

C PROGRAMMING -

Title: 1. Program to check whether number is perfect number or not.

Source Code:

```
#include<stdio.h>

void checkPerfect(int num)
{
    int sum=0,i=1;
    while(i<num)
    {
        if(num%i==0)
        {
            sum+=i;
        }
        i++;
    }
    if(sum==num)
    {
        printf("number is a perfect number \n");
    }
    else
    {
        printf("number is not a perfect number \n");
    }
}

void main()
{
    int num;
    printf("enter the number: ");
    scanf("%d",&num);
    checkPerfect(num);
}
```

Output:



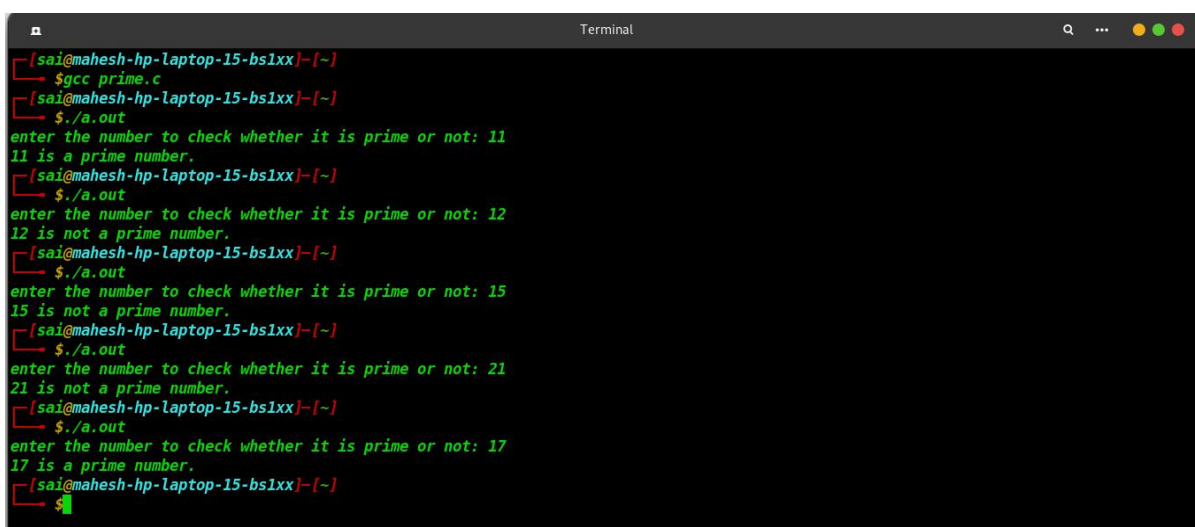
```
[sai@mahesh-hp-laptop-15-bs1xx]~$ gcc perfect.c
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number: 23
number is not a perfect number
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number: 28
number is a perfect number
[sai@mahesh-hp-laptop-15-bs1xx]~$
```

Title: 2. Program to check weather number is Prime number or not.

Source Code:

```
#include<stdio.h>
void checkPrime(int n)
{
    int i=2;
    if(n==1)
    {
        printf("%d is not a prime number.\n",n);
    }
    while(i<=n)
    {
        if(n%i==0)
        {
            if(n==i)
            {
                printf("%d is a prime number.\n",n);
            }
            else
            {
                printf("%d is not a prime number.\n",n);
                break;
            }
        }
        i++;
    }
}
void main()
{
    int n;
    printf("enter the number to check whether it is prime or not: ");
    scanf("%d",&n);
    checkPrime(n);
}
```

Output:

A terminal window titled "Terminal" showing the execution of a C program. The user enters the number 11, and the program outputs "11 is a prime number.". The user enters 12, and the program outputs "12 is not a prime number.". The user enters 15, and the program outputs "15 is not a prime number.". The user enters 21, and the program outputs "21 is not a prime number.". The user enters 17, and the program outputs "17 is a prime number.". The terminal shows the prompt "\$" at the end of each line.

```
[sai@mahesh-hp-laptop-15-bs1xx]~$ gcc prime.c
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number to check whether it is prime or not: 11
11 is a prime number.
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number to check whether it is prime or not: 12
12 is not a prime number.
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number to check whether it is prime or not: 15
15 is not a prime number.
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number to check whether it is prime or not: 21
21 is not a prime number.
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number to check whether it is prime or not: 17
17 is a prime number.
[sai@mahesh-hp-laptop-15-bs1xx]~$
```

Title: 3. Program to check weather number is Armstrong number or not.

