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ROLL NO – 33

C++ PRACTICAL ASSIGNMENT – 02 DEC 2021

#1 WAP that displays the size of data types and different data values stored in variables:

```
#include <iostream>
using namespace std;

int main(){

    cout<<"This Program shows the Size of different DATA TYPES supported in C++"<<endl;
    cout<<"Also different values have been assigned to the variables"<<endl;

    int x;
    unsigned int x2;
    short y;
    long z;
    cout<<"Size of int x = "<<sizeof(x)<<endl;
    cout<<"Size of unsigned x2 = "<<sizeof(x)<<endl;
    cout<<"Size of short y = "<<sizeof(y)<<endl;
    cout<<"Size of long z = "<<sizeof(z)<<endl;

    x=-23456789;
    x2=12;
    y=2323;
    z=123456789;

    cout<<"\nint: x = "<<x<<endl;
    cout<<"unsigned: x2 = "<<x2<<endl;
    cout<<"short: y = "<<y<<endl;
    cout<<"long: z = "<<z<<endl;

    float a;
    double b;
    long double c;

    cout<<"Size of float a = "<<sizeof(a)<<endl;
    cout<<"Size of double b = "<<sizeof(b)<<endl;
    cout<<"Size of long double c = "<<sizeof(c)<<endl;

    a=-34.12345;
    b=2323.2323;
    c=2300.2323;

    cout<<"\nfloat: a = "<<a<<endl;
    cout<<"double: b = "<<b<<endl;
    cout<<"long double: c = "<<c<<endl;

    cout<<endl;
```

```

bool p,q;
cout<<"Size of bool p = "<<sizeof(p)<<endl;
cout<<"Size of bool q = "<<sizeof(q)<<endl;

p=true;
q=false;
cout<<"\nBool: p = "<<p<<endl;
cout<<"Bool : q = "<<q<<endl;

char ch;
cout<<"Size of char ch = "<<sizeof(char)<<endl;
ch='a';
cout<<"\nChar ch = "<<ch<<endl;

return 0;
}

```

```

[Running] cd "e:\_Bsc CS\C++ PRACTICAL\" && g++ 12-2DataTypes.cpp -o 12-2DataTypes && "e:\_Bsc CS\C++ PRACTICAL\"12-2DataTypes
This Program shows the Size of different DATA TYPES supported in C++
Also different values have been assigned to the variables

Size of int x = 4
Size of unsigned x2 = 4
Size of short y = 2
Size of long z = 4

int: x = -23456789
unsigned: x2 = 12
short: y = 2323
long: z = 123456789

Size of float a = 4
Size of double b = 8
Size of long double c = 16

float: a = -34.1235
double: b = 2323.23
long double: c = 2300.23

Size of bool p = 1
Size of bool q = 1

Bool: p = 1
Bool : q = 0
Size of char ch = 1

Char ch = a

```

#2 Program to print ASCII code of a character: input by the user, from A to Z:

```

#include<iostream>
using namespace std;

int main(){
    char ch1,ch;
    cout<<"Enter any character here: ";
    cin>>ch;

```

```

cout<<"\nThe entered character is "<<ch1<<endl;
cout<<"The ASCII Code of "<<ch1<<" is "<<(int)ch<<endl;

cout<<"The Alphabets & their ASCII Values from A to Z are "<<endl;

ch='A';
while(ch<='Z') {
    cout<<ch<<" : ASCII CODE = "<<(int)ch<<endl;
    ch=ch+1;
}
return 0;
}

```

```

Quincy 2005
The Alphabets & their ASCII Values from A to Z are

A : ASCII CODE = 65
B : ASCII CODE = 66
C : ASCII CODE = 67
D : ASCII CODE = 68
E : ASCII CODE = 69
F : ASCII CODE = 70
G : ASCII CODE = 71
H : ASCII CODE = 72
I : ASCII CODE = 73
J : ASCII CODE = 74
K : ASCII CODE = 75
L : ASCII CODE = 76
M : ASCII CODE = 77
N : ASCII CODE = 78
O : ASCII CODE = 79
P : ASCII CODE = 80
Q : ASCII CODE = 81
R : ASCII CODE = 82
S : ASCII CODE = 83
T : ASCII CODE = 84
U : ASCII CODE = 85
V : ASCII CODE = 86
W : ASCII CODE = 87
X : ASCII CODE = 88
Y : ASCII CODE = 89
Z : ASCII CODE = 90

Press Enter to return to Quincy...

