PROGRAMMING FUNDAMENTAL (LAB 04 TASKS)

**Question:1**

#include<iostream>

using namespace std;

/\*Task #1: Write a C++ program to ask the user to input his/her age. Then the program will show if the person is eligible to vote. A person who is eligible to vote must be older than or equal to 18 years old.

Expected Output

Enter your age: 18

You are eligible to vote.\*/

int main ()

{

int a,b;

cout<<"Enter your age:";

cin>>a;

if(a>=18)

cout<<"You are eligible to vote.";

else

cout<<"You are not eligible to vote.";

return 0;

}

**Question:2**

#include<iostream>

using namespace std;

/\* A student will not be allowed to sit in exam if his/her attendance is less than 75%.

Take following input from user

Number of classes held

Number of classes attended.

And print

percentage of class attended

Is student is allowed to sit in exam or not.\*/

int main()

{

int num1=48;

int num2;

float per;

cout<<"Number of classes held:"<<num1<<endl;

cout<<"Number of classes attend:";

cin>>num2;

per=(num2\*100)/num1;

cout<<"Percentage of class attend:"<<per<<endl;

if(per<75)

cout<<"Student are not allowed to sit in exam.";

else

cout<<"Student are allowed to sit in the exam.";

return 0;

}

QUESTION#3

/\*Task#3 Write a C++ program that takes a single character as an input and displays

whether it is a vowel or a consonant. \*/

#include<iostream>

using namespace std;

int main()

{

char ch;

cout<<"Enter any character:";

cin>>ch;

switch(ch){

case 'a':cout<<"It's a vowel.";break;

case 'e':cout<<"It's a vowel.";break;

case 'i':cout<<"It's a vowel.";break;

case 'o':cout<<"It's a vowel.";break;

case 'u':cout<<"It's a vowel.";break;

case 'A':cout<<"It's a vowel.";break;

case 'E':cout<<"It's a vowel.";break;

case 'I':cout<<"It's a vowel.";break;

case 'O':cout<<"It's a vowel.";break;

case 'U':cout<<"It's a vowel.";break;

default:cout<<"it's a consonant";

}

return 0;

}

**Question#4**

#include<iostream>

using namespace std;

/\*Write a program that will ask

the user to enter any number and the

program checks whether the entered number

is a positive number or negative number. \*/

int main()

{

int num;

cout<<"Enter any number:";

cin>>num; //input at running time

if(num>0) //if statement

cout<<"The number is positive.";

else

cout<<"The number is negative.";

return 0;

}

**Question #4(b)**

#include<iostream>

using namespace std;

/\*Write a program that will ask the user

to enter any number and the program checks

whether the entered number is a double

figure number. \*/

int main()

{

int num;

cout<<"Enter any number:";

cin>>num;

if(num>=10) //condition for double figure number

cout<<"It is double figure number";

else

cout<<"It is not double figure number";

return 0;

}

**Question #5(a)**

#include<iostream>

#include<conio.h> //declaration of getch()

using namespace std;

/\* Consider an integer value give: int num=5;

display the square of the number given when

the spacebar key on the keyboard will

pressed.\*/

int main()

{

int num=5;

char space;

space=getch(); //hold screen for programmer to pressed

(space=' ')?cout<<num\*num:cout<<"no";

return 0;

}

**Question #5(b)**

/\*Write a program that will ask the user to

enter any number and the program checks

whether the entered number is an even

number or odd number. \*/

#include<iostream>

using namespace std;

int main()

{

int num;

cout<<" Enter any number:";

cin>>num;

if(num%2==0) //checks first condition

cout<<"The number is even.";

else if(num%2!=0) //checks second condition

cout<<"The number is odd.";

return 0;

}

**Question #6**

/\*Write a C++ program that prompts the user

to enter any character and the program

checks as:

1-the character is a lower case character or

upper case character.

2-if it is a lower case then convert it

into upper case.

3-if it is an upper case then convert it

into lower case.\*/

#include<iostream>

#include<cctype> //contain character classification

using namespace std;

int main()

{

char ch;

cout<<"Enter any character:";

cin>>ch;

if(islower(ch))

cout<<"Conversation to uppercase:"<<(char)(ch-32);//casting use to display letter not number

else if(isupper(ch))

cout<<"Conversation to lowercase:"<<(char)(ch+32);

return 0;

}

**Question #8**

Task # 8: In the following program, explain why the value "6" is printed twice in a row:

int main()

{

int i = 3;

i++;

cout << i<<endl; // "4"

++i;

cout<<i <<endl; // "5"

cout<<++i<<endl; // "6"

cout<<i++<<endl; // "6"

cout<<i; // "7"

}

Answer:

As we are familiar with postfix and prefix.

Here in 3rd console

statement we have just add 1 to i but for the 4th console statement it is declaring postfix mean first the program display same value of i then add 1 for 5th console statement.