Source Code:

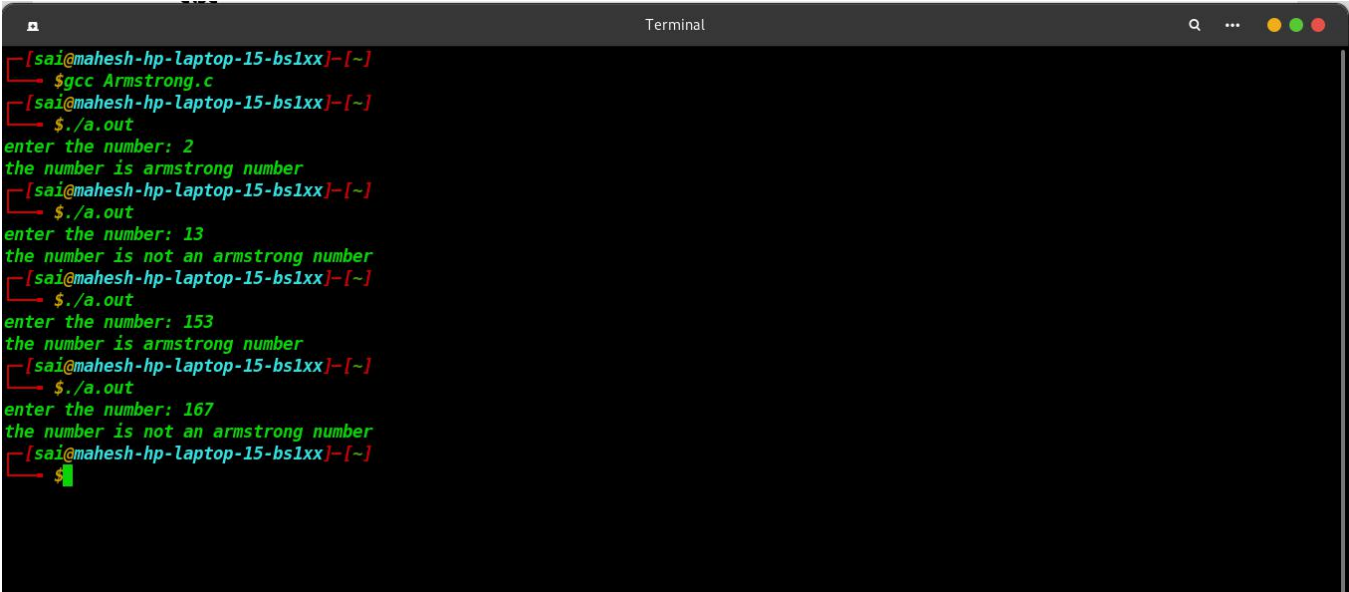
```
#include<stdio.h>
void checkArmstrong(int num)
{
    int num2=num,i=0,sum=0,mult,value;
```

```

// to find the no. of digits in a number
while(num2!=0)
{
    num2/=10;
    i++;
}
// to find the armstrong value
num2=num;
while(num2!=0)
{
    value= num2%10;
    mult=1;
    for(int j=1;j<=i;j++)
    {
        mult*=value;
    }
    sum+=mult;
    num2/=10;
}
// to check the armstrong or not
if(sum==num)
{
    printf("the number is armstrong number\n");
}
else
{
    printf("the number is not an armstrong number\n");
}
}
void main()
{
    int num;
    printf("enter the number: ");
    scanf("%d",&num);
    checkArmstrong(num);
}

```

Output:



```

Terminal
[sai@mahesh-hp-laptop-15-bs1xx]~$ gcc Armstrong.c
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number: 2
the number is armstrong number
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number: 13
the number is not an armstrong number
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number: 153
the number is armstrong number
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number: 167
the number is not an armstrong number
[sai@mahesh-hp-laptop-15-bs1xx]~$

```

Title: 4. Program to print febonici series upto n numbers.

