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|---|---|
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| SAMESTER | 2ND (BS IT MORNING) |
| SUBJECT | OOP |
| ROLL NO | 231051 |
| SUBMITTED TO | MA'AM NOOR |

# PROGRAM 1:

```
#include <iostream>
using namespace std;
    void show(void);
    int main()
    {
        show();
        return 0;

    }
    void show()
    {
    cout<<"programming makes life interesting .";
}
```

```
programming makes life interesting .
--------------------------------
Process exited after 0.1112 seconds with return value 0
Press any key to continue . . .
```

# PROGRAM 2:

```cpp
#include <iostream>
using namespace std;
    void max(int a,int b);

    int main()
    {
        int x,y;
        cout<<"Enter two numbers:";
        cin>>x>>y;
        max(x,y);
        return 0;

    }
    void max(int a,int b)
    {
        if(a>b)
        cout<<"Maximum number is "<<a;
        else
        cout<<"Maximum number is"<<b;
    }
```

```
Enter two numbers:20 30
Maximum number is30
--------------------------------
Process exited after 10.95 seconds with return value 0
Press any key to continue . . .
```

# PROGRAM 3:

```
#include <iostream>
using namespace std;
    void table(int n);

    int main()
    {
        int num;
        cout<<"Enter a number:";
        cin>>num;
        table (num);
        return 0;

    }
    void table(int n)
    {
        int c;
        for(c=1; c<=10; c++)
        {
            cout<<n<<"*"<<c<<"="<<n*c<<endl;
        }
    }
```

```
Enter a number:4
4*1=4
4*2=8
4*3=12
4*4=16
4*5=20
4*6=24
4*7=28
4*8=32
4*9=36
4*10=40

--------------------------------
Process exited after 26.51 seconds with return value 0
Press any key to continue . . .
```

# PROGRAM 4:

```
#include <iostream>
using namespace std;
    void value(int);
    int main()
    {
        int x;
        cout<<"Enter an integer:";
        cin>>x;
        value (x);
        return 0;

    }
    void value(int x)
    {
        int p,n;
        p=x-1;
        n=x+1;
        cout<<"The number before"<<x<<"is"<<p<<endl;
        cout<<"The number after"<<x<<"is"<<n<<endl;
}
```

```
Enter an integer:6
The number before6is5
The number after6is7

--------------------------------
Process exited after 5.672 seconds with return value 0
Press any key to continue . . .
```

# PROGRAM 5:

```
#include <iostream>
using namespace std;
    void factorial(int n);
    int main()
    {
        int num;
        cout<<"Enter a number:";
        cin>>num;
        factorial(num);
        return 0;

    }
    void factorial(int n)
    {
        int i;
        long fact;
        fact=1;
        for(i=1;i<=n;i++)
        fact*=i;
        cout<<"Factorial of"<<n<<"is"<<fact<<endl;
}
```

```
Enter a number:2
Factorial of2is2

--------------------------------
Process exited after 4.515 seconds with return value 0
Press any key to continue . . .
```

# PROGRAM 6:

```cpp
#include<iostream>
using namespace std;
void chk_number(int n)
{
    int c=0,i;
    for(i=2;i<n;i++)
    {
        if(n%i==0)
        c=1;
    }
    if(n%2==0&& c==0)
    cout<<n<<"is a prime even number:";
    else if(n%2!=0 && c==0)
    cout<<n<<"is a odd prime number:";
    else if(n%2==0 && c!=0)
    cout<<n<<"is only an even number, not prime.";
    else if(n%2!=0)
    cout<<n<<"is only an odd number, not prime.";
    else
    cout<<"is not a prime number.";
}
int main()
{
    int n;
    cout<<"/nEnter a number:";
    cin>>n;
    cout<<"/nNature of number/n";
    cout<<"/n---------/n";
    chk_number(n);
    return 0;
}
```

```
/nEnter a number:7
/nNature of number/n/n---------/n7is a odd prime number:
```

