

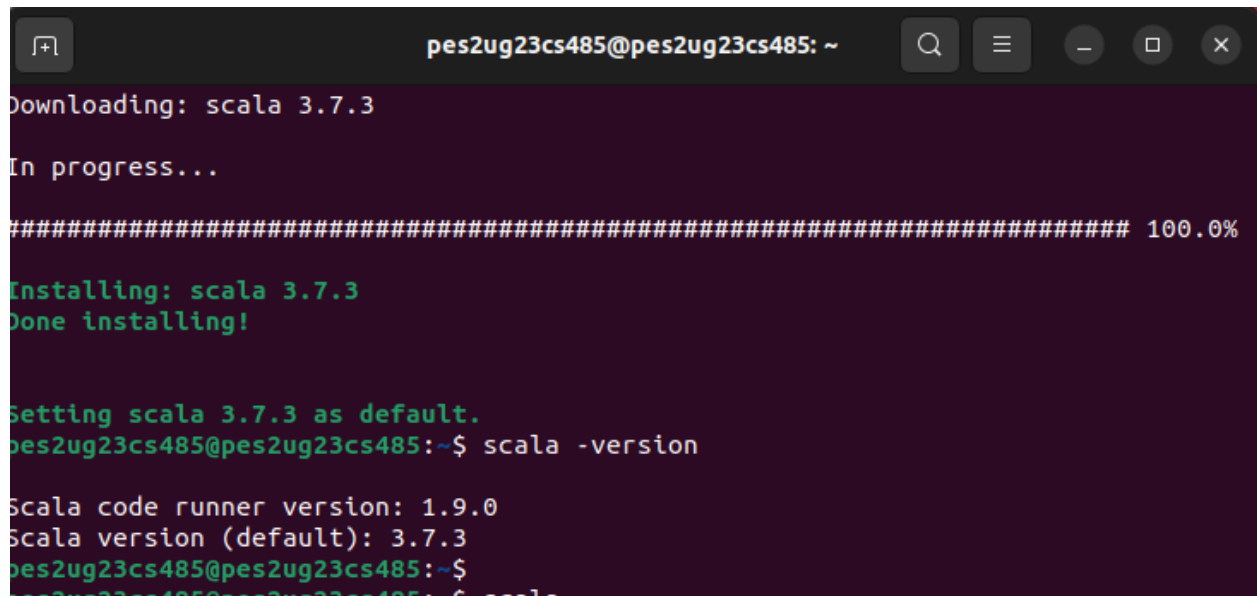
BD handson 3 - Scala

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Class: 5H

1) Scala version

A terminal window with a dark purple background. The title bar shows the user 'pes2ug23cs485' and the directory '~'. The terminal output shows the installation of Scala 3.7.3, progress bars, and the command 'scala -version' being executed. The output of the command shows the Scala code runner version as 1.9.0 and the Scala version as 3.7.3.

```
pes2ug23cs485@pes2ug23cs485: ~  
Downloading: scala 3.7.3  
In progress...  
##### 100.0%  
Installing: scala 3.7.3  
Done installing!  
Setting scala 3.7.3 as default.  
pes2ug23cs485@pes2ug23cs485:~$ scala -version  
Scala code runner version: 1.9.0  
Scala version (default): 3.7.3  
pes2ug23cs485@pes2ug23cs485:~$
```

2) String

A terminal window with a dark purple background. The title bar shows the user 'pes2ug23cs485' and the directory '~'. The terminal output shows the installation of Scala 3.7.3, progress bars, and the command 'scala -version' being executed. The output of the command shows the Scala code runner version as 1.9.0 and the Scala version as 3.7.3. Below this, the command 'scala' is executed, which starts the Scala REPL. The user then enters 'System.getProperty("user.name")' and the output is 'pes2ug23cs485'.

```
pes2ug23cs485@pes2ug23cs485: ~  
Installing: scala 3.7.3  
Done installing!  
Setting scala 3.7.3 as default.  
pes2ug23cs485@pes2ug23cs485:~$ scala -version  
Scala code runner version: 1.9.0  
Scala version (default): 3.7.3  
pes2ug23cs485@pes2ug23cs485:~$ scala  
Welcome to Scala 3.7.3 (1.8.0_462, Java OpenJDK 64-Bit Server VM).  
Type in expressions for evaluation. Or try :help.  
  
scala> System.getProperty("user.name")  
val res0: String = pes2ug23cs485
```