Source Code:

```
#include<stdio.h>
```

```

void printFibonacci(int num)
{
    int i=0,j=1,k;
    if(num>0)
    {
        printf("%d\t",0);
    }
    while(num>1)
    {
        k=i;
        i=j;
        j=i+k;
        printf("%d\t",j);
        num--;
    }
    printf("\n");
}

void main()
{
    int num;
    printf("enter the number: ");
    scanf("%d",&num);
    printFibonacci(num);
}

```

Output:

```

[sai@mahesh-hp-laptop-15-bs1xx]~$ gcc fibonacci.c
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number: 10
0      1      1      2      3      5      8      13      21      34
[sai@mahesh-hp-laptop-15-bs1xx]~$ ./a.out
enter the number: 5
0      1      1      2      3
[sai@mahesh-hp-laptop-15-bs1xx]~$

```

Title: 1. Program to check whether number is perfect number or not.

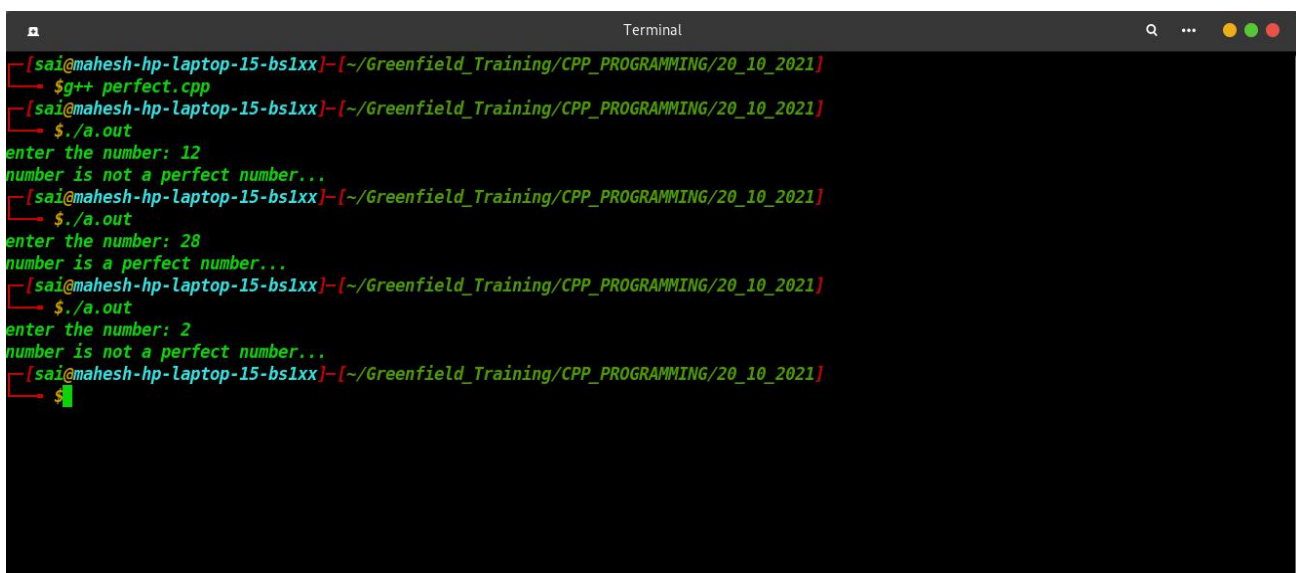
Source Code:

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

bool checkPerfect(int num)
{
    int sum=0,i=1;
    while(i<num)
    {
        if(num%i==0)
        {
            sum+=i;
        }
        i++;
    }
    if(sum==num)
    {
        return true;
    }
    else
    {
        return false;
    }
}

int main()
{
    int num;
    cout<<"enter the number: ";
    cin>>num;
    if(checkPerfect(num))
    {
        cout<<"number is a perfect number..."<<endl;
    }
    else
    {
        cout<<"number is not a perfect number..."<<endl;
    }
    return 0;
}
```

Output:



