enter Power**	**Result**
1.			
2.			

Questions:
1. Explain the situations where inline function cannot work?

5 | 5.1

Write a **C program defining Structure** Rectangle with data member's width and height. It has get_values() member functions to get the data from user and area() member functions to print the area of the rectangle.

Also create a **C++ Class** for the above program. Define the data members and both functions inside the class. Get the **area of the rectangle** as an output.

Expected Output:
Fill the following table to showcase your outcome, also attach the screenshot of output.

Result using C Structure

Inputs		Output
Height	**Width**	**Area of Rectangle**

Result using C++ class

Inputs		Output
Height	**Width**	**Area of Rectangle**

Questions:
1. Illustrate the difference between C Structure and C++ Class.

5.2

Write a C++ program having class **Batsman.** It has private data members: batsman_name, bcode (4 Digit Code Number), innings, not_out, runs, batting average. Innings, not out and runs are in integer and batting_average is in float.

Define following **function outside the class using scope resolution operator.**
1) Public member function getdata() to read values of data members.
2) Public member function putdata() to display values of data members.
3) **Private member function** calcavg() which calculates the batting average of a batsman. Also make this outside function **inline.**
Hint: *batting_average = runs/(innings – not_out)*

Expected Output:

Fill the following table to showcase your outcome, also attach the screenshot of output.

Parameters	Inputs	Outputs (Batting Average)
Name		
Bcode		
Total innings		
Enter not_out_timings		
Enter total runs		

5.3 Define class *Currency* having two integer data members rupee and paisa. A class has member functions enter() to get the data and show() to print the amount in 22.50 format. Define one member function *sum*() that adds two objects of the class and stores answer in the third object i.e. c3=c1.sum(c2). The second member function should add two objects of type currency passed as arguments such that it supports c3.add(c1, c2); where c1, c2 and c3 are objects of class *Currency*.
Also Validate your answer if paisa >100. Write a main( ) program to test all the functions.

Use concepts of Object as Function Arguments, function returning object and function overloading.

Expected Output:

Fill the following table to showcase your outcome, also attach the screenshot of output.

Using sum()		
Rupees	**Paisa**	**Total Amount**
Using add()		
Rupees	**Paisa**	**Total Amount**

5.4 Define a class **Dist** with int feet and float inches. Define member function that displays distance in 1'-2.5" format. Also define member function scale ( ) function that takes **object by reference** and scale factor in float as an input argument. The function will scale the distance accordingly.
For example, 20'-5.5" and Scale Factor is 0.5 then answer is 10'-2.75"

Expected Output:

Fill the following table to showcase your outcome as per inputs given, also attach the screenshot of output.

Feet	Inches	Scaling Factor	Output (Distance)
6	**2**	**2**	
3	**5**	**0**	
7	**0**	**3**	

5.5 Create a Class Gate for students appearing in Gate (Graduate Aptitude test for Engineering) exam. There are three examination center Vadodara, Surat, and Ahmedabad where Gate exams are conducted. A class has data members: Registration number, Name of student, Examination center. Class also Contains static data member ECV_Cnt, ECS_Cnt and ECA_Cnt which counts the number of students in Vadodara, Surat and Ahmedabad exam center respectively. Class Contains two Member function getdata () which gets all information of students and counts total students in each exam center and pudata () which prints all information about the students. Class also contains one static member function getcount () which displays the total number of students in each examination center. Write a program for 5 students and display the total number of students in each examination center.

Use static data member, static member function and Array of Objects.

Expected Output:

Fill the following table to showcase your outcome, also attach the screenshot of output.

	Inputs			**Output**		
Sr. No.	**Registration Number**	**Name**	**Initials of City (V/S/A)**	**V**	**S**	**A**
1.						
2.						
3.						
4.						
5.						

5.6 Create a Class Date having data members: int dd, mm, yyyy. Class has one member function to input the dates and another member function which prints the dates. Write a main() function which takes two dates as input. Write a friend function swapdates() which takes two objects by reference of type Date and swaps both the dates.

Use the concept of Friend function which takes objects by reference

Expected Output:

Fill the following table to showcase your outcome as per the given inputs, also attach the screenshot of output.

Sr. No.	Date	Month	Year	Before Swapping	After Swapping
1.	**7**	**12**	**2005**	**7-12-2005**	
2.	**4**	**10**	**2003**	**4-10-2003**	

	5.7	Create a class LAND having data members: length, width, area1. Write member functions to read and display the data of land. Also, calculates the area of the land. Create another class TILES having data members: l, w, area2. Write a member function to get the data of tile. Calculate the area of one tile. Class TILE has a member function named number_of_tiles() which is a friend of class LAND and takes the object of class LAND by reference which calculates the number of tiles which can be put over the land area. Write the main function to test all the functions. **Use the concept of member function of one class can be a friend function of another class.** **Expected Output:** Fill the following table to showcase your outcome, also attach the screenshot of output. Sample Input and Output are stated below. Try one by your self and fill up the table.

