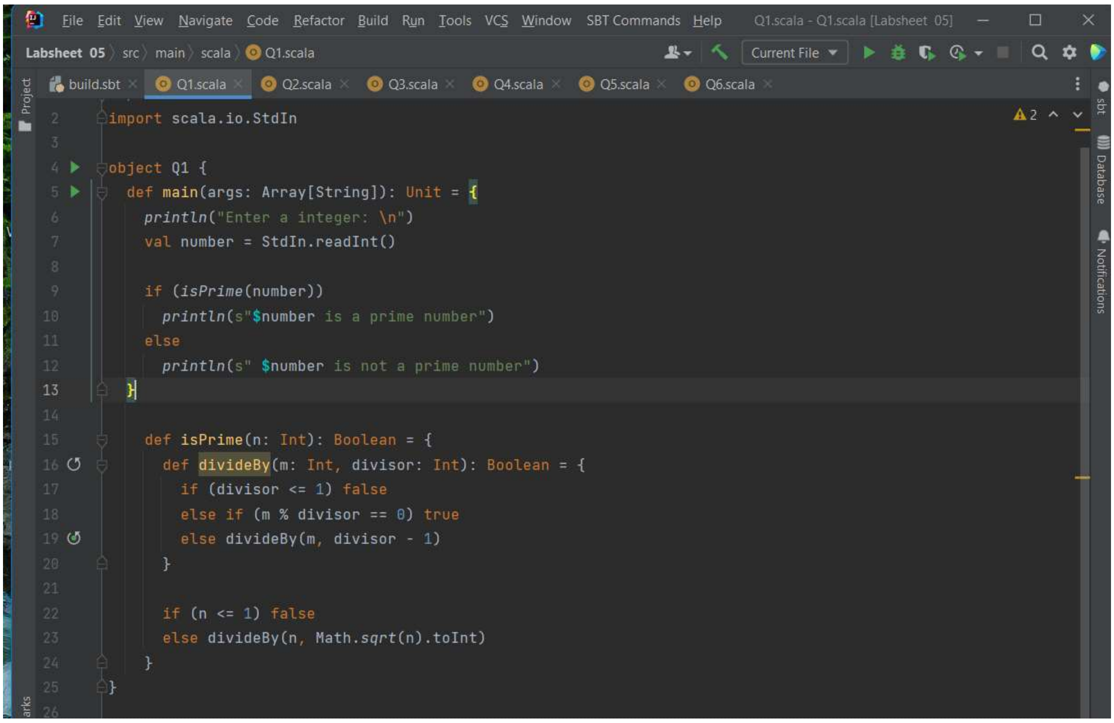
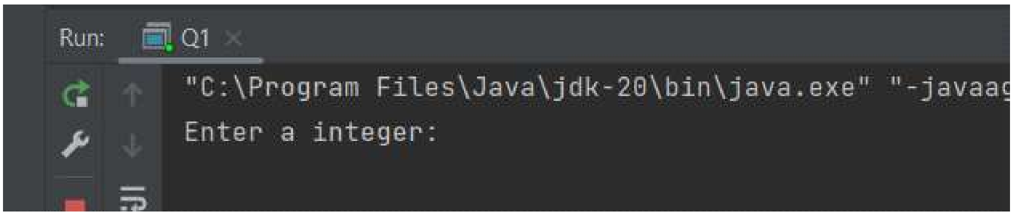
Q1:

