**EXPERIMENT NO :1.a**   **DATE :**

**AIM:**

**ALGORITHM:**

**Step 1:** START.

**Step 2:** Declare two integer variables: number1 and number2.

**Step 3:** Prompt the user to enter two numbers.

**Step 4:** Read the values entered by the user into number1 and number2.

**Step 5:** Perform the following calculations:

* **Step 5a:** Calculate the addition of number1 and number2 and display the result.
* **Step 5b:** Calculate the subtraction of number1 and number2 and display the result.
* **Step 5c:** Calculate the multiplication of number1 and number2 and display the result.
* **Step 5d:** Calculate the division of number1 by number2 and display the result.

**Step 6:** END

**SOURCE CODE:**

#include<iostream>

using namespace std;

int main()

{

int number1;

int number2;

cout<<"Enter two numbers:"<<endl;

cin>>number1;

cin>>number2;

cout<<"Addition:"<<number1<<"+"<<number2<<"="<<number1+number2<<endl;

cout<<"Subtraction:"<<number1<<"-"<<number2<<"="<<number1-number2<<endl;

cout<<"Multiplication:"<<number1<<"\*"<<number2<<"="<<number1\*number2<<endl;

cout<<"Division:"<<number1<<"/"<<number2<<"="<<number1/number2<<endl;

return 0;

}

**INPUT:**

**Enter two numbers:**

**60**

**5**

**OUTPUT:**

**Addition: 60 + 5 = 65**

**Subtraction: 60 - 5 = 55**

**Multiplication: 60 \* 5 = 300**

**Division: 60 / 5 = 12**

**EXPERIMENT NO : 1.b** **DATE :**

**FACTORIAL**

**AIM:**

**ALGORITHM:**

**Step 1:** Start .

**Step 2:** Declare an integer variable number, i, and factorial, initializing factorial to 1.

**Step 3:** Prompt the user to enter a number.

**Step 4:** Read the value entered by the user into number.

**Step 5:** Use a loop (from 1 to number) to calculate the factorial:

* **Step 5a:** For each iteration, multiply factorial by i and store the result back in factorial.

**Step 6:** After the loop, display the result: "Factorial of number = factorial".

**Step 7:** End .

**SOURCE CODE:**

**#include<iostream>**

**using namespace std;**

int main()

{

int number,i,factorial=1;

cout<<"Enter a number:"<<endl;

cin>>number;

for(i=1;i<=number;i++)

{

factorial=factorial\*i;

}

cout<<"Factorial of"<<number<<"="<<factorial<<endl;

return 0;

}

**INPUT:**

**Enter a number:**

**5**

**OUTPUT:**

**Factorial of 5 = 120**

**EXPERIMENT NO :1.c**  **DATE :**

**AIM:**

**ALGORITHM**

**Step 1:** Start the program.

**Step 2:** Declare an integer variable number, i, and sum, initializing sum to 0.

**Step 3:** Prompt the user to enter a number.

**Step 4:** Read the value entered by the user into number.

**Step 5:** Use a loop (from 0 to number) to calculate the sum:

* **Step 5a:** For each iteration, add i to sum.

**Step 6:** After the loop, display the result: "SUM = sum".

**Step 7:** End the program.

**SOURCE CODE**

**#include<iostream>**

**using namespace std;**

**int main ()**

**{**

**int number,i,sum=0;**

**cout<<"Enter a number:";**

**cin>>number;**

**for(i=0;i<=number;i++)**

**{**

**sum=sum+i;**

**}**

**cout<<"SUM="<<sum<<endl;**

**return 0;**

**}**

**INPUT:**

**Enter a number: 5**

**OUTPUT:**

**SUM = 15**

**EXPERIMENT NO : 1.d**  **DATE :**

**AIM:**

**ALGORITHM**

**Step 1:** Start the program.

**Step 2:** Declare integer variables: number, first\_no, second\_no, next\_no, and i, initializing first\_no to 0 and second\_no to 1.

**Step 3:** Prompt the user to enter the number of terms to be printed in the Fibonacci series.

**Step 4:** Read the value entered by the user into number.

**Step 5:** Print the first two terms of the Fibonacci series (first\_no and second\_no).

**Step 6:** Use a loop (from 2 to number - 1) to calculate and print the subsequent Fibonacci numbers:

* **Step 6a:** Calculate the next term as the sum of the last two terms: next\_no = first\_no + second\_no.
* **Step 6b:** Print the next\_no.
* **Step 6c:** Update first\_no to second\_no and second\_no to next\_no.

**Step 7:** End the program.

**SOURCE CODE**

**#include<iostream>**

**using namespace std;**

**int main()**

**{**

**int number,first\_no=0,second\_no=1,next\_no=0,i;**

**cout<<"Enter number of terms to be printed in fibonacci series:";**

**cin>>number;**

**cout<<first\_no<<" ";**

**cout<<second\_no<<" ";**

**for(i=2;i<number;++i)**

**{**

**next\_no=first\_no+second\_no;**

**cout<<next\_no<<" ";**

**first\_no=second\_no;**

**INPUT**

**Enter number of terms to be printed in fibonacci series: 7**

**OUTPUT:**

**0 1 1 2 3 5 8**

**EXPERIMENT NO : 1.e**  **DATE :**

**AIM:**

**PRIME NUMBERS**

1. **Start**
2. **Input**: Read an integer limit.
3. **Loop**: For each integer num from 2 to limit:
4. Set isPrime to 1 (assuming num is prime).
5. **Inner Loop**: For each integer i from 2 to the square root of num:
   1. If num is divisible by i, set isPrime to 0 and break the loop.
6. If isPrime is still 1, print num
7. **End**

**Source code:**

**#include <iostream>**

**using namespace std;**

**int main() {**

**int limit;**

**cin >> limit;**

**for (int num = 2; num <= limit; num++) {**

**int isPrime = 1;**

**for (int i = 2; i \* i <= num; i++) {**

**if (num % i == 0) {**

**isPrime = 0;**

**break;**

**}**

**}**

**if (isPrime) {**

**cout << num << " ";**

**}**

**}**

**cout << endl;**

**return 0;**

**}**

**OUTPUT:**

**2 3 5 7**

**EXPERIMENT NO:2.a**

**Swap with variable**

**AIM:**

### **Algorithm**

1. **Start**
2. **Initialize** two integers n1 and n2 with values (25 and 50).
3. **Print** the values of n1 and n2 before the swap.
4. **Call** the swap function, passing the addresses of n1 and n2.
5. In the swap function:
   1. Create a temporary variable temp.
   2. Store the value pointed by n1 in temp.
   3. Assign the value pointed by n2 to the location pointed by n1.
   4. Assign temp to the location pointed by n2.
6. **Return** to the main function.
7. **Print** the values of n1 and n2 after the swap.
8. **End**

**SOURCE CODE**

**#include<iostream>**

**void swap(int\*,int\*);**

**using namespace std;**

**int main()**

**{**

**int n1=25,n2=50;**

**cout<<"Before swap:"<<endl<<"Number1="<<n1<<endl<<"Number2="<<n2<<endl;**

**swap(&n1,&n2);**

**cout<<"After swap:"<<endl<<"Number1="<<n1<<endl<<"Number2="<<n2<<endl;**

**return 0;**

**}**

**void swap(int\*n1,int\*n2)**

**{**

**int temp;**

**temp=\*n1;**