```

#3 Write a C++ program that prints the sum of numbers in a series given by the user (1 to n):

```

#include <iostream>
using namespace std;

int main(){
    int n, sum, i;
    cout<<"This program displays the sum of numbers from 0 to n for the given value of n"<<endl;
    cout<<"Enter the value of n here : ";
    cin>>n;
}

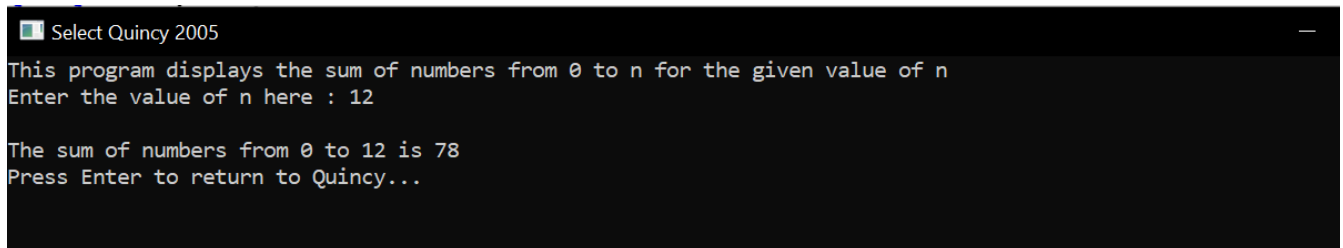
```

```

sum=0;
i=0;

while (i<=n){
    sum=sum+i;
    i=i+1;
}
cout<<"\nThe sum of numbers from 0 to "<<n<<" is "<<sum;
return 0;
}

```



```

Select Quincy 2005
This program displays the sum of numbers from 0 to n for the given value of n
Enter the value of n here : 12

The sum of numbers from 0 to 12 is 78
Press Enter to return to Quincy...

```

#4- WAP to display the output of the series: $1 - 1/(2*2) + 1/(3*3) - 1/(4*4) + \dots + 1/(n*n)$:

```

#include<iostream>
#include<math.h>
using namespace std;

int main() {
    int n;
    cout<<"THIS PROGRAM CALCULATES AND DISPLAYS THE OUTPUT OF THE GIVEN SERIES"<<endl;
    cout<<"1-1/(2*2)+1/(3*3)-1/(4*4)+.....1/(n*n)"<<endl;
    cout<<"\twhere n refers to number of terms"<<endl;

    cout<<"\nEnter the value of n here : ";
    cin>>n;

    float sum=0.0;
    float i=1;

    while (i<=n){
        sum=sum+pow(-1,i+1)*(1.0/(i*i));
        i=i+1;
    }
    cout<<"The sum of the series is "<<sum<<endl;
    return 0;
}

```

```
Quincy 2005
THIS PROGRAM CALCULATES AND DISPLAYS THE OUTPUT OF THE GIVEN SERIES
1-1/(2*2)+1/(3*3)-1/(4*4)+.....1/(n*n)
    where n refers to number of terms

Enter the value of n here : 5
The sum of the series is 0.838611

Press Enter to return to Quincy...
```

#5- WAP to display Factorial of a number entered by the user:

```
#include <iostream>
using namespace std;

int main(){
    int num;
    cout<<"THIS PROGRAM FINDS THE FACTORIAL OF A GIVEN NUMBER"<<endl;
    cout<<"Enter the number here : ";
    cin>>num;

    int fact=1;
    int i=1;
    while (i<=num){
        fact=fact*i;
        i=i+1;
    }

    cout<<"The factorial of "<<num<<" is "<<fact<<endl;
    return 0;
}
```

```
Quincy 2005
THIS PROGRAM FINDS THE FACTORIAL OF A GIVEN NUMBER
Enter the number here : 5
The factorial of 5 is 120

Press Enter to return to Quincy...
```