```
Terminal
[sai@mahesh-hp-laptop-15-bs1xx]~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$g++ perfect.cpp
[sai@mahesh-hp-laptop-15-bs1xx]~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$./a.out
enter the number: 12
number is not a perfect number...
[sai@mahesh-hp-laptop-15-bs1xx]~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$./a.out
enter the number: 28
number is a perfect number...
[sai@mahesh-hp-laptop-15-bs1xx]~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$./a.out
enter the number: 2
number is not a perfect number...
[sai@mahesh-hp-laptop-15-bs1xx]~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$
```

Title: 2. Program to check whether number is Prime number or not.

Source Code:

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

class Prime
{
    int num;
public:
    Prime(int num)
    {
        this->num = num;
    }
    void checkPrime()
    {
        int i=2;
        if(this->num==1)
        {
            printf("%d is not a prime number.\n",this->num);
        }
        while(i<=this->num)
        {
            if(this->num%i==0)
            {
                if(this->num==i)
                {
                    printf("%d is a prime number.\n",this->num);
                }
                else
                {
                    printf("%d is not a prime number.\n",this->num);
                    break;
                }
            }
            i++;
        }
    }
};

int main()
{
    Prime p(2);
    Prime q(28);
    p.checkPrime();
    q.checkPrime();

    return 0;
}
```

Output:

```
Terminal
[sai@mahesh-hp-laptop-15-bslxx] ~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$g++ prime.cpp
[sai@mahesh-hp-laptop-15-bslxx] ~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$./a.out
2 is a prime number.
28 is not a prime number.
[sai@mahesh-hp-laptop-15-bslxx] ~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$
```

Title: 3. Program to check weather number is Armstrong number or not.

Source Code:

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

bool checkArmstrong(int num)
{
    int num2=num,i=0,sum=0,mult,value;
    // to find the no. of digits in a number
    while(num2!=0)
    {
        num2/=10;
        i++;
    }
    // to find the armstrong value
    num2=num;
    while(num2!=0)
    {
        value= num2%10;
        mult=1;
        for(int j=1;j<=i;j++)
        {
            mult*=value;
        }
        sum+=mult;
        num2/=10;
    }
    // to check the armstrong or not
    if(sum==num)
    {
        return true;
    }
    else
    {
        return false;
    }
}

int main()
{
    int num;
    printf("Enter the number: ");
    cin>>num;
    if(checkArmstrong(num))
    {
```

```

        cout<<"The number is an armstrong number"<<endl;
    }
    else
    {
        cout<<"The number is not an armstrong number"<<endl;
    }
    return 0;
}

```

Output:

```

Terminal
[sai@mahesh-hp-laptop-15-bslxx] ~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$g++ Armstrong.cpp
[sai@mahesh-hp-laptop-15-bslxx] ~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$./a.out
Enter the number: 2
The number is an armstrong number
[sai@mahesh-hp-laptop-15-bslxx] ~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$./a.out
Enter the number: 4
The number is an armstrong number
[sai@mahesh-hp-laptop-15-bslxx] ~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$./a.out
Enter the number: 12
The number is not an armstrong number
[sai@mahesh-hp-laptop-15-bslxx] ~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$./a.out
Enter the number: 153
The number is an armstrong number
[sai@mahesh-hp-laptop-15-bslxx] ~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
$

```

Title: 4. Program to print febonici series upto n numbers.

Source Code:

```

#include<iostream>

void printFibonacii(int num)
{
    int i=0,j=1,k;
    if(num>0)
    {
        std::cout<<0<<"\t";
    }
    while(num>1)
    {
        k=i;
        i=i+j;
        std::cout<<i<<"\t";
        j=k;
        num--;
    }
    std::cout<<std::endl;
}

int main()
{
    int num;
    std::cout<<"Enter the number: ";
    std::cin>>num;
    printFibonacii(num);
}

```

Output:


