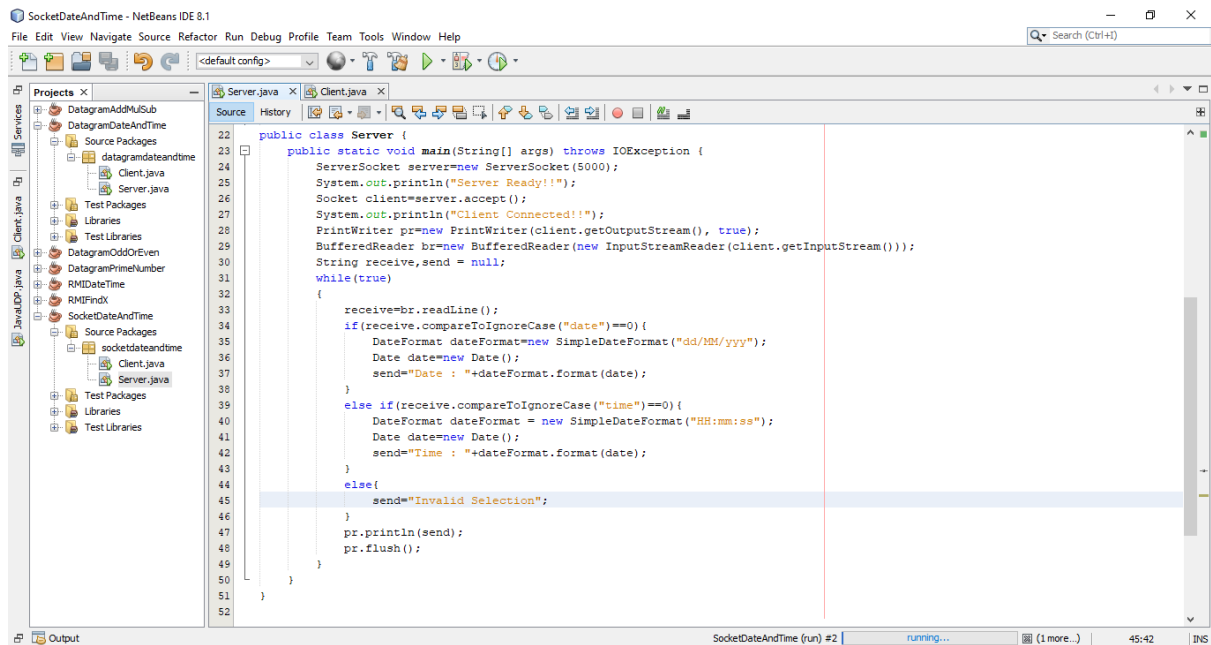


**UNIVERSITY OF MUMBAI Practical Examination – November 2018 M.C.A Semester – V  
LABORATORY L502 [Open Source System for ADC Lab]**

**Socket Programming**

Implement a Date time server containing date() and time() remote , through socket programming.