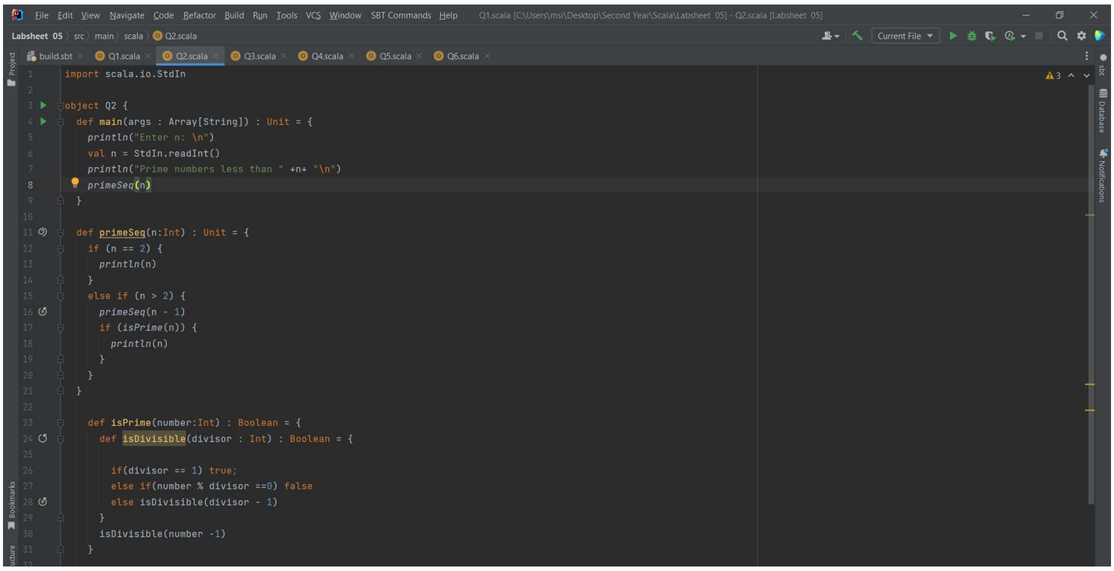


```
import scala.io.StdIn

object Q1 {
  def main(args: Array[String]): Unit = {
    println("Enter a integer: \n")
    val number = StdIn.readInt()

    if (isPrime(number))
      println(s"$number is a prime number")
    else
      println(s" $number is not a prime number")
  }

    def isPrime(n: Int): Boolean = {
      def divideBy(m: Int, divisor: Int): Boolean = {
        if (divisor <= 1) false
        else if (m % divisor == 0) true
        else divideBy(m, divisor - 1)
      }

      if (n <= 1) false
      else divideBy(n, Math.sqrt(n).toInt)
    }
}
```

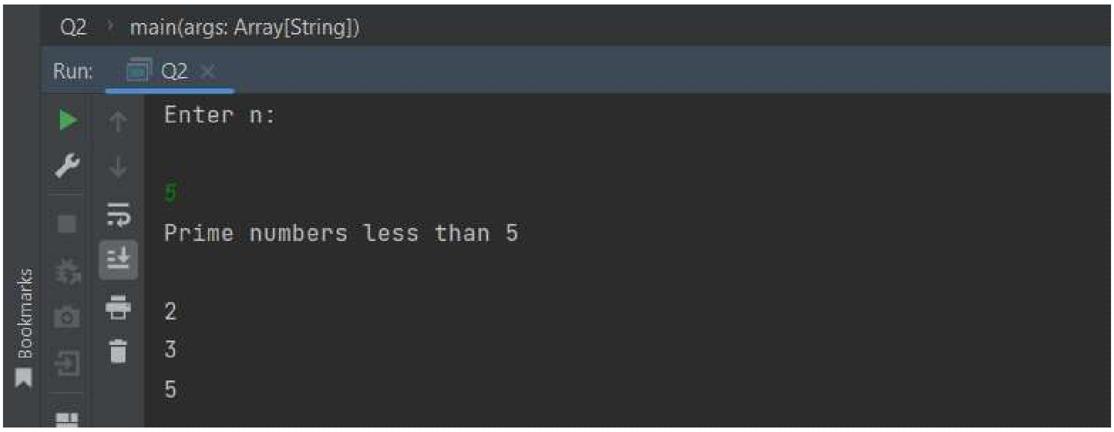


```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaag
Enter a integer:
```

Q2:

