

## LAB-16

AYUSHI TAWARI-22BTRAD008

The screenshot shows the Scala OneCompiler IDE with a file named `HelloWorld.scala`. The code defines a `Person` class with attributes `name`, `age`, and `country`, and a `Student` class that extends `Person` with an additional attribute `grade`. The `main` method in `StudentApp` creates a `Student` object named `student` with the values `"Saturnino Nihad"`, `18`, `"USA"`, and `"A"`. It then prints the original student's details and updates the name to `"AYUSHI TAWARI"` and the age to `20`.

```
1 class Person(var name: String, var age: Int, var country: String) {
2   def getName: String = name
3   def setName(newName: String): Unit = {
4     name = newName
5   }
6   def getAge: Int = age
7   def setAge(newAge: Int): Unit = {
8     age = newAge
9   }
10  def getCountry: String = country
11  def setCountry(newCountry: String): Unit = {
12    country = newCountry
13  }
14 }
15 class Student(name: String, age: Int, country: String, var grade: String)
16 extends Person(name, age, country) {
17   def getGrade: String = grade
18   def setGrade(newGrade: String): Unit = {
19     grade = newGrade
20   }
21 }
22 object StudentApp {
23   def main(args: Array[String]): Unit = {
24     val student = new Student("Saturnino Nihad", 18, "USA", "A")
25     println("Original Student:")
26     println(s"Name: ${student.getName}")
27     println(s"Age: ${student.getAge}")
28     println(s"Country: ${student.getCountry}")
29     println(s"Grade: ${student.getGrade}")
30     student.setName("AYUSHI TAWARI")
31     student.setAge(20)
```

Output:

```
Original Student:
Name: Saturnino Nihad
Age: 18
Country: USA
Grade: A

Updated Student:
Name: AYUSHI TAWARI
Age: 20
Country: INDIA
Grade: A
```

The screenshot shows the same Scala OneCompiler IDE, but the code has been updated. The `Student` class now includes a `state` attribute. The `main` method creates a `Student` object with the values `"Saturnino Nihad"`, `18`, `"USA"`, `"A"`, and `"Kerala"`. It then prints the original student's details and updates the name to `"AYUSHI TAWARI"`, the age to `20`, and the state to `"Rajasthan"`.

```
1 class Person(var name: String, var age: Int, var country: String, var state: String) {
2   def getName: String = name
3   def setName(newName: String): Unit = {
4     name = newName
5   }
6   def getAge: Int = age
7   def setAge(newAge: Int): Unit = {
8     age = newAge
9   }
10  def getCountry: String = country
11  def setCountry(newCountry: String): Unit = {
12    country = newCountry
13  }
14  def getState: String = state
15  def setState(newState: String): Unit = {
16    state = newState
17  }
18 }
19 class Student(name: String, age: Int, country: String, var grade: String, state: String)
20 extends Person(name, age, country, state) {
21   def getGrade: String = grade
22   def setGrade(newGrade: String): Unit = {
23     grade = newGrade
24   }
25 }
26 object StudentApp {
27   def main(args: Array[String]): Unit = {
28     val student = new Student("Saturnino Nihad", 18, "USA", "A", "Kerala")
29     println("Original Student:")
30     println(s"Name: ${student.getName}")
31     println(s"Age: ${student.getAge}")
32     println(s"Country: ${student.getCountry}")
33     println(s"Grade: ${student.getGrade}")
34     println(s"State: ${student.getState}")
35     student.setName("AYUSHI TAWARI")
36     student.setAge(20)
37     student.setState("Rajasthan")
38 }
```

Output:

```
Original Student:
Name: Saturnino Nihad
Age: 18
Country: USA
Grade: A
State: Kerala

Updated Student:
Name: AYUSHI TAWARI
Age: 20
Country: INDIA
Grade: A
State: Rajasthan
```

## Code:

```
class Person(var name: String, var age: Int, var country: String,var state: String) {  
    def getName: String = name  
    def setName(newName: String): Unit = {  
        name = newName }  
    def getAge: Int = age  
    def setAge(newAge: Int): Unit = {  
        age = newAge }  
    def getCountry: String = country  
    def setCountry(newCountry: String): Unit = {  
        country = newCountry }  
    def getState: String = state  
    def setState(newState: String): Unit = {  
        state= newState }  
    }  
  
    class Student(name: String, age: Int, country: String, var grade: String,state: String)  
    extends Person(name, age, country,state) {  
        def getGrade: String = grade  
        def setGrade(newGrade: String): Unit = {  
            grade = newGrade  
        }  
    }  
  
    object StudentApp {  
        def main(args: Array[String]): Unit = {  
            val student = new Student("Saturnino Nihad", 18, "USA", "A","Kerala")  
            println("Original Student:")  
            println(s"Name: ${student.getName}")  
            println(s"Age: ${student.getAge}")  
            println(s"Country: ${student.getCountry}")  
            println(s"Grade: ${student.getGrade}")  
        }  
    }  
}
```

```
println(s"State: ${student.getState}")
student.setName("AYUSHI TAWARI")
student.setAge(20)
student.setCountry("INDIA")
student.setGrade("A")
student.setState("Rajasthan")
println("\nUpdated Student:")
println(s"Name: ${student.getName}")
println(s"Age: ${student.getAge}")
println(s"Country: ${student.getCountry}")
println(s"Grade: ${student.getGrade}")
println(s"State: ${student.getState}")
}
}
```

#### OUTPUT

```
Original Student:
Name: Saturnino Nihad
Age: 18
Country: USA
Grade: A
State: Kerala
```

```
Updated Student:
Name: AYUSHI TAWARI
Age: 20
Country: INDIA
Grade: A
State: Rajasthan
```