**Server.java**



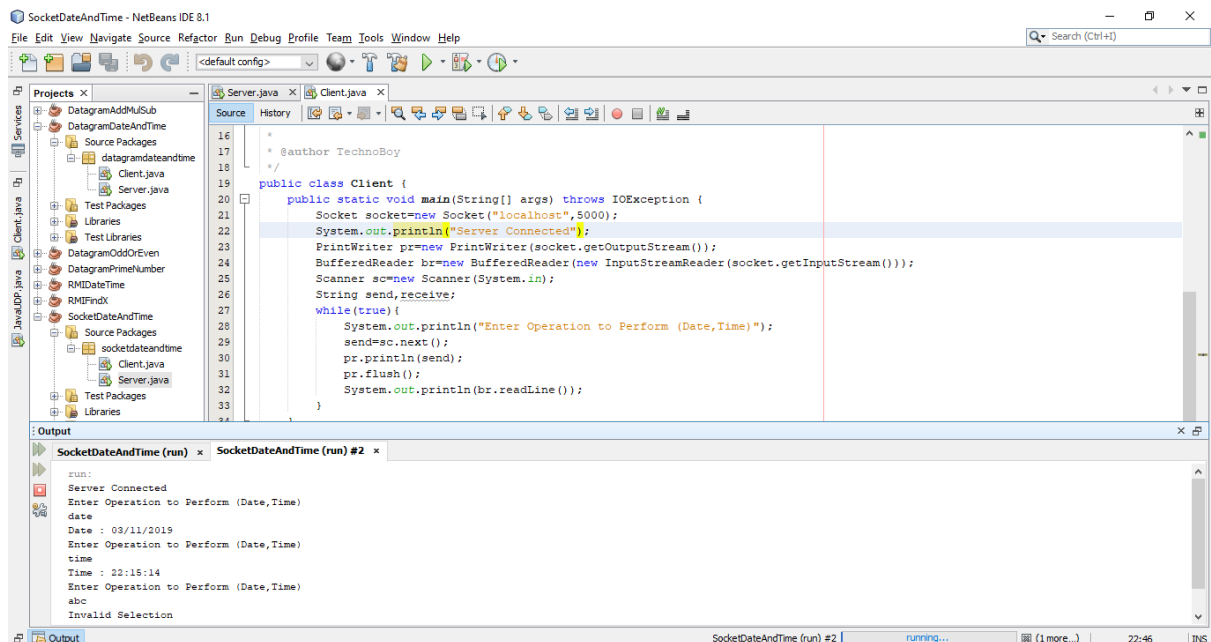
```
SocketDateAndTime - NetBeans IDE 8.1
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Search (Ctrl+F)

Projects
  datagramAddSub
  DatagramDateAndTime
  Source Packages
    datagramdateandtime
  Client.java
  Server.java
  Test Packages
  Libraries
  Test Libraries
  DatagramOddOrEven
  DatagramPrimeNumber
  RMIDateTime
  RMIDFindX
  SocketDateAndTime
  Source Packages
    socketdateandtime
  Client.java
  Server.java
  Test Packages
  Libraries
  Test Libraries

Source
22 public class Server {
23     public static void main(String[] args) throws IOException {
24         ServerSocket server=new ServerSocket(5000);
25         System.out.println("Server Ready!!");
26         Socket client=server.accept();
27         System.out.println("Client Connected!!");
28         PrintWriter pr=new PrintWriter(client.getOutputStream(), true);
29         BufferedReader br=new BufferedReader(new InputStreamReader(client.getInputStream()));
30         String receive,send = null;
31         while(true)
32         {
33             receive=br.readLine();
34             if(receive.compareToIgnoreCase("date")==0){
35                 DateFormat dateFormat=new SimpleDateFormat("dd/MM/yyyy");
36                 Date date=new Date();
37                 send="Date : "+dateFormat.format(date);
38             }
39             else if(receive.compareToIgnoreCase("time")==0){
40                 DateFormat dateFormat = new SimpleDateFormat("HH:mm:ss");
41                 Date date=new Date();
42                 send="Time : "+dateFormat.format(date);
43             }
44             else{
45                 send="Invalid Selection";
46             }
47             pr.println(send);
48             pr.flush();
49         }
50     }
51 }
52

Output
SocketDateAndTime (run) #2 running... (1 more...) 45:42 INS
```