```
Terminal
[sai@mahesh-hp-laptop-15-bslxx]~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
→ g++ fibonacci.cpp
[sai@mahesh-hp-laptop-15-bslxx]~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
→ ./a.out
Enter the number: 5
0      1      1      2      3
[sai@mahesh-hp-laptop-15-bslxx]~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
→ ./a.out
Enter the number: 10
0      1      1      2      3      5      8      13      21      34
[sai@mahesh-hp-laptop-15-bslxx]~/Greenfield_Training/CPP_PROGRAMMING/20_10_2021
→ $
```

Title: 1. Program to check weather number is perfect number or not.

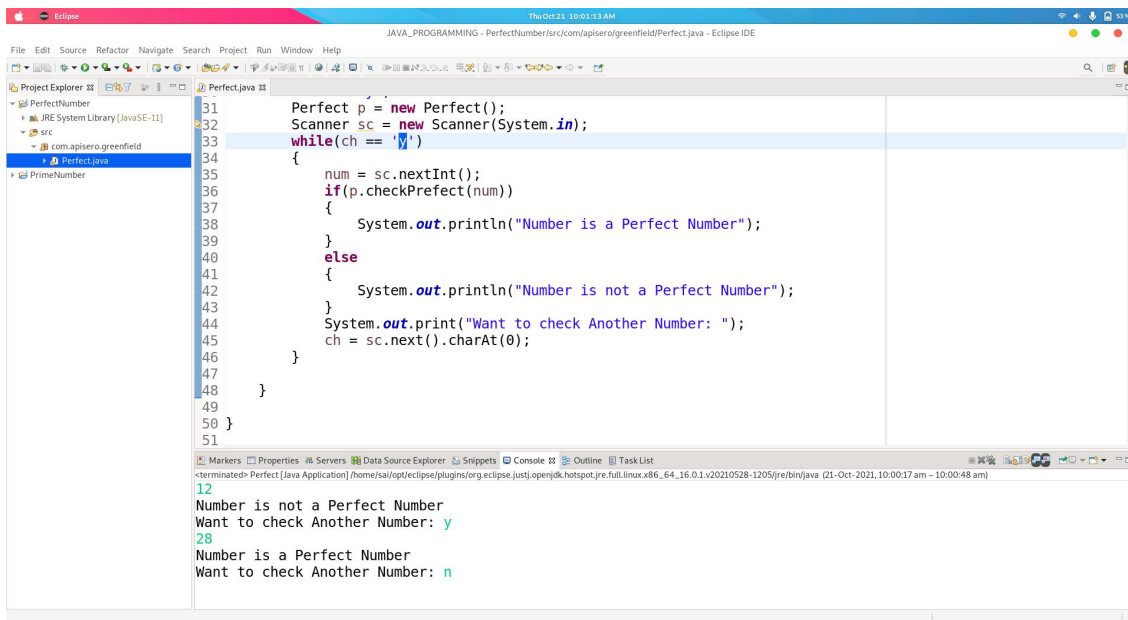
Source Code:

```
package com.apisero.greenfield;
import java.util.Scanner;

public class Perfect
{
    boolean checkPrefect(int num)
    {
        int sum=0,i=1;
        while(i<num)
        {
            if(num%i==0)
            {
                sum+=i;
            }
            i++;
        }
        if(sum==num)
        {
            return true;
        }
        else
        {
            return false;
        }
    }

    public static void main(String[] args)
    {
        int num;
        char ch='y';
        Perfect p = new Perfect();
        Scanner sc = new Scanner(System.in);
        while(ch == 'y')
        {
            num = sc.nextInt();
            if(p.checkPrefect(num))
            {
                System.out.println("Number is a Perfect Number");
            }
            else
            {
                System.out.println("Number is not a Perfect Number");
            }
            System.out.print("Want to check Another Number: ");
            ch = sc.next().charAt(0);
        }
    }
}
```

Output:



Title: 2. Program to check weather number is Prime number or not.

Source Code:

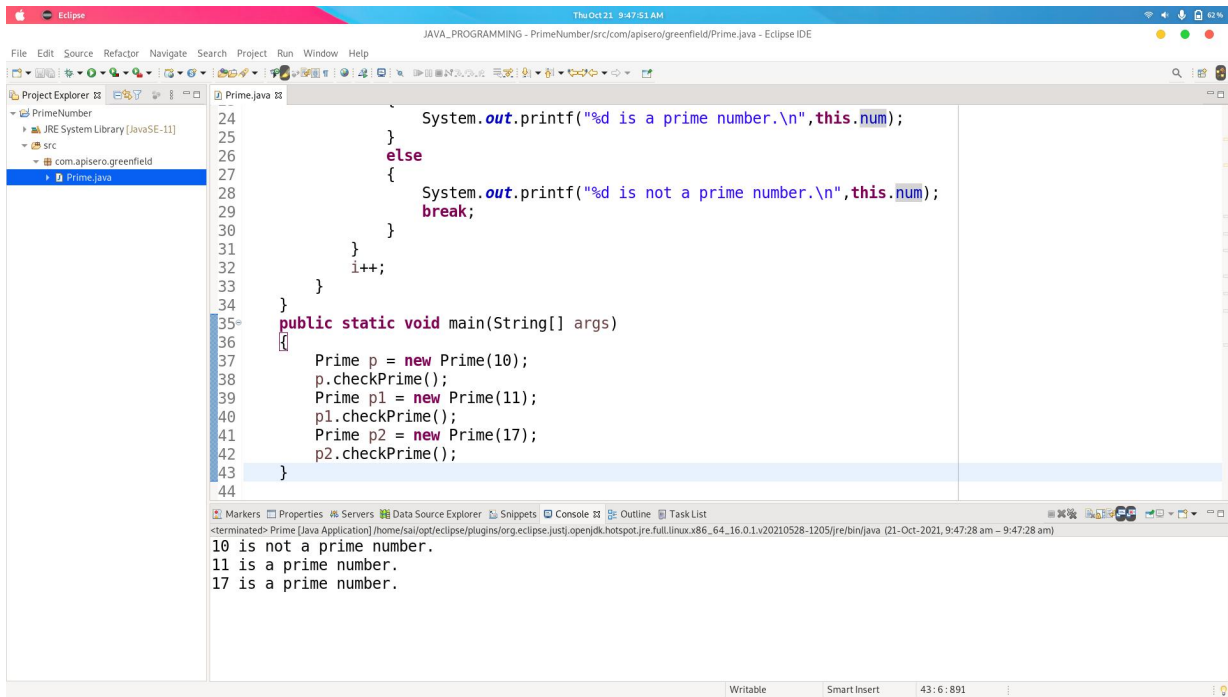
```

