

Q1

The screenshot shows the Scala IDE interface with a workspace named 'lab4/src/SingleNestedFunction.scala'. The Package Explorer on the left shows the project structure. The main editor displays the code for 'SingleNestedFunction.scala'. The code defines a main function that calls 'maxAndMin(5, 7)', which in turn calls 'maxValue()' and 'minValue()' to find the maximum and minimum values. The console output shows the results: 'Min and Max from 5, 7', 'Max is: 7', and 'Min is: 5'.

```
object SingleNestedFunction
{
  def main(args: Array[String])
  {
    println("Min and Max from 5, 7")
    maxAndMin(5, 7)
  }

  def maxAndMin(a: Int, b: Int) = {
    def maxValue() = {
      if(a > b)
      {
        println("Max is: " + a)
      }
      else
      {
        println("Max is: " + b)
      }
    }

    def minValue() = {
      if(a < b)
      {
        println("Min is: " + a)
      }
      else
      {
        println("Min is: " + b)
      }
    }
  }
}
```

Console Output:

```
<terminated> SingleNestedFunction$ [Scala Application] C:\Program Files\Java\jre1.8.0_301\bin\javaw.exe (08-Aug-2021, 9:57:36 PM)
Min and Max from 5, 7
Max is: 7
Min is: 5
```

Q2

The screenshot shows the Scala IDE interface with a workspace named 'lab4/src/multiplenested.scala'. The Package Explorer on the left shows the project structure. The main editor displays the code for 'multiplenested.scala'. The code defines a main function that calls 'findmax()' and 'findmin()' to find the maximum and minimum values. The console output shows the results: 'find max and min', '20 is max', and '15 is min'.

```
def main(args: Array[String])
{
  println(" find max and min")
  maxmin(20,15)
}

def maxmin(a: Int, b: Int)={
  def findmax()={
    if(a>b)
    {
      println(a+ " is max")
    }
    else
    {
      println(b+ " is max")
    }
  }

  def findmin()={
    if(a>b)
    {
      println(b+ " is min")
    }
    else
    {
      println(a+ " is min")
    }
  }
  findmax();
  findmin();
}
```

Console Output:

```
<terminated> multiplenested$ [Scala Application] C:\Program Files\Java\jre1.8.0_301\bin\javaw.exe (08-Aug-2021, 10:23:49 PM)
find max and min
20 is max
15 is min
```

Q3

The screenshot shows the Scala IDE interface. The main editor displays the code for the `oddeven` object. The code defines a `main` function that takes an array of strings and prints a message based on the value 37. It also defines a function `odddoreven` that takes an integer and prints whether it is odd or even.

```
object oddeven {  
  def main(args: Array[String]) {  
    println("find if 37 is even or odd")  
    oddoreven(37);  
  }  
  
  def oddoreven(a: Int) = {  
    if(a%2==1)  
    {  
      println(a+ " is odd")  
    }  
    else  
    {  
      println(a+ " is even")  
    }  
  }  
}
```

The console output shows the execution of the program:

```
<terminated> oddeven$ [Scala Application] C:\Program Files\Java\jre1.8.0_301\bin\javaw.exe (08-Aug-2021, 10:27:19 PM)  
find if 37 is even or odd  
37 is odd
```

Q4

The screenshot shows the Scala IDE interface. The main editor displays the code for the `oddevenwithmultiplenested` object. The code defines a `main` function that takes an array of strings and prints a message based on the value 29. It also defines a function `odddoreven2` that takes an integer and prints whether it is odd or even, using nested function definitions for `oddcheck` and `evencheck`.

```
object oddevenwithmultiplenested {  
  def main(args: Array[String]) {  
    println("find if 29 is even or odd")  
    oddoreven2(29);  
  }  
  
  def oddoreven2(a: Int) = {  
    def oddcheck()={  
      if(a%2==1)  
      {  
        println(a+ " is odd")  
      }  
    }  
    def evencheck()={  
      if(a%2==0)  
      {  
        println(a+ " is even")  
      }  
    }  
    oddcheck();  
    evencheck();  
  }  
}
```

The console output shows the execution of the program:

```
<terminated> oddevenwithmultiplenested$ [Scala Application] C:\Program Files\Java\jre1.8.0_301\bin\javaw.exe (08-Aug-2021, 10:38:09 PM)  
find if 29 is even or odd  
29 is odd
```