**Client.java**



```
SocketDateAndTime - NetBeans IDE 8.1
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Search (Ctrl+F)

Projects
  datagramAddSub
  DatagramDateAndTime
  Source Packages
    datagramdateandtime
  Client.java
  Server.java
  Test Packages
  Libraries
  Test Libraries
  DatagramOddOrEven
  DatagramPrimeNumber
  RMIDateTime
  RMIDFindX
  SocketDateAndTime
  Source Packages
    socketdateandtime
  Client.java
  Server.java
  Test Packages
  Libraries
  Test Libraries

Source
16 *
17 * @author TechnoBoy
18 */
19 public class Client {
20     public static void main(String[] args) throws IOException {
21         Socket socket=new Socket("localhost",5000);
22         System.out.println("Server Connected");
23         PrintWriter pr=new PrintWriter(socket.getOutputStream());
24         BufferedReader br=new BufferedReader(new InputStreamReader(socket.getInputStream()));
25         Scanner sc=new Scanner(System.in);
26         String send,receive;
27         while(true){
28             System.out.println("Enter Operation to Perform (Date,Time)");
29             send=sc.next();
30             pr.println(send);
31             pr.flush();
32             System.out.println(br.readLine());
33         }
34     }
35 }

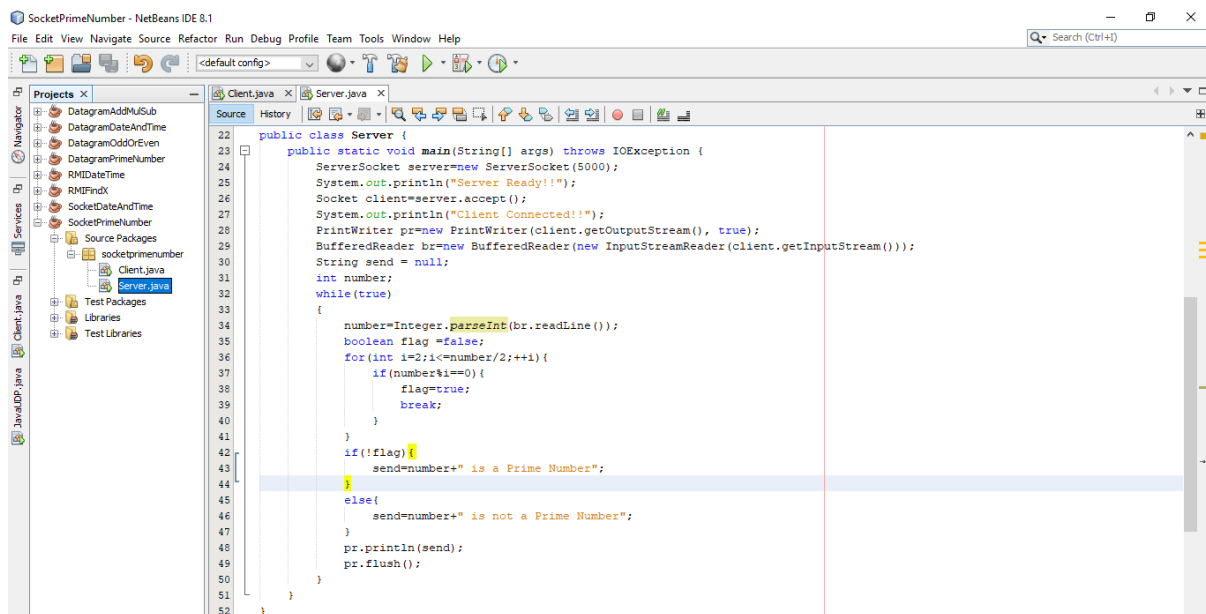
Output
SocketDateAndTime (run) SocketDateAndTime (run) #2
run:
Server Connected
Enter Operation to Perform (Date,Time)
date
Date : 03/11/2019
Enter Operation to Perform (Date,Time)
time
Time : 22:15:14
Enter Operation to Perform (Date,Time)
abc
Invalid Selection

Output
SocketDateAndTime (run) #2 running... (1 more...) 22:46 INS
```

**UNIVERSITY OF MUMBAI Practical Examination – November 2018 M.C.A Semester – V**  
**LABORATORY L502 [Open Source System for ADC Lab]**