Input for Land		**Input for Tiles**		**Output**	
Length	**Width**	**Length**	**Width**	**Area of Land**	**No of required tiles**
100	**200**	**10**	**20**	**20000**	**100**

	5.8	Create a class Child having data members: name of the child and gender and a member function to get and print child data. Create another class Parent which is a friend class of child class. Class Parent have member function ReadChildData() which takes child's object by reference as input argument and Reads the childs data and DisplayChildData() which takes childs object as argument and displays childs data. Use the concepts of **Friend Class.** **Expected Output:** Fill the following table to showcase your outcome, also attach the screenshot of output. Sample Input and Output are stated below. Try one by your self and fill up the table.

Input		**Output**	
Name	**Gender**	**Name**	**Gender**
Aarya	**Dutta**	**Aarya**	**Dutta**

6	6.1	Write a C++ program having class **time** with data members: hr, min and sec. Define following member functions. 1) getdata() to enter hour, minute and second values 2) putdata() to print the time in the format 11:59:59 3) default constructor 4) parameterized constructor Use 52 as default value for sec in parameterized constructor. 5) copy constructor

6) Destructor.

Use the concepts of default constructor, parameterized constructor, Copy constructor, constructor with default arguments and destructor.

Expected Output:
Fill the following table to showcase your outcome, also attach the screenshot of output.

Results for Constructor	**Inputs**			**Outputs(HH:MM:SS)**
	Hours	**Minutes**	**Seconds**	
Default				
Parameterized				
Copy				

Questions:

1. **Differentiate Default, Parameterized and Copy constructor.**

7 | 7.1

Create a class Number having int num as member. The class has input and output functions. Overload unary operator (++) such that it supports N1=N2++ and N3=++N1 and Overload unary (-) such that it supports N3 = - N3. Also define default, parameterized and copy constructor for the class.
Use the concept of Overloading Unary Operators.

Expected Output:
Fill up the below given table, according to the obtained output. Do it for two different inputs of your choice. Attach the screenshot of the output.

Inputs	**Outputs**		
Number	Unary (++) N1=N2++	Unary (++) N3=++N1	Unary (-) N3 = - N3

Question:

1. Also explain use of nameless object in operator overloading.

7.2

Create a class complex having data members int real, img and member function to print data. Overload Unary operator (-) using friend function such that it supports – C1 where C1 is the object of class complex. Also define default and parameterized constructor for the class.
Use the concept of Overloading Unary Operators with friend function.

Expected Output:
Fill up the below given table, according to the obtained output. Do it for two different inputs of your choice.

Real Number	Imaginary Number	Complex Number	
		-C1	C1

7.3 Create a class String having character array. Class includes constructor and required member functions to get and display the object. Overload the operators +(s3=s1+s2), ==(s1<s2), +=(s1+=s2) for the class.
Use the concept of Overloading Binary Operators

Expected Outputs:
Fill up the below given table, according to the obtained output. Attach the screenshot of the output.

Inputs		Output		
String_1	**String_2**	**Concatenation**	**String_1 and String_2 is equal or not**	**Add String_2 to String_1**

7.4 Create a class Celsius with float. Define appropriate member functions such that it support the statements: C1=30.5F; float temperature; temperature=C2; Use the concept of **Type conversion from basic type to class type and class type to basic type.**

Expected Outcome:
Fill up the below given table, according to the obtained output. Attach the screenshot of the output.

Value of C1	Value of Temperature

7.5 Create classes Celsius and Fahrenheit with float. Define appropriate member functions such that they support the statements in main( ): Celsius C1, C2=5.0; Fahrenheit F1, F2; F1=C2; C1=F2.
Use the concepts of **Type conversion from class type to class type. Write this Program in two ways. Define appropriate member function in class** Celsius**. Define appropriate member function in class** Fahrenheit.

Expected Output:
Fill up the below given table, according to the obtained output. Attach the screenshot of the output.