# PROGRAM 7:

```
#include<iostream>
using namespace std;
void prime(int num)
{
    int c, p=1;
    for(c=2; c<=num/2;c++)
    if(num%c==0)
    {
        p=0;
        break;
    }
    if(p==1)
    cout<<num<<"is a prime number.";
    else
    cout<<num<<"is a composite number.";
}
int main()
{
    int n;
    cout<<"Enter an integer:";
    cin>>n;
    prime(n);
    return 0;
}
```

```
Enter an integer:4
4is a composite number.
--------------------------------
```

# PROGRAM 8:

```cpp
#include<iostream>
using namespace std;
void area(float s)
{
    float a;
    a=s*s;
    cout<<"Area="<<a<<endl;
}
void perimeter(float s)
{
    float p;
    p=s*4;
    cout<<"Perimeter="<<p<<endl;
}
    int main ()
    {
        float side;
        cout<<"Enter the length of side:";
        cin>>side;
        area(side);
        perimeter(side);
        return 0;

}
```

```
Enter the length of side:70
Area=4900
Perimeter=280

--------------------------------
```

# PROGRAM 9:

```cpp
#include<iostream>

    using namespace std;
    void cal(int a,int b,char op);
    int main()
    {

        int x,y;
        char c;
        cout<<"Enter first number,operator and second number:";
        cin>>x>>c>>y;
        cal(x,y,c);
        return 0;
    }
    void cal(int a,int b,char op)
        {
            switch(op)
        {

            case'+':
            cout<<a<<"+"<<b<<"="<<a+b;
            break;
            case'-':
            cout<<a<<"-"<<b<<"="<<a-b;
            break;
            case'*':
            cout<<a<<"*"<<b<<"="<<a*b;
            break;
            case'/':
                cout<<a<<"/"<<b<<"="<<a/b;
                break;
                case'%':
                    cout<<a<<"%"<<b<<"="<<a%b;
                    break;
                    default:
                        cout<<"Invalid operator!";

    }
}
```

```
Enter first number,operator and second number:6+6
6+6=12
--------------------------------
Process exited after 10.5 seconds with return value 0
Press any key to continue . . .
```

# PROGRAM 10:

```
#include<iostream>
using namespace std;
void shape(int,char);
int main()
{
    int num;
    char ch;
    cout<<"/nEnter a number:";
    cin>>num;
    cout<<"Enter a character:";
    cin>>ch;
    shape(num,ch);
    return 0;
}
void shape(int n, char c)
{
    int i,j;
    for(i=1;i<=n;i++)
    {
    cout<<endl;
    for(j=1;j<=n;j++)
    cout<<c;
}
}
```

```
/nEnter a number:2
Enter a character:@

@@
@@
--------------------------------
Process exited after 18.99 seconds with return value 0
Press any key to continue . . .
```

# PROGRAM 11:

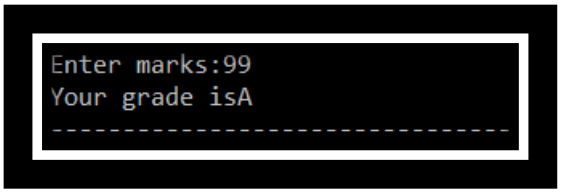
```cpp
#include<iostream>
using namespace std;
void swap(int&x,int&y);
int main()
{
    int a,b;
    cout<<"Enter an integer:";
    cin>>a;
    cout<<"Enter an integer:";
    cin>>b;
    cout<<"Values before swapping:/n";
    cout<<"a="<<a<<endl;
    cout<<"b="<<b<<endl;
    cout<<"Swapping the values..."<<endl;
    swap(a,b);
    cout<<"Values after swapping:/n";
    cout<<"a="<<a<<endl;
    cout<<"b="<<b<<endl;
    return 0;
}
void swap(int&x,int&y)
{
    int t;
    t=x;
    x=y;
    y=t;
}
```

```
Enter an integer:20
Enter an integer:30
Values before swapping:/na=20
b=30
Swapping the values...
Values after swapping:/na=30
b=20

--------------------------------
Process exited after 13.69 seconds with return value 0
Press any key to continue . . .
```