**Implement a Server to find whether an entered number is prime or not using  
Java socket**

**Server.java**

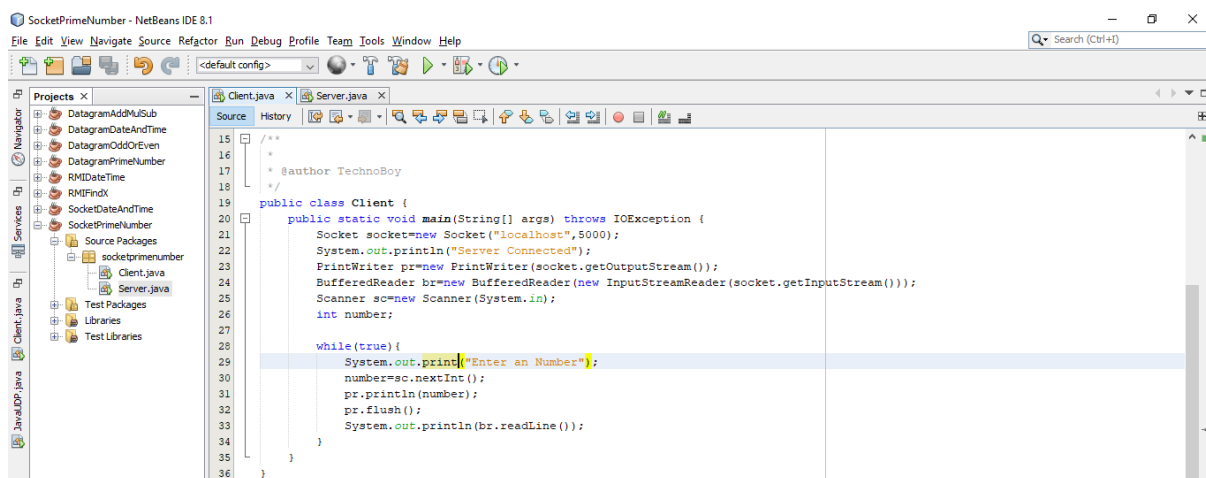


```
SocketPrimeNumber - NetBeans IDE 8.1
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Search (Ctrl+F)

Projects
  SocketPrimeNumber
    Client.java
    Server.java
    Source Packages
    Test Packages
    Libraries
    Test Libraries

Source
22 public class Server {
23     public static void main(String[] args) throws IOException {
24         ServerSocket server=new ServerSocket(5000);
25         System.out.println("Server Ready!!");
26         Socket client=server.accept();
27         System.out.println("Client Connected!!");
28         PrintWriter pr=new PrintWriter(client.getOutputStream(), true);
29         BufferedReader br=new BufferedReader(new InputStreamReader(client.getInputStream()));
30         String send = null;
31         int number;
32         while(true)
33         {
34             number=Integer.parseInt(br.readLine());
35             boolean flag =false;
36             for(int i=2;i<=number/2;++i){
37                 if(number%i==0){
38                     flag=true;
39                     break;
40                 }
41             }
42             if(!flag){
43                 send=number+" is a Prime Number";
44             }
45             else{
46                 send=number+" is not a Prime Number";
47             }
48             pr.println(send);
49             pr.flush();
50         }
51     }
52 }
```

**Client.java**



```
SocketPrimeNumber - NetBeans IDE 8.1
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Search (Ctrl+F)

Projects
  SocketPrimeNumber
    Client.java
    Server.java
    Source Packages
    Test Packages
    Libraries
    Test Libraries

Source
15 /**
16  *
17  * @author TechnoBoy
18  */
19 public class Client {
20     public static void main(String[] args) throws IOException {
21         Socket socket=new Socket("localhost",5000);
22         System.out.println("Server Connected");
23         PrintWriter pr=new PrintWriter(socket.getOutputStream());
24         BufferedReader br=new BufferedReader(new InputStreamReader(socket.getInputStream()));
25         Scanner sc=new Scanner(System.in);
26         int number;
27
28         while(true){
29             System.out.print("Enter an Number");
30             number=sc.nextInt();
31             pr.println(number);
32             pr.flush();
33             System.out.println(br.readLine());
34         }
35     }
36 }
```

Implement a Server to find whether an entered string is a palindrome using Java socket

SocketPrimerNumber - NetBeans IDE 8.1

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config>

Projects

- SocketPrimerNumber
  - DatagramAddMSub
  - DatagramDateAndTime
  - DatagramOddOrEven
  - DatagramPrimerNumber
  - RMDateTime
  - RMFindX
  - SocketDateAndTime
  - SocketPalindrome
  - SocketPrimerNumber
    - Source Packages
      - socketprimernumber
        - Client.java
        - Server.java
      - Test Packages
      - Libraries
      - Test Libraries
    - SocketSum

Source

```

22 public class Server {
23     public static void main(String[] args) throws IOException {
24         ServerSocket server=new ServerSocket(5000);
25         System.out.println("Server Ready!!");
26         Socket client=server.accept();
27         System.out.println("Client Connected!!");
28         PrintWriter pr=new PrintWriter(client.getOutputStream(), true);
29         BufferedReader br=new BufferedReader(new InputStreamReader(client.getInputStream()));
30         String send, receive, reverse = "";
31         while(true)
32         {
33             receive=br.readLine();
34             int length=receive.length();
35             for(int i=length-1;i>=0;i--) {
36                 reverse=reverse+receive.charAt(i);
37             }
38             if(receive.equals(reverse)){
39                 send=receive+" is a Palindrome String";
40             }
41             else{
42                 send=receive+" is not a Palindrome String";
43             }
44             pr.println(send);
45             pr.flush();
46         }

```

Output

SocketPrimerNumber (run) x SocketPrimerNumber (run) #2 x

```

run:
Server Ready!!
Client Connected!!