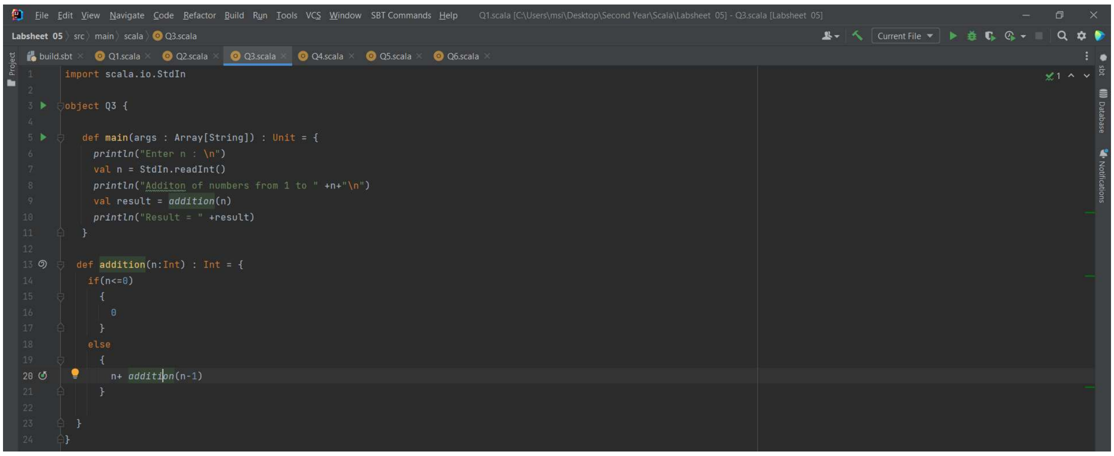


```
import scala.io.StdIn

object Q2 {
  def main(args : Array[String]) : Unit = {
    println("Enter n: \n")
    val n = StdIn.readInt()
    println("Prime numbers less than " +n+ "\n")
    primeSeq(n)
  }

  def primeSeq(n:Int) : Unit = {
    if (n == 2) {
      println(n)
    }
    else if (n > 2) {
      primeSeq(n - 1)
      if (isPrime(n)) {
        println(n)
      }
    }
  }

    def isPrime(number:Int) : Boolean = {
      def isDivisible(divisor : Int) : Boolean = {

        if(divisor == 1) true;
        else if(number % divisor ==0) false
        else isDivisible(divisor - 1)
      }
      isDivisible(number -1)
    }
```

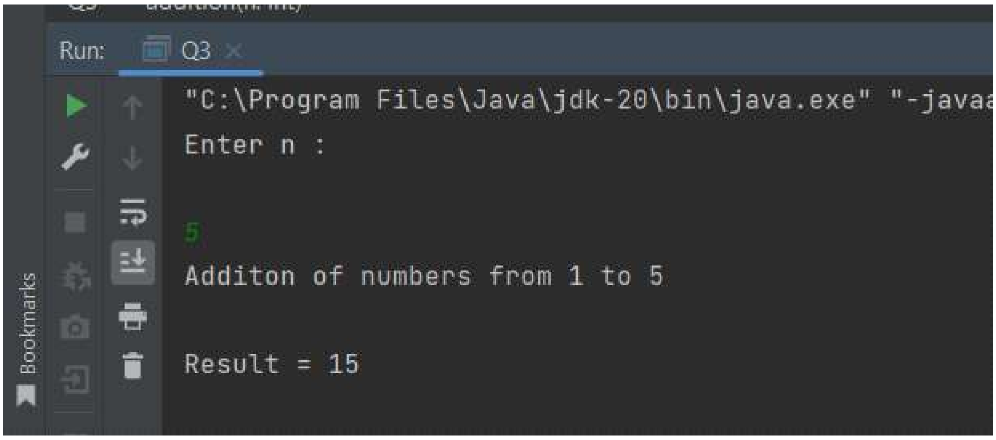


```
Enter n:

5
Prime numbers less than 5

2
3
5
```