Input	Output

		<table><tr><th>Temperature in Celsius</th><th>Temperature in Fahrenheit</th><th>Celsius to Fahrenheit</th><th>Fahrenheit to Celsius</th></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>
8	8.1	Define a Base Class Vegetable having data member Color and member function getdata() which takes color as an input and putdata() which print the color as an output. Vegetable Class has one subclass named Tomato having data members weight and size and member function gtdata() which takes weight and size as an input and ptdata() which prints weight and size as output. Write a C++ Program which inherits the data of Vegetable class in Tomato class using Single Inheritance. **Expected Output:** Fill up the below given table, according to the obtained output. One sample is given, enter another one according to your choice. Attach the screenshot of the output. <table><tr><th colspan="3">Input for Vegetable</th><th colspan="3">Output for Vegetable</th></tr><tr><th>Color</th><th>Weight</th><th>Size</th><th>Color</th><th>Weight</th><th>Size</th></tr><tr><td>Green</td><td>4</td><td>12</td><td>Green</td><td>4 Kg</td><td>12</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>
	8.2	Write a program to create a class **Medicine** which stores type of medicine, name of company, date of manufacturing. Class **Tablet** is inherited from Medicine. Tablet class has name of tablet, quantity per pack, price of one tablet as members. Class **Syrup** is also inherited from Medicine and it has quantity per bottle, dosage unit as members. Both the classes contain necessary member functions for input and output data. Write a main ( ) that enter data for tablet and syrup, also display the data. **Use the concepts of Hierarchical Inheritance.** **Expected Output:** Fill up the below given table, according to the obtained output. Attach the screenshot of the output. **For Medicine type: Tablet** <table><tr><th>Company Name</th><th>Manufacturing date</th><th>Name of tablet</th><th>Quantity per pack</th><th>Price per tablet</th></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table> **For Medicine type: Syrup** <table><tr><th>Company Name</th><th>Manufacturing date</th><th>Quantity per Bottle</th><th>Dosage in ml</th></tr></table>

	8.3	Create a Class alpha having data member: int x and one argument constructor which initializes the value of x. It also has member function which displays the value of x. Create another class beta which contains data member: float y and one argument constructor which initializes the value of y. It also has member function which displays the value of y. Create a Class Gamma which publicly inherits from class alpha and class beta and has two data members: int m, n and a constructor which passes argument to the base class constructor as well as initializes its own data members. Class Gamma also has member function to print the values of m and n. Write main function which creates object of class Gamma which passes values of base class constructor as well as derived class constructor. **Use the concept of Multiple Inheritance and Constructor in Derived Class.** **Expected Output:** Fill up the below given table, according to the obtained output. Attach the screenshot of the output.
	8.4	Define a class Hospital having rollno and name as data members and member function to get and print data. Derive a class Ward from class Hospital having data members: ward number and member function to get and print data. Derive another class Room from Hospital having data member bed number and nature of illness and member function to get and print data. Derive class Patient from Class Ward and Class Room. In main () declare 5 object of Class Patient and get and display all the information. **Use the concept of Virtual Base Class and Hybrid Inheritance** **Expected Output:** Fill up the below given table, according to the inputted data for 5 patients. Attach the screenshot of the output.
	8.5	Create a class shape having data member shape_name and member function to get

Value of x	**Value of y**	**Value of m**	**Value of n**

Roll No	**Name**	**Ward Number**	**Bed Number**	**Nature of illness**

and print shape_name. Derive a Class Circle which is inherited publicly from class shape and having data members radius of a circle and member function to get and print radius of a circle. Derive a Class Area which is inherited publicly from Class Circle and having data members area_of_circle and member function display () which displays area of a circle. Use object of class Area in main () function and get and display all the information.

Use the concepts of Multilevel Inheritance.

Expected output:

Fill up the below given table, according to the given inputs and obtained outputs. Attach the screenshot of the output.

Inputs		**Output**
Name of Shape	**Radius of Circle**	**Area of Circle**

9 9.1

What is the output of the following code:

a) Pointer to objects

```
#include<iostream>
using namespace std;
class product
{ int code;
        float price;
public:
        void getdata(int a, float b)
        {
 code=a;
 price=b;
        }
        void show()
        {
 cout<<"Code: "<<code<<endl;
 cout<<"Price: "<<price<<endl;
        }
 };
 int main(){
  product * p = new product;
  product *d = p;
int x,i;
        float y;
  cout<<"Input code and price for product: ";
  cin>>x>>y;
  p->getdata(x,y);
  d->show();
}
```

		Attach the screenshot of the received output and write your explanation about it in few words.

	9.2	What is the output of the following code:
		b) this Pointer
		
		#include<iostream>
		using namespace std;
		class student
		{
		int roll_no;
		float age;
		public:
		student(int r, float a)
		{
		roll_no = r;
		age = a;
		}
		student & greater (student & x)
		{
		if(x.age>=age)
		return x;
		else
		return *this;
		}
		void display()
		{
		cout<<"Roll No "<<roll_no<<endl;
		cout<<"Age "<<age<<endl;
		}
		};
		
		int main()
		{
		student s1 (23,18),s2 (30,20),s3 (45,16);
		student s = s1.greater(s3);
		cout<<"Elder Person is :"<<endl;
		s.display();
		}
		
		Attach the screenshot of the received output and write your explanation about it in few words.