3) Constants

```
pes2ug23cs485@pes2ug23cs485: ~  
Type in expressions for evaluation. Or try :help.  
  
scala> System.getProperty("user.name")  
val res0: String = pes2ug23cs485  
  
scala> s  
stty: 'standard input': unable to perform all requested operations  
pes2ug23cs485@pes2ug23cs485:~$ scala  
Welcome to Scala 3.7.3 (1.8.0_462, Java OpenJDK 64-Bit Server VM).  
Type in expressions for evaluation. Or try :help.  
  
scala> val res=10  
val res: Intval res: Int = 10  
  
scala> val res=10  
val res: Int = 10  
  
scala> def res1=res  
def res1: Int  
  
scala> res1  
val res2: Int = 10  
  
scala>
```

4) Constants can't be reassigned

```
pes2ug23cs485@pes2ug23cs485: ~  
type in expressions for evaluation. Or try :help.  
  
scala> val res=10  
val res: Int = 10  
  
scala> val res=10  
val res: Int = 10  
  
scala> def res1=res  
def res1: Int  
  
scala> res1  
val res2: Int = 10  
  
scala> res=200  
- [E052] Type Error: -----  
| res=200  
| ^^^^^^^  
| Reassignment to val res  
|  
| longer explanation available when compiling with '-explain'  
error found  
  
scala> 
```

```
def res1: Int

scala> res1
val res2: Int = 10

scala> res=200
-- [E052] Type Error: -----
1 |res=200
  |^^^^^^
  |Reassignment to val res
  |
  | longer explanation available when compiling with `-explain`
1 error found

scala> res1=190
-- [E052] Type Error: -----
1 |res1=190
  |^^^^^^
  |Reassignment to val res1
  |
  | longer explanation available when compiling with `-explain`
1 error found

scala>
```

5)

6) Dynamic update

```
pes2ug23cs485@pes2ug23cs485: ~  
1 error found  
  
scala> res1=190  
-- [E052] Type Error: -----  
1 | res1=190  
  | ^^^^^^^  
  | Reassignment to val res1  
  |  
  | longer explanation available when compiling with `-explain`  
1 error found  
  
scala> var y=23  
var y: Int = 23  
  
scala> def x=y  
def x: Int  
  
scala> y=267  
y: Int = 267  
  
scala> x  
val res3: Int = 267  
  
scala> 
```