Q3:

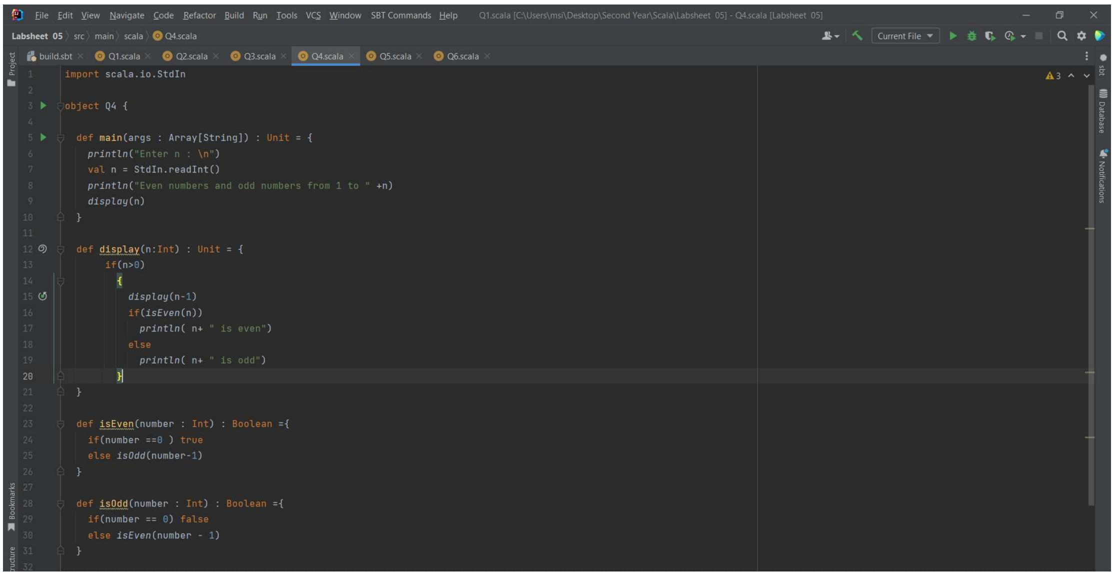

File Edit View Navigate Code Refactor Build Run Tools VCS Window SBT Commands Help
Q1.scala [C:\Users\msi\Desktop\Second Year\Scala\Labsheet 05] - Q3.scala [Labsheet 05]
Labsheet 05 src main scala Q3.scala
Current File
build.sbt
Q1.scala
Q2.scala
Q3.scala
Q4.scala
Q5.scala
Q6.scala
Project

```scala
import scala.io.StdIn

object Q3 {

   def main(args : Array[String]) : Unit = {
     println("Enter n : \n")
     val n = StdIn.readInt()
     println("Additon of numbers from 1 to " +n+"\n")
     val result = addition(n)
     println("Result = " +result)
   }

  def addition(n:Int) : Int = {
    if(n<=0)
      {
        0
      }
    else
      {
        n+ addition(n-1)
      }

  }
}
```