```

Output

SocketPrimerNumber (run) #2 running... (1 more) | 38:41

The screenshot shows the NetBeans IDE 8.1 interface. The 'Projects' pane on the left displays a project named 'SocketPrimeNumber' with a package 'SocketPrimeNumber' containing 'Client.java' and 'Server.java'. The 'Client.java' file is open in the editor, showing the following code:

```

16  *
17  * @author TechnoBoy
18  */
19  public class Client {
20      public static void main(String[] args) throws IOException {
21          Socket socket=new Socket("localhost",5000);
22          System.out.println("Server Connected");
23          PrintWriter pr=new PrintWriter(socket.getOutputStream());
24          BufferedReader br=new BufferedReader(new InputStreamReader(socket.getInputStream()));
25          Scanner sc=new Scanner(System.in);
26          String send;
27
28          while(true){
29              System.out.print("Enter a String : ");
30              send=sc.next();
31              pr.println(send);
32              pr.flush();
33              System.out.println(br.readLine());
34          }
35      }
36  }

```

The 'Output' window at the bottom shows the execution results for 'SocketPrimeNumber (run) #2':

```

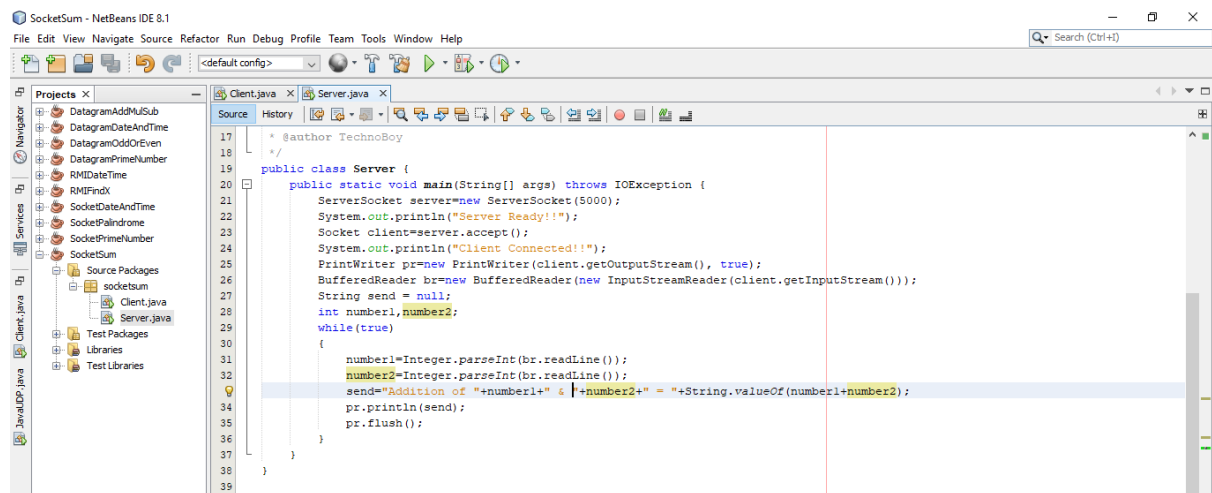
run:
Server Connected
Enter a String : aba
aba is a Palindrome String
Enter a String : abc
abc is not a Palindrome String
Enter a String :

```

**UNIVERSITY OF MUMBAI Practical Examination – November 2018 M.C.A Semester – V**  
**LABORATORY L502 [Open Source System for ADC Lab]**

