

NAME – TAPABRATA BANERJEE

USN- 22BTRAD030

SCALA PROGRAMMING

Q. The "MathUtils" object contains the factorial method. This method calculates the factorial of a given number using recursion. If the number is 0 or 1, it returns 1. Otherwise, it recursively calls itself with $n - 1$ and multiplies the result by n .

The "Main" object contains the main method where you can test the factorial method. In this example, it calculates the factorial of the number 4 and 10 and prints the result.



The screenshot shows a Scala IDE with a file named "HelloWorld.scala". The code defines a "MathUtils" object with a recursive "factorial" method and a "Main" object with a "main" method. The "main" method calculates the factorial of 4 and 10 and prints the results. The output of the program is displayed on the right side of the IDE.

```
1 object MathUtils {
2   def factorial(n: Int): BigInt = {
3     if (n == 0 || n == 1) {
4       1
5     } else {
6       n * factorial(n - 1)
7     }
8   }
9 }
10 object Main {
11   def main(args: Array[String]): Unit = {
12     val number1 = 4
13     val result1 = MathUtils.factorial(number1)
14     println(s"The factorial of $number1 is: $result1")
15     val number2 = 10
16     val result2 = MathUtils.factorial(number2)
17     println(s"The factorial of $number2 is: $result2")
18   }
19 }
```

STDIN
Input for the program (Optional)

Output:
The factorial of 4 is: 24
The factorial of 10 is: 3628800