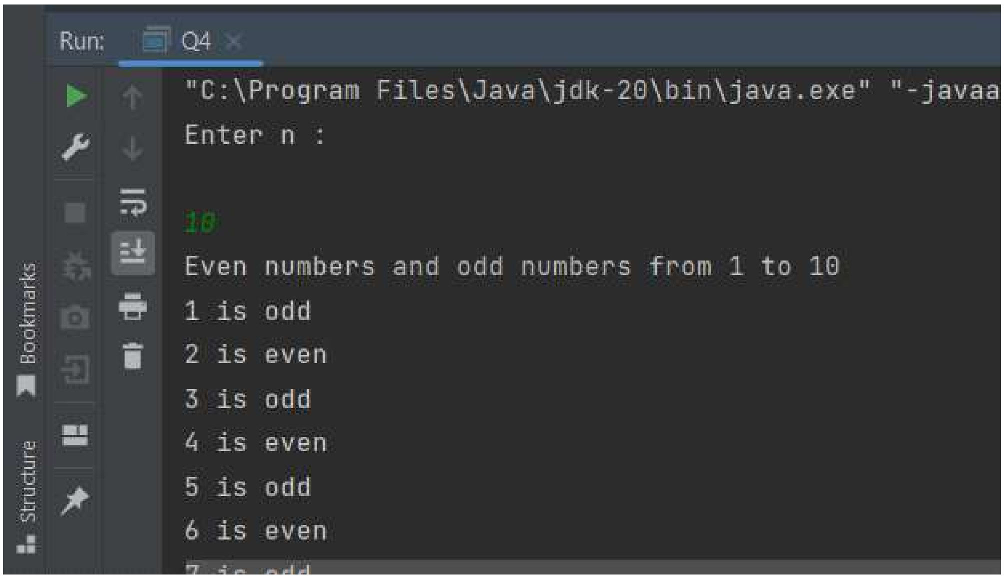
```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaa
Enter n :

5
Additon of numbers from 1 to 5

Result = 15
```

Q4:



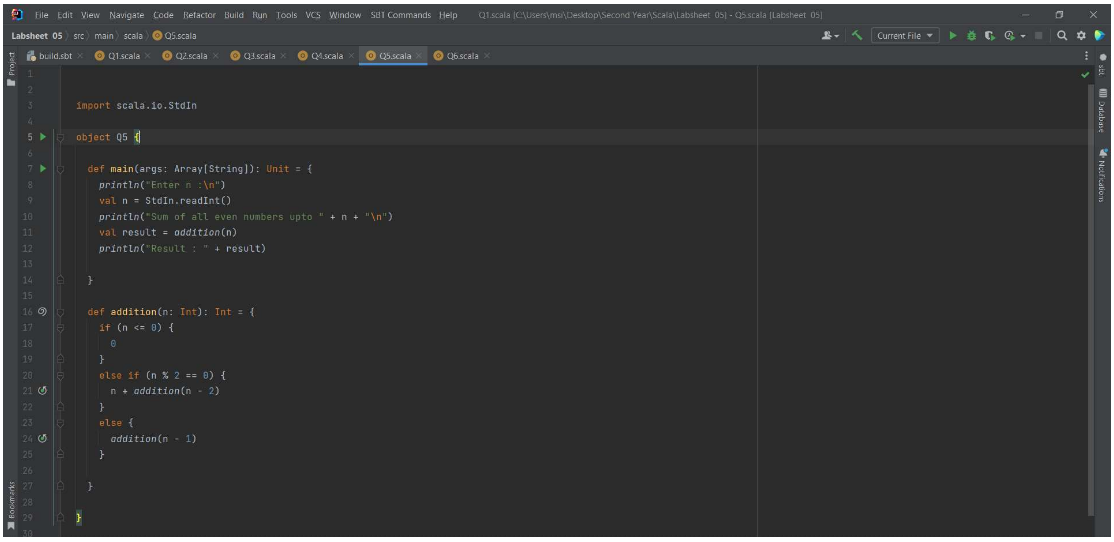
File Edit View Navigate Code Refactor Build Run Tools VCS Window SBT Commands Help
Q1.scala [C:\Users\msi\Desktop\Second Year\Scala\Labsheet 05] - Q4.scala [Labsheet 05]
Labsheet 05 src main scala Q4.scala
build.sbt Q1.scala Q2.scala Q3.scala Q4.scala Q5.scala Q6.scala
Current File

```scala
import scala.io.StdIn

object Q4 {

  def main(args : Array[String]) : Unit = {
    println("Enter n : \n")
    val n = StdIn.readInt()
    println("Even numbers and odd numbers from 1 to " +n)
    display(n)
  }

  def display(n:Int) : Unit = {
       if(n>0)
         {
          display(n-1)
          if(isEven(n))
            println( n+ " is even")
          else
            println( n+ " is odd")
         }
  }

  def isEven(number : Int) : Boolean ={
    if(number ==0 ) true
    else isOdd(number-1)
  }

  def isOdd(number : Int) : Boolean ={
    if(number == 0) false
    else isEven(number - 1)
  }
```