package com.apisero.greenfield;

public class Prime
{
    int num;
    Prime(int num)
    {
        this.num = num;
    }
    void checkPrime()
    {
        int i=2;
        if(this.num==1)
        {
            System.out.printf("%d is not a prime number.\n",this.num);
        }
        while(i<=this.num)
        {
            if(this.num%i==0)
            {
                if(this.num==i)
                {
                    System.out.printf("%d is a prime number.\n",this.num);
                }
                else
                {
                    System.out.printf("%d is not a prime number.\n",this.num);
                    break;
                }
            }
            i++;
        }
    }
    public static void main(String[] args)
    {
        Prime p = new Prime(10);
        p.checkPrime();
        Prime p1 = new Prime(11);
        p1.checkPrime();
        Prime p2 = new Prime(17);
        p2.checkPrime();
    }
}

```

Output:



```
24         System.out.printf("%d is a prime number.\n",this.num);
25     }
26     else
27     {
28         System.out.printf("%d is not a prime number.\n",this.num);
29         break;
30     }
31 }
32 i++;
33 }
34 }
35 public static void main(String[] args)
36 {
37     Prime p = new Prime(10);
38     p.checkPrime();
39     Prime p1 = new Prime(11);
40     p1.checkPrime();
41     Prime p2 = new Prime(17);
42     p2.checkPrime();
43 }
44 }
```

10 is not a prime number.
11 is a prime number.
17 is a prime number.

Title: 3. Program to check weather number is Armstrong number or not.

Source Code:

```
package com.apisero.greenfield;
import java.util.Scanner;