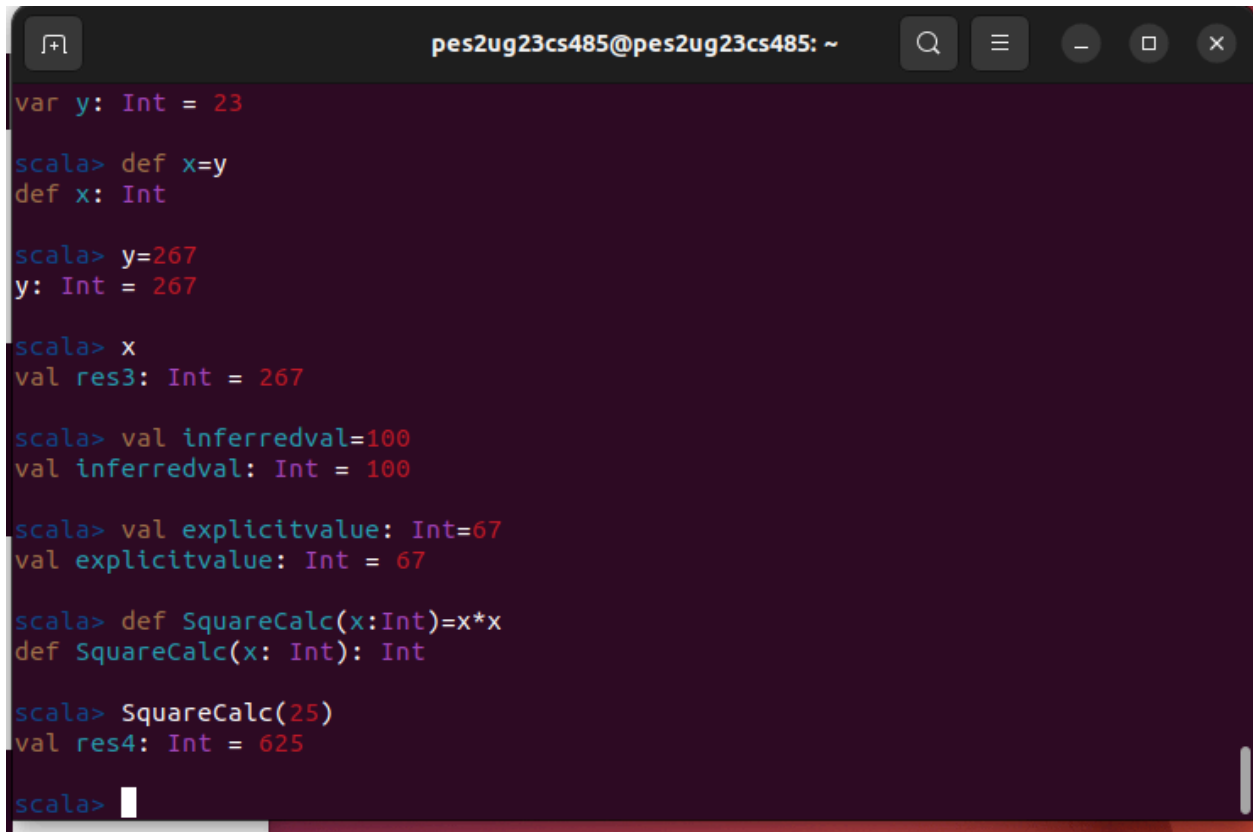
7) Inferred type

```
pes2ug23cs485@pes2ug23cs485: ~  
-- [E052] Type Error: -----  
1 | res1=190  
  | ^^^^^^^  
  | Reassignment to val res1  
  |  
  | longer explanation available when compiling with '-explain'  
1 error found  
  
scala> var y=23  
var y: Int = 23  
  
scala> def x=y  
def x: Int  
  
scala> y=267  
y: Int = 267  
  
scala> x  
val res3: Int = 267  
  
scala> val inferredval=100  
val inferredval: Int = 100  
  
scala> 
```