	9.3	**c) Pointers to Derived Objects** #include<iostream> using namespace std;

```
class BC
{
 public:
        int b;
        void show()
        {
 cout<<"b = "<<b<<endl;
        }
};
 class DC : public BC
{
public:
        int d;
        void show()
        {
 cout<<"b = "<<b<<endl;
 cout<<"d = "<<d<<endl;
        }
};
 int main()
{
        BC *bptr;
        BC base;
        bptr = &base;
        bptr->b = 100;
        cout<<"bptr poins to base objects"<<endl;
        bptr->show();
        DC derived;
        bptr = &derived;
        bptr->b = 200;
        /*bptr->b = 300;*/ // wont work
        cout<<"bptr now points to derived object"<<endl;
        bptr->show();
        DC *dptr;
        dptr=&derived;
        dptr->d=300;
        cout<<"Dptr is derived type pointer"<<endl;
        dptr->show();
        return 0;
}
```

Attach the screenshot of the received output and write your explanation about it in few words.

	9.4	Create a class Media that stores the title (a string) and price (float). Class Media has two argument constructor which initializes data members of class Media. Also declare a virtual function display () in Class Media. From the class Media derive

two classes: Class book, which contains data member page count (int): and Class tape, which contains data member playing time in minutes (float). Both Class book and Class tape should have a constructor which initializes base class constructor as well as its own data members and display ( ) function which displays book details and tape details respectively. Write a main ( ) to test book and tape classes by creating instances of them, asking the user to fill data and displaying them.
Use the concept of Virtual function and Constructor in Derived Class.

Expected Output:
Fill up the below given table, according to the obtained output. Attach the screenshot of the output.

Outcome for class Book

Book Title	**Price**	**No. of Pages**

Outcome for class Tape

Book Title	**Price**	**Duration**

	9.5	Create an Abstract class vehicle having average as data and pure virtual function getdata() and putdata(). Derive class car and truck from class vehicle having data members: fuel type (petrol, diesel, CNG) and no of wheels respectively. Write a main ( ) that enters the data of two cars and a truck and display the details of them. **Use the concept of Abstract Base class and Pure Virtual functions.** **Expected Output:** Fill up the below given table, according to the obtained output. Attach the screenshot of the output.

	Fuel Type	**No. of Wheels**
Car1		
Truck1		
Car2		
Truck2		

10	10.1	What is the output of the following code related to ios format functions, get() and put() functions and getline() and write() functions?
		
		(a)
		#include<iostream>
		using namespace std;
		int main()
		{
		char s[12]="ABC_DEF_GHI";
		cout.write(s,9);
		int x=12345;
		cout.fill('*');
		cout.width(10);
		cout<<endl<<x;

```
return 0;
}
```

(b)

```
int main()
{
int a,b;
a = (b = 50) +10;
cout<<"a = "<<a<<endl; cout<<"b = "<<b<<endl;
float x=23.4;
cout.fill('*');
cout.width(10);
cout<<x<<endl;
float y=54.4;
cout.setf(ios::showpos);
cout<<y<<endl;
return 0;
}
```

(c)

```
#include<iostream>
using namespace std;
int main()
{
int count =0;
char c;
cout<<"INPUT TEXT\n";
cin.get(c);
while(c!='\n')
{
cout.put(c);
count++;
cin.get(c);
}
cout<<"\n Number of charaters = "<<count<<"\n";
return 0;
}
```

(d)

```
#include<iostream>
using namespace std;
int main()
{
char name[20];
cout<<"Enter first name then white space and then last name of a
person: ";
cin>>name;
cout<<"Person Name : "<<name<<endl;
cout<<"Enter first name then white space and then last name of a
person: ";
cin.getline(name,10);
cout.write(name,7);
cout<<"Again Enter first name then white space and then last
```

		name of a person: ";
		cin.getline(name,13);
		cout.write(name,11);
		return 0;
		}
		
		Attach the screenshot of the output and explain them.

	10.2	Write a program which demonstrates how to create user-defined Manipulators. **Attach the screenshot of the output.**
11	11.1	Write a program that creates a text file that contains ABC...Z. A program should print the file in reverse order on the screen. i.e. ZYX...BA. Use concept of Opening the file using constructor and open() function. **Use all error handling functions like eof() , fail() , bad() , good() and functions for manipulation of file pointer like seekg() and tellg().** **Attach the screenshot of the output.**
	11.2	Write a program that creates a binary file and input height in float for the five students. Display the content of the file with two precision. Use the concept of Write() and read() functions for handling data in binary form. **Attach the screenshot of the output.**

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