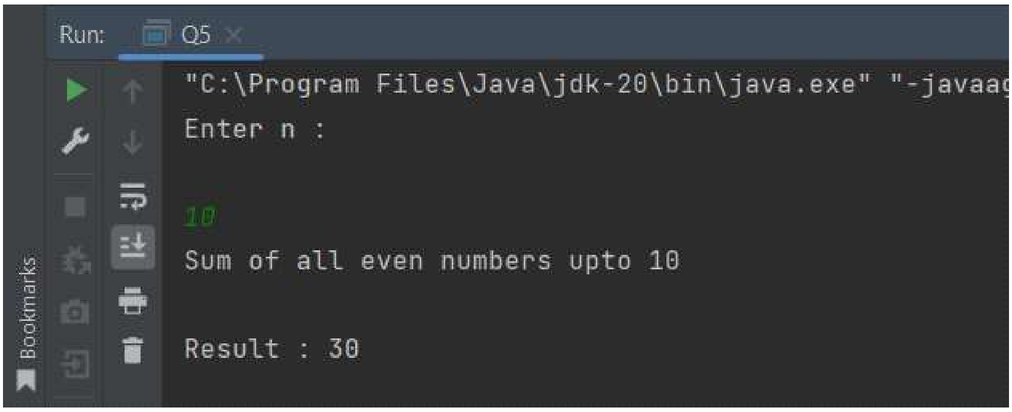
```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaa
Enter n :

10
Even numbers and odd numbers from 1 to 10
1 is odd
2 is even
3 is odd
4 is even
5 is odd
6 is even
7 is odd
```

Q5:



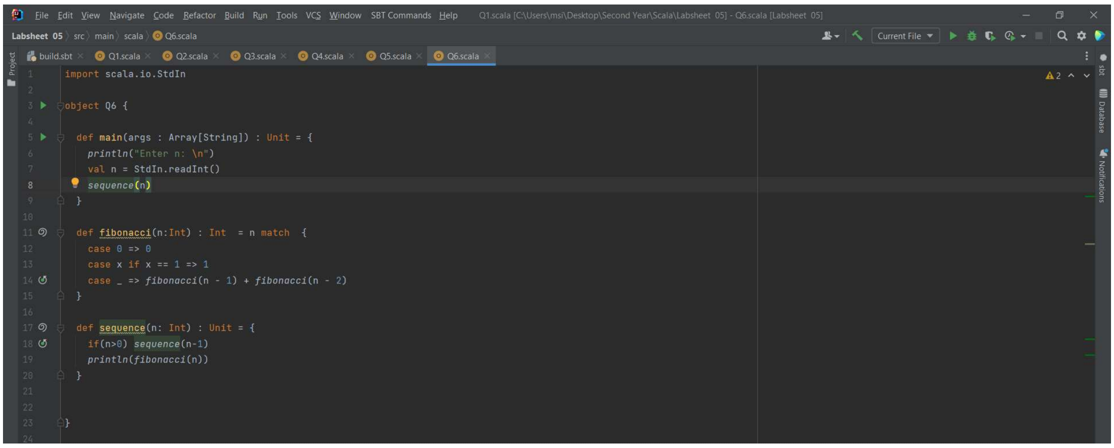
File Edit View Navigate Code Refactor Build Run Tools VCS Window SBT Commands Help
Q1.scala [C:\Users\msi\Desktop\Second Year\Scala\Labsheet 05] - Q5.scala [Labsheet 05]
Labsheet 05 src main scala Q5.scala
Current File
build.sbt Q1.scala Q2.scala Q3.scala Q4.scala Q5.scala Q6.scala

```scala


import scala.io.StdIn

object Q5 {

  def main(args: Array[String]): Unit = {
    println("Enter n :\n")
    val n = StdIn.readInt()
    println("Sum of all even numbers upto " + n + "\n")
    val result = addition(n)
    println("Result : " + result)

  }

  def addition(n: Int): Int = {
    if (n <= 0) {
      0
    }
    else if (n % 2 == 0) {
      n + addition(n - 2)
    }
    else {
      addition(n - 1)
    }

  }

}
```