# PROGRAM 12:

```cpp
#include<iostream>
using namespace std;
char grade(int m);
int main()
{
    int marks;
    char g;
    cout<<"Enter marks:";
    cin>>marks;
    g=grade(marks);
    cout<<"Your grade is"<<g;
    return 0;
}
char grade(int m)
{
    if(m>80)
    return 'A';
    else if(m>60)
    return'B';
    else if(m>40)
    return'C';
    else
    return 'F';
}
```



# PROGRAM 13:

```
#include<iostream>
using namespace std;
int mul(int ,int);
int main()
{
    int i,x,y,r;
    for(i=1;i<=5;i++)
    {
        cout<<"Enter a pair of integers:";
        cin>>x>>y;
        r=mul(x,y);
        if(r==1)
        cout<<y<<"is multiple of"<<x<<endl;
        else
        cout<<y<<"is not multiple of"<<x<<endl;
    }
    return 0;
}
int mul(int a,int b)
{
    if(b%a==0)
    return 1;
    else
    return 0;
}
```

```
Enter a pair of integers:2 10
10is multiple of2
Enter a pair of integers:3 20
20is not multiple of3
Enter a pair of integers:4 30
30is not multiple of4
Enter a pair of integers:5 41
41is not multiple of5
Enter a pair of integers:6 51
51is not multiple of6

--------------------------------
```

# PROGRAM 14:

```cpp
#include<iostream>
using namespace std;
float area(int b,int h);
 int main()
{
    int base,height;
    float ar;
    cout<< "enter base";
    cin>>base;
    cout<<"enter height";
    cin>>height;
    ar=area(base,height);
    cout<<"area of triangle is"<<ar;
    return 0;
}
float area(int b,int h)
{
    float a;
    a=0.5*b*h;
    return a;
}
```

```
enter base6
enter height7
area of triangle is21
--------------------------------
Process exited after 8.906 seconds with return value 0
Press any key to continue . . .
```

# PROGRAM 15:

```cpp
#include<iostream>
using namespace std;
int sqr(int n);
int cube(int n);

int main()
 {



    int a,b,r;
    cout<<"Enter an integer:";
    cin>>a;
    cout<<"Enter an integer:";
    cin>>b;
    r=sqr(a)+cube(b);
    cout<<"Result="<<r<<endl;
    return 0;
}
int sqr(int n)
{
    return n*n;
}
int cube(int n)
{
    return n*n*n;
}
```

```
Enter an integer:7
Enter an integer:3
Result=76
```

# PROGRAM 16:

```
#include<iostream>
using namespace std;
int gcd(int x,int y);
int main()
{
    int a,b;
    cout<<"Enter an integer:";
    cin>>a;
    cout<<"Enter an integer:";
    cin>>b;
    cout<<"Greatest common divisor is"<<gcd(a,b)<<endl;
    return 0;
}
int gcd(int x, int y)
{
    int g, i,n;
    if(x<y)
    n=x;
    else
    n=y;
    for(i=1;i<=n;n++)
    if(x%i==0 &&y%i==0)
    g=i;
    return g;
}
```

```
Enter an integer:20
Enter an integer:40
Greatest common divisor is1
```

# PROGRAM 17:

```
#include<iostream>
#include<math.h>
using namespace std;
int main()
{
    double term;
    int n;
    unsigned long fact(int);
    cout<<"/nEnter the maximum value of denominator:";
    cin>>n;
    double sum=1;
    for(int i=1;i<=n;i++)
    {
        term=1.0/fact(i);
        sum+=term;
    }
    cout<<"/n/nSum of Series is:"<<sum;
    return 0;
}
unsigned long fact(int n)
{
    unsigned long prod=1;
    int i;
    for(i=1;i<=n;i++)
    prod*=i;
    return prod;
}
```

```
/nEnter the maximum value of denominator:6
/n/nSum of Series is:2.71806
--------------------------------
```