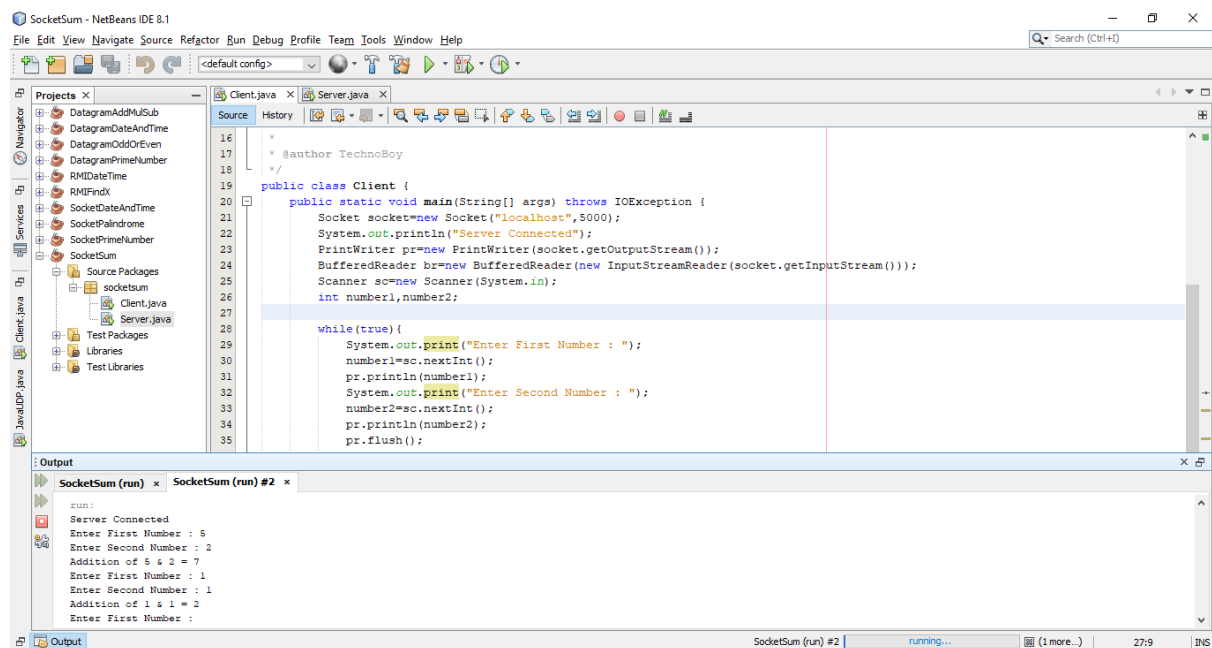
## Implement a Server which calculates sum of two numbers using Java Socket

### Server.java



```
17  * @author TechnoBoy
18  */
19  public class Server {
20      public static void main(String[] args) throws IOException {
21          ServerSocket server=new ServerSocket(5000);
22          System.out.println("Server Ready!!");
23          Socket client=server.accept();
24          System.out.println("Client Connected!!");
25          PrintWriter pr=new PrintWriter(client.getOutputStream(), true);
26          BufferedReader br=new BufferedReader(new InputStreamReader(client.getInputStream()));
27          String send = null;
28          int number1,number2;
29          while(true)
30          {
31              number1=Integer.parseInt(br.readLine());
32              number2=Integer.parseInt(br.readLine());
33              send="Addition of "+number1+" & "+number2+" = "+String.valueOf(number1+number2);
34              pr.println(send);
35              pr.flush();
36          }
37      }
38  }
39  }
```

### Client.java



```
16  *
17  * @author TechnoBoy
18  */
19  public class Client {
20      public static void main(String[] args) throws IOException {
21          Socket socket=new Socket("localhost",5000);
22          System.out.println("Server Connected");
23          PrintWriter pr=new PrintWriter(socket.getOutputStream());
24          BufferedReader br=new BufferedReader(new InputStreamReader(socket.getInputStream()));
25          Scanner sc=new Scanner(System.in);
26          int number1,number2;
27
28          while(true){
29              System.out.print("Enter First Number : ");
30              number1=sc.nextInt();
31              pr.println(number1);
32              System.out.print("Enter Second Number : ");
33              number2=sc.nextInt();
34              pr.println(number2);
35              pr.flush();
36          }
37      }
38  }
```

**Output**

```
run:
Server Connected
Enter First Number : 5
Enter Second Number : 2
Addition of 5 & 2 = 7
Enter First Number : 1
Enter Second Number : 1
Addition of 1 & 1 = 2
Enter First Number :
```