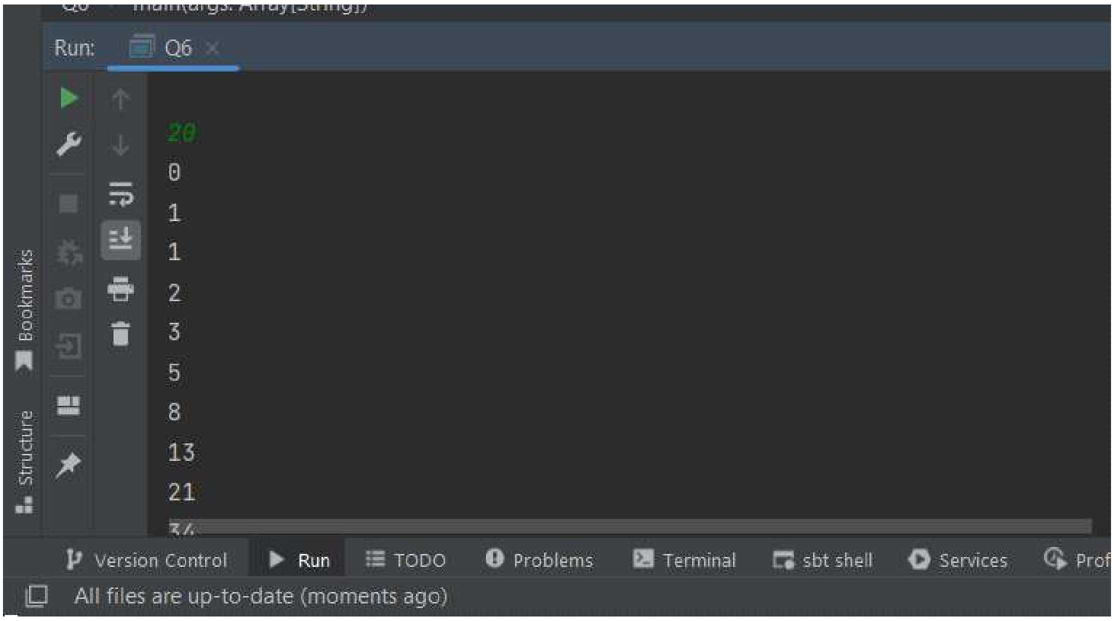
```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaag
Enter n :


10
Sum of all even numbers upto 10


Result : 30
```

q6:



File Edit View Navigate Code Refactor Build Run Tools VCS Window SBT Commands Help
Q1.scala [C:\Users\msi\Desktop\Second Year\Scala\Labsheet 05] - Q6.scala [Labsheet 05]
Labsheet 05 src main scala Q6.scala
Current File
build.sbt Q1.scala Q2.scala Q3.scala Q4.scala Q5.scala Q6.scala
2

```scala
import scala.io.StdIn

object Q6 {

  def main(args : Array[String]) : Unit = {
    println("Enter n: \n")
    val n = StdIn.readInt()
    sequence(n)
  }

  def fibonacci(n:Int) : Int  = n match  {
    case 0 => 0
    case x if x == 1 => 1
    case _ => fibonacci(n - 1) + fibonacci(n - 2)
  }

  def sequence(n: Int) : Unit = {
    if(n>0) sequence(n-1)
    println(fibonacci(n))
  }



}
```



```
20
0
1
1
2
3
5
8
13
21
34
```

All files are up-to-date (moments ago)