Classwork

Mini Calculator using switch case in **C++**

```
#include<iostream>
using namespace std;
//Mini Calculator using switch case
int main(){
    int a,b;
    char operation;
    cout<<"Enter first number"<<endl;
    cin>>a;

    cout<<"Enter second number"<<endl;
    cin>>b;

    cout<<"Enter Arithmetic operator (+,-,*,/)"<<endl;
    cin>>operation;

    switch(operation){
        case '+':
        cout<<a+b<<endl;
        break;

        case '-':
        cout<<a-b<<endl;
        break;

        case '*':
        cout<<a*b<<endl;
        break;

        case '/':
        cout<<a/b<<endl;
```

```
        break;

        default:
        cout<<"Invalid operator"<<endl;

    }
    return 0;
}
```

Mini Calculator using switch case in **Java**

```
package com.help.code;
import java.util.*;

public class MiniCalculatorUsingSwitchCase {

     public static void main(String[] args) {
          // TODO Auto-generated method stub
          Scanner sc=new Scanner(System.in);
          System.out.println("Enter first number");
          int a=sc.nextInt();

          System.out.println("Enter second number");
          int b=sc.nextInt();

          System.out.println("Enter any arithmetic
operator(+,-,*,/)");
          char operator=sc.next().charAt(0);

          switch(operator) {
          case '+':
               System.out.println(a+b);
               break;
          case '-':
               System.out.println(a-b);
               break;
```

```
            case '*':
                System.out.println(a*b);
                break;
            case '/':
                System.out.println(a/b);
                break;
            default:
                System.out.println("Invalid operator");
            }
     }

}
```

Power(a,b) using function in **C++**

```
#include<iostream>
using namespace std;
int power(int a,int b){
    int ans=1;
    for(int i=1;i<=b;i++){
        ans=ans*a;
    }
    return ans;
}

int main(){
    int a,b;
    cout<<"Enter base"<<endl;
    cin>>a;
    cout<<"Enter power"<<endl;
    cin>>b;
    int result=power(a,b);
    cout<<result<<endl;
}
```

Power(a,b) using method in **Java**

```
package com.help.code;
import java.util.*;

public class PowerOfab {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter base");
		int a=sc.nextInt();

		System.out.println("Enter power");
		int b=sc.nextInt();

		System.out.println(power(a,b));
	}

	public static int power(int a,int b) {
		int ans=1;
		for(int i=1;i<=b;i++) {
			ans=ans*a;
		}
		return ans;
	}

}
```

nCr using function in **C++**

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

int factorial(int num){
    int fact=1;
    for(int i=1;i<=num;i++){
        fact=fact*i;
```

```
    }
    return fact;
}

int n_C_r(int n,int r){
    int
result=((factorial(n))/(factorial(r)*factorial(n-r)));
    return result;
}

int main(){
    int n,r;
    cout<<"Enter value of n "<<endl;
    cin>>n;

    cout<<"Enter value of r "<<endl;
    cin>>r;

    cout<<n_C_r(n,r)<<endl;
}
```

nCr using method in **Java**

```
package com.help.code;
import java.util.*;

public class nCr {

     public static void main(String[] args) {
          // TODO Auto-generated method stub
          Scanner sc=new Scanner(System.in);
          System.out.println("Enter value of n");
          int n=sc.nextInt();
          System.out.println("Enter value of r");
          int r=sc.nextInt();
```

```
            System.out.println(n_C_r(n,r));
      }

      public static int n_C_r(int n,int r) {
            int
res=(factorial(n)/(factorial(r)*factorial(n-r)));
            return res;
      }

      public static int factorial(int num) {
            int result=1;
            for(int i=1;i<=num;i++) {
                  result=result*i;
            }
            return result;
      }

}
```

Check given number is prime or not in **Java**

```
package com.help.code;
import java.util.*;
public class CheckPrimeOrNot {

      public static void main(String[] args) {
            // TODO Auto-generated method stub
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter a number to check prime or
not");
            int num=sc.nextInt();
            if(isPrime(num)) {
                  System.out.println("Prime number");
            }else {
                  System.out.println("Not prime number");
            }
      }

      public static boolean isPrime(int num) {
            for(int i=2;i<num;i++) {
```

```
                if(num%i==0) {
                     return false;
                }
           }
           return true;
      }

}
```

Check given number is prime or not in **C++**

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

bool isPrime(int num){
    for(int i=2;i<num;i++){
        if(num%i==0){
            return 0;
        }
    }
    return 1;
}

int main(){
    int num;
    cout<<"Enter a number to check prime or not"<<endl;
    cin>>num;
    if(isPrime(num)){
        cout<<"Prime Number"<<endl;
    }else{
        cout<<"Not a prime number"<<endl;
    }
}
```