8) Explicit type

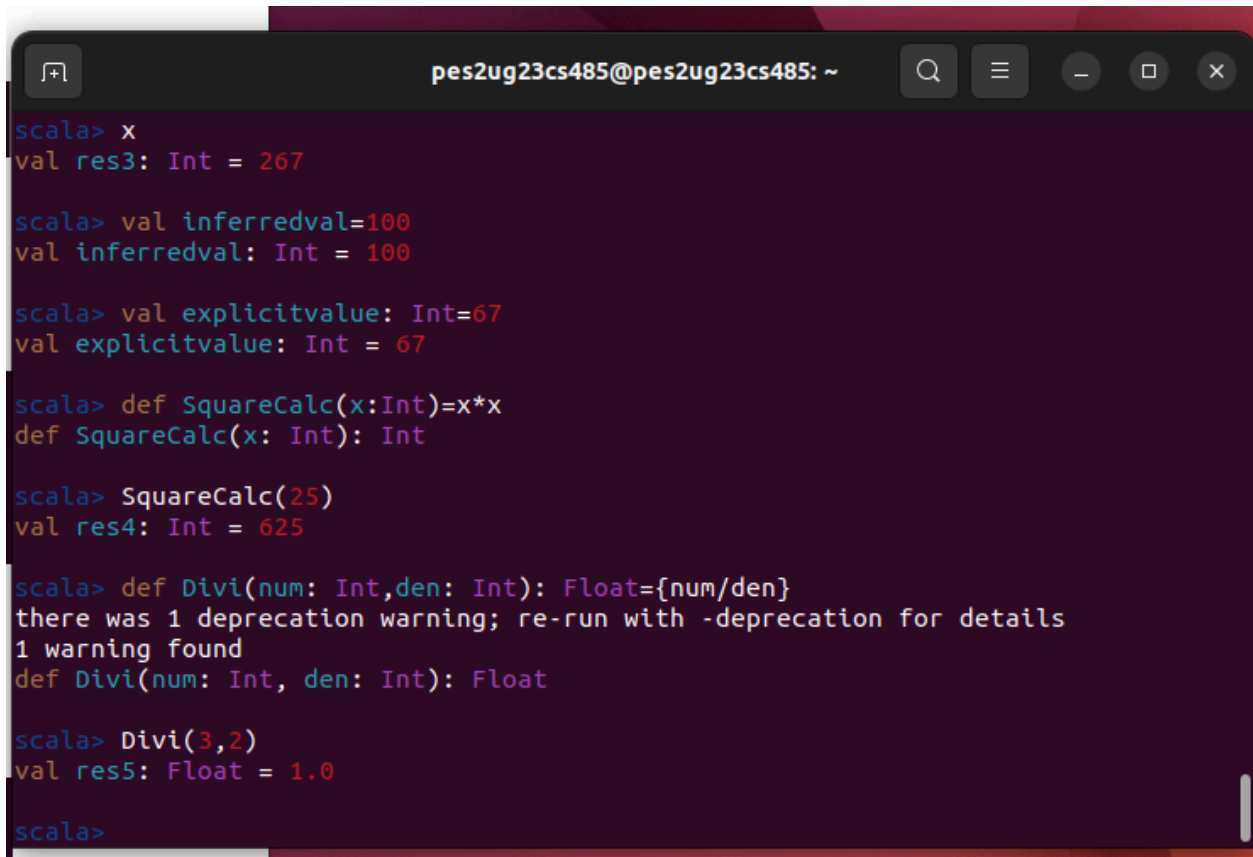
```
pes2ug23cs485@pes2ug23cs485: ~  
|Reassignment to val res1  
| longer explanation available when compiling with '-explain'  
1 error found  
  
scala> var y=23  
var y: Int = 23  
  
scala> def x=y  
def x: Int  
  
scala> y=267  
y: Int = 267  
  
scala> x  
val res3: Int = 267  
  
scala> val inferredval=100  
val inferredval: Int = 100  
  
scala> val explicitvalue: Int=67  
val explicitvalue: Int = 67  
  
scala>
```

9) Implicit return type



```
pes2ug23cs485@pes2ug23cs485: ~  
var y: Int = 23  
  
scala> def x=y  
def x: Int  
  
scala> y=267  
y: Int = 267  
  
scala> x  
val res3: Int = 267  
  
scala> val inferredval=100  
val inferredval: Int = 100  
  
scala> val explicitvalue: Int=67  
val explicitvalue: Int = 67  
  
scala> def SquareCalc(x:Int)=x*x  
def SquareCalc(x: Int): Int  
  
scala> SquareCalc(25)  
val res4: Int = 625  
  
scala> 
```

10) Explicit return type



```
scala> x
val res3: Int = 267

scala> val inferredval=100
val inferredval: Int = 100

scala> val explicitvalue: Int=67
val explicitvalue: Int = 67

scala> def SquareCalc(x:Int)=x*x
def SquareCalc(x: Int): Int

scala> SquareCalc(25)
val res4: Int = 625

scala> def Divi(num: Int,den: Int): Float={num/den}
there was 1 deprecation warning; re-run with -deprecation for details
1 warning found
def Divi(num: Int, den: Int): Float

scala> Divi(3,2)
val res5: Float = 1.0

scala>
```

11) Type

```
pes2ug23cs485@pes2ug23cs485: ~  
val res9: Boolean = true  
scala> is_eq("abc","abc")  
val res10: Boolean = true  
scala> is_eq("abc","ABC")  
val res11: Boolean = false  
scala> def typediv(num:Int, den:Int): float={num.toFloat/den}  
-- [E006] Not Found Error: -----  
1 |def typediv(num:Int, den:Int): float={num.toFloat/den}  
  |                                ^^^^^  
  |    Not found: type float - did you mean Float? or perhaps Float.type?  
  |    longer explanation available when compiling with '-explain'  
1 error found  
scala> def typediv(num:Int, den:Int): Float={num.toFloat/den}  
def typediv(num: Int, den: Int): Float  
scala> typediv(5,2)  
val res12: Float = 2.5  
scala> 
```