public class Armstrong
{
    boolean checkArmstrong(int num)
    {
        int num2=num,i=0,sum=0,mult,value;
        // to find the no. of digits in a number
        while(num2!=0)
        {
            num2/=10;
            i++;
        }
        // to find the armstrong value
        num2=num;
        while(num2!=0)
        {
            value= num2%10;
            mult=1;
            for(int j=1;j<=i;j++)
            {
                mult*=value;
            }
            sum+=mult;
            num2/=10;
        }
        // to check the armstrong or not
        if(sum==num)
        {
            return true;
        }
        else
        {
            return false;
        }
    }
}
```

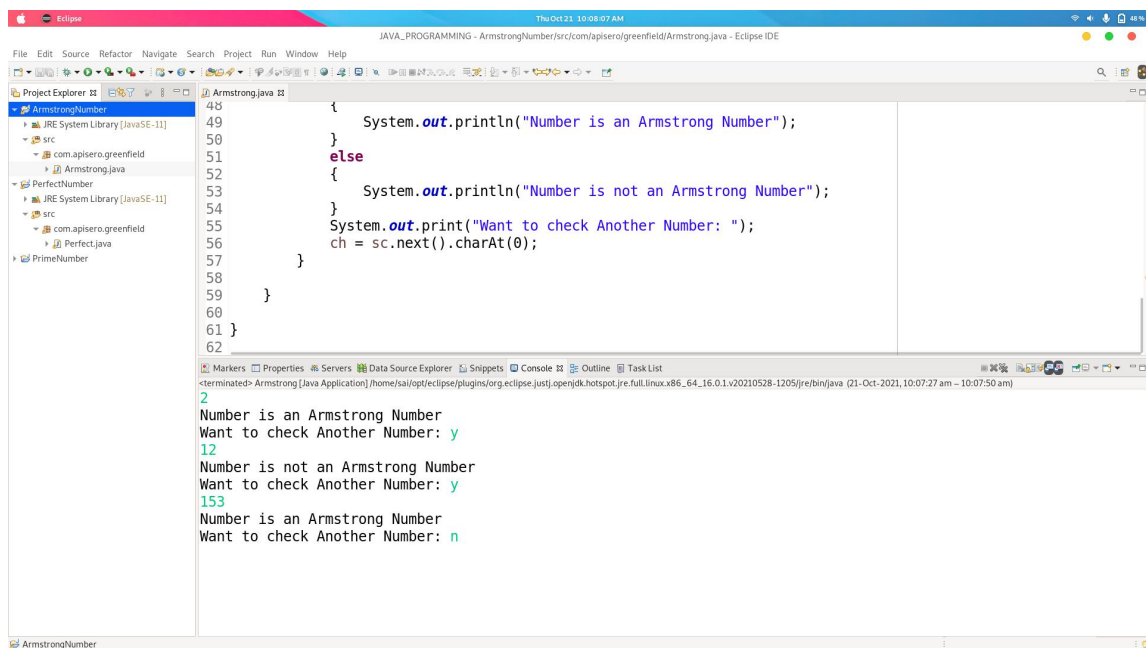
```

    }

    public static void main(String[] args)
    {
        int num;
        char ch='y';
        Armstrong p = new Armstrong();
        Scanner sc = new Scanner(System.in);
        while(ch == 'y')
        {
            num = sc.nextInt();
            if(p.checkArmstrong(num))
            {
                System.out.println("Number is an Armstrong Number");
            }
            else
            {
                System.out.println("Number is not an Armstrong Number");
            }
            System.out.print("Want to check Another Number: ");
            ch = sc.next().charAt(0);
        }
    }
}

```

Output:



The screenshot shows the Eclipse IDE interface. The Project Explorer on the left displays a project named 'ArmstrongNumber' with a source folder 'src' containing 'Armstrong.java'. The main editor shows the code for 'Armstrong.java', which includes a 'checkArmstrong' method and a 'main' method. The Console window at the bottom shows the program's execution output:

```

2
Number is an Armstrong Number
Want to check Another Number: y
12
Number is not an Armstrong Number
Want to check Another Number: y
153
Number is an Armstrong Number
Want to check Another Number: n

```

Title: 4. Program to print febonici series upto n numbers.

Source Code:

```

package com.apisero.greenfield;

import java.util.Scanner;

public class Fibonacii
{
    void printFibonacii(int num)
    {
        int i=0,j=1,k;
    }
}

```

```

        if(num>0)
        {
            System.out.print(0+"\t");
        }
        while(num>1)
        {
            k=i;
            i=i+j;
            System.out.print(i+"\t");
            j=k;
            num--;
        }
        System.out.println();
    }

    public static void main(String[] args)
    {
        int num;
        char ch='y';
        Fibonacci p = new Fibonacci();
        Scanner sc = new Scanner(System.in);
        while(ch == 'y')
        {
            num = sc.nextInt();
            p.printFibonacci(num);
            System.out.print("Want to check Another Number: ");
            ch = sc.next().charAt(0);
        }
    }
}

```

Output:

The screenshot shows the Eclipse IDE with the Fibonacci program code in the editor and its output in the console. The code is as follows:

```

18         System.out.print(1+"\t");
19         j=k;
20         num--;
21     }
22     System.out.println();
23 }
24
25 public static void main(String[] args)
26 {
27     int num;
28     char ch='y';
29     Fibonacci p = new Fibonacci();
30     Scanner sc = new Scanner(System.in);
31     while(ch == 'y')
32     {
33

```

The console output shows the program's execution:

```

5
0 1 1 2 3
Want to check Another Number: y
10
0 1 1 2 3 5 8 13 21 34
Want to check Another Number: y
13
0 1 1 2 3 5 8 13 21 34 55 89 144
Want to check Another Number: n

```