Homework

You have given a certain amount of money then find out how many 100 rupees note, 50 rupees note, 20 rupees note and 1 rupee note required.
Make this program using switch case in **java**.
Example:- Total amount=1330 then

13 notes of 100 rupees required
0 note of 50 rupees required
1 note of 20 rupees required
10 notes of 1 rupee required

```
package com.help.code;
import java.util.*;

public class NotesFinder {

     public static void main(String[] args) {
          // TODO Auto-generated method stub
          System.out.println("Enter amount");
          Scanner sc=new Scanner(System.in);
          int amount=sc.nextInt();

          switch(1){
          case 1:
               System.out.println(amount/100+" notes of 100
rupees");
               amount=amount%100;
          case 2:
               System.out.println(amount/50+" notes of 50
rupees");
               amount=amount%50;
          case 3:
               System.out.println(amount/20+" notes of 20
rupees");
               amount=amount%20;
          case 4:
```

```
                System.out.println(amount+" notes of 1 rupee");
            }
        }

}
```

You have given a certain amount of money then find out how many 100 rupees note, 50 rupees note, 20 rupees note and 1 rupee note required.
Make this program using switch case in **C++**.
Example:- Total amount=1330 then
13 notes of 100 rupees required
0 note of 50 rupees required
1 note of 20 rupees required
10 notes of 1 rupee required

```
#include<iostream>
using namespace std;
int main(){
    int amount;
    cout<<"Enter amount of money"<<endl;
    cin>>amount;

    switch(1){
        case 1:
            cout<<amount/100<<" notes of 100 rupees"<<endl;
            amount=amount%100;
        case 2:
            cout<<amount/50<<" notes of 50 rupees"<<endl;
            amount=amount%50;
        case 3:
            cout<<amount/20<<" notes of 20 rupees"<<endl;
            amount=amount%20;
        case 4:
            cout<<amount<<" notes of 1 rupee"<<endl;
```

```
    }
    return 0;
}
```

A.P=(3*n+7), find nth term in **Java**

```
package com.help.code;
import java.util.*;
public class AP {

     public static void main(String[] args) {
          // TODO Auto-generated method stub
          Scanner sc=new Scanner(System.in);
          System.out.println("Enter value of n to get nth term
of 3n+7");
          int n=sc.nextInt();
          System.out.println(n+"th term of 3n+7 is "+(3*n+7));
     }

}
```

A.P=(3*n+7), find nth term in **C++**

```
#include<iostream>
using namespace std;
int main(){
    int n;
    cout<<"Enter value of n to get nth term of 3n+7"<<endl;
    cin>>n;
    cout<<n<<"th term of 3n+7 is "<<(3*n+7)<<endl;
    return 0;
}
```

Given two number a and b, find total number of set bits in a and b in **Java**

```
package com.help.code;
import java.util.*;
public class FindSetBit {

     public static void main(String[] args) {
          // TODO Auto-generated method stub
```

```
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter value of a");
        int a=sc.nextInt();

        System.out.println("Enter value of b");
        int b=sc.nextInt();

        System.out.println("total number of set bits in "+ a
+" and "+ b+" is "+(bitCounter(a)+bitCounter(b)));

    }

    public static int bitCounter(int num) {
        int count=0;
        while(num>0) {
            if((num&1)==1) {
                count++;
            }
            num=num>>1;
        }
        return count;
    }

}
```

Given two number a and b, find total number of set bits in a and b in **C++**

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

int bitCounter(int num){
    int counter=0;
    while(num>0){
        if((num&1)==1){
           counter++;
        }
        num=num>>1;
    }
    return counter;
```

```
}

int main(){
    int a,b;
    cout<<"Enter value of a"<<endl;
    cin>>a;

    cout<<"Enter value of b"<<endl;
    cin>>b;

    cout<<"total number of set bits in "<< a <<" and "<<b<<" is
"<<(bitCounter(a)+bitCounter(b))<<endl;
}
```

Print Fibonacci series till nth in **Java**

```
package com.help.code;
import java.util.*;
public class Fibonacci {

     public static void main(String[] args) {
          // TODO Auto-generated method stub
          Scanner sc=new Scanner(System.in);
          System.out.println("Enter number to print Fibonacci
series");
          int num=sc.nextInt();

          int a=0;
          int b=1;
          System.out.print(a+" "+b);
          for(int i=2;i<=num;i++) {
               int sum=a+b;
               System.out.print(" "+sum);
               a=b;
               b=sum;
          }
     }

}
```

Print Fibonacci series till nth in **C++**

```
#include<iostream>
using namespace std;
int main(){
    int num;
    cout<<"Enter number to print Fibonacci series"<<endl;
    cin>>num;

    int a=0;
    int b=1;
    cout<<a<<" "<<b<<" ";
    for(int i=2;i<=num;i++) {
            int sum=a+b;
            cout<<sum<<" ";
            a=b;
            b=sum;
    }
}
```