12) Generic function

```
pes2ug23cs485@pes2ug23cs485: ~  
val res5: Float = 1.0  
  
scala> def is_eq[T] (a:T, b:T): Boolean={a==b}  
def is_eq[T](a: T, b: T): Boolean  
  
scala> is_eq(34,43)  
val res6: Boolean = false  
  
scala> is_eq(23,23.34)  
val res7: Boolean = false  
  
scala> is_eq(12,12.0)  
val res8: Boolean = true  
  
scala> is_eq(12,12)  
val res9: Boolean = true  
  
scala> is_eq("abc","abc")  
val res10: Boolean = true  
  
scala> is_eq("abc","ABC")  
val res11: Boolean = false  
  
scala> 
```

13) Default argument

```
pes2ug23cs485@pes2ug23cs485: ~  
-- [E006] Not Found Error: -----  
1 |def typediv(num:Int, den:Int): float={num.toFloat/den}  
    |           ^^^^^  
    |           Not found: type float - did you mean Float? or perhaps Float.type?  
    |           longer explanation available when compiling with '-explain'  
1 error found  
  
scala> def typediv(num:Int, den:Int): Float={num.toFloat/den}  
def typediv(num: Int, den: Int): Float  
  
scala> typediv(5,2)  
val res12: Float = 2.5  
  
scala> def add(x:Int, y: Int, z: Int =0): Int = x + y + z  
def add(x: Int, y: Int, z: Int): Int  
  
scala> add(2,3)  
val res13: Int = 5  
  
scala> add(2,3,4)  
val res14: Int = 9  
  
scala> 
```

14) Overriding

```
pes2ug23cs485@pes2ug23cs485: ~  
1 error found  
  
scala> def typediv(num:Int, den:Int): Float={num.toFloat/den}  
def typediv(num: Int, den: Int): Float  
  
scala> typediv(5,2)  
val res12: Float = 2.5  
  
scala> def add(x:Int, y: Int, z: Int =0): Int = x + y + z  
def add(x: Int, y: Int, z: Int): Int  
  
scala> add(2,3)  
val res13: Int = 5  
  
scala> add(2,3,4)  
val res14: Int = 9  
  
scala> def add1(x:Int, y:Int): Int=x+y  
def add1(x: Int, y: Int): Int  
  
scala> def add1(x:Int, y:Int, z:Int): Int=x+y+z  
def add1(x: Int, y: Int, z: Int): Int  
  
scala> 
```

15)

```
pes2ug23cs485@pes2ug23cs485: ~  
scala> add(2,3,4)  
val res14: Int = 9  
  
scala> def add1(x:Int, y:Int): Int=x+y  
def add1(x: Int, y: Int): Int  
  
scala> def add1(x:Int, y:Int, z:Int): Int=x+y+z  
def add1(x: Int, y: Int, z: Int): Int  
  
scala> add(2,3)  
val res15: Int = 5  
  
scala> add1(2,3)  
-- [E171] Type Error: -----  
1 |add1(2,3)  
|^^^^^^^^^^  
|missing argument for parameter z of method add1: (x: Int, y: Int, z: Int): In  
t  
1 error found  
  
scala> add1(2,3,4)  
val res16: Int = 9  
  
scala> 
```

```
pes2ug23cs485@pes2ug23cs485: ~  
scala> add1(2,3,4)  
val res16: Int = 9  
  
scala> def hello(): String = "Hello Guest"  
def hello(): String  
  
scala> def hello(name: String): String= s"Hello $name"  
def hello(name: String): String  
  
scala> def hello(age: Int): String=s"You are $age years old"  
def hello(age: Int): String  
  
scala> hello()  
-- [E171] Type Error: -----  
1 |hello()  
  |^^^^^^  
  |missing argument for parameter age of method hello: (age: Int): String  
1 error found  
  
scala> hello(45)  
val res17: String = You are 45 years old  
  
scala>
```

16)