**Question#9**

/\*Write a program that accepts two

numbers from the user and prints compares

whether both numbers are equal are not.\*/

#include<iostream>

using namespace std;

int main()

{

int a,b;

cout<<"Enter first number:";

cin>>a;

cout<<"Enter second number:";

cin>>b;

(a==b)?cout<<"Numbers are equal":cout<<"Numbers are not equal";

return 0; }

**Question #10**

/\*Write a program that accepts three numbers

from the user and prints compares whether

both numbers are equal are not.\*/

#include<iostream>

using namespace std;

int main()

{

int a,b,c;

cout<<"Enter first number:";

cin>>a;

cout<<"Enter second number:";

cin>>b;

cout<<"Enter second number:";

cin>>c;

((a==b)&&(b==c))?cout<<"Numbers are equal":cout<<"Numbers are not equal";

return 0;

}

**Question #11**

/\*Write a program that accepts two numbers

from the user and prints compares which

number is a greater number among them.\*/

#include<iostream>

using namespace std;

int main()

{

int num1,num2;

cout<<"Enter first number:";

cin>>num1;

cout<<"Enter second number:";

cin>>num2;

int greater;

greater=(num1>num2)?num1:num2;

cout<<"Greater number is :"<<greater;

return 0;

}

**Question #12**

/\*Write a program that accepts three numbers

from the user and prints "increasing" if

the numbers are in increasing order,

"decreasing" if the numbers are in

decreasing order.

Test Data

Input first number: 15

Input second number: 25

Input third number: 35

Expected Output:

Increasing order\*/

#include<iostream>

using namespace std;

int main()

{

int a,b,c;

cout<<"Enter first number:";

cin>>a;

cout<<"Enter first number:";

cin>>b;

cout<<"Enter first number:";

cin>>c;

if((a>b)&&(b>c))

cout<<"Decreasing order.";

else if((a<b)&&(b<c))

cout<<"Increasing order.";

return 0;

}

QUESTION#13

/\*Task # 13 Implement a C++ program with name Address.cpp. An address has

" a house number,

" a street,

" an optional apartment number,

" a city,

" a state and a

" postal code.

Supply values at run time and print the address with the street on one line and

the city, state, and postal code on the next line.\*/

#include<iostream>

using namespace std;

int main()

{

int house\_no,apar\_no,postal\_code;

string street,city,state;

cout<<"House no:";

cin>>house\_no;

cout<<"Street:";

cin.ignore();

getline(cin,street);

cout<<"Apartment no:";

cin>>apar\_no;

cout<<"City:";

cin.ignore();

getline(cin,city);

cout<<"State:";

getline(cin,state);

cout<<"Postal code:";

cin>>postal\_code;

cout<<"House no:"<<house\_no<<'\t'<<"Street:"<<street<<endl;

cout<<"Apartment no:"<<apar\_no<<'\t'<<"City:"<<city<<'\t'<<"State:"<<state<<'\t'<<"Postal code:"<<postal\_code;

return 0;

}

**Question#14**

/\*Task #14: Take three numbers from the user

and print the greatest number.  Test Data

Input the 1st number: 25

Input the 2nd number: 78

Input the 3rd number: 87

Expected Output:

The greatest: 87\*/

#include<iostream>

using namespace std;

int main ()

{

int a,b,c;

cout<<"Enter first number:";

cin>>a;

cout<<"Enter second number:";

cin>>b;

cout<<"Enter third number:";

cin>>c;

if(a>b && a>c)

cout<<"The greatest:"<<a;

else if(b>a && b>c)

cout<<"The greatest:"<<b;

else if(c>a && c>b)

cout<<"The greatest:"<<c;

return 0;

}

QUESTION#15

/\*Task #: 15 Write a java program that takes a single character as input and tells

whether it is a vowel or a consonant. (Use Conditional operator)\*/

#include<iostream>

using namespace std;

int main()

{

char ch;

cout<<"Enter any character:";

cin>>ch;

(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u')?cout<<"Vowel..":cout<<"Consonant..";

return 0;

}

**Question #16**

/\* Write a program that declares an int

variable, assign it a value of your choice.

The program checks as:

if the number is even make it odd number.

if the number is odd prints its square.

if the number is equal to 0 make it a double

figure number and prints its cube.\*/

#include<iostream>

using namespace std;

int main ()

{

int x,;

cout<<"Enter any number:";

cin>>x;

if((x%2==0)&&(x!=0))

cout<<"Odd number ="<<++x<<endl;

if(x%2!=0)

{cout<<"Its square is ="<<x\*x;}

if(x==0)

{x+=11;

cout<<"Double figure number="<<x<<endl;

cout<<"Its cube is="<<x\*x\*x;

return 0;

}

**Question #18**

/\*A shop will give discount of 10%

if the cost of purchased quantity is more

than 1000.

Ask user for quantity

Suppose, one unit will cost 100.

Judge and print total cost for user.\*/

#include<iostream>

using namespace std;

int main ()

{

int cost, discount ;

cout<<"purchased quantity :";

cin>>cost;

if(cost>1000)

{discount=cost-(cost\*1/10);

cout<<"Discount(10%) rates will be :"<<discount;}

else if(cost<1000)

cout<<"No discount";

return 0;

}

**Question #19**

/\*Develop a mark sheet

which fulfills the following requirements:

The program takes input from the user marks

obtained in three subjects; C++,

Data Structures and Operating Systems.

• The program calculates the total marks

obtained out of 300.

• Calculate the percentage.

• Display the grade secured according to

the following:

90 > Grade: A

Between 90 and 80 Grade: B

Between 79 and 70 Grade: C\*/

#include<iostream>

using namespace std;

int main ()

{

int num1,num2,num3,obt;

cout<<"Marks in C++:";

cin>>num1;

cout<<"Marks in Data structures:";

cin>>num2;

cout<<"Marks in Operating system:";

cin>>num3;

obt=num1+num2+num3;

cout<<"Total marks obtained="<<obt<<endl;

float per=(float)obt/300\*100;

cout<<"Percentage="<<per<<endl;

if(per>90)

cout<<"Grade:A";

else if(90>per>80)

cout<<"Grade:B";

else if(70>per<79)

cout<<"Grade:C";

return 0;

}