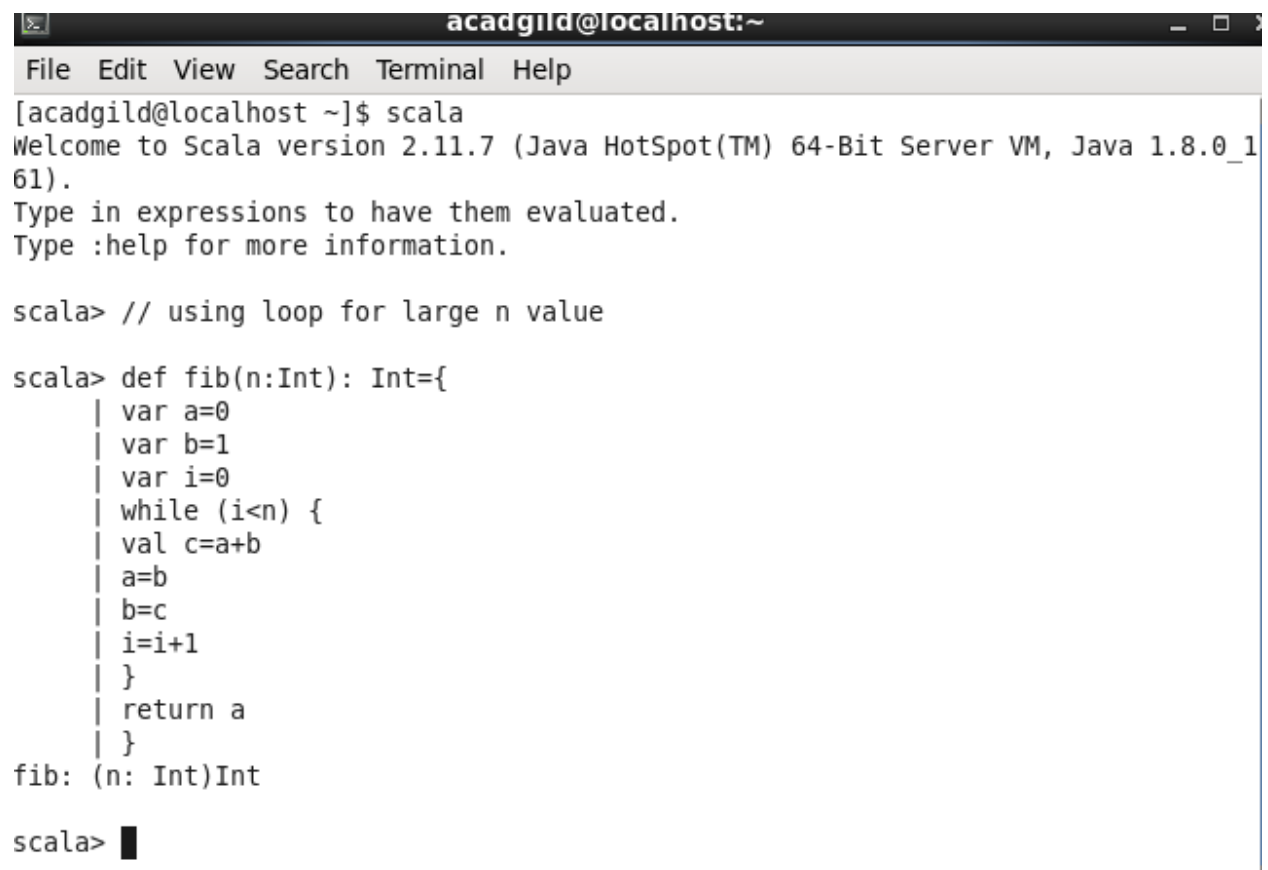# Data Science Masters:

Scala-2 Assignment

Task 1

A Fibonacci series (starting from 1) written in order without any spaces in between, thus

producing a sequence of digits.

Write a Scala application to find the Nth digit in the sequence.

○ Write the function using standard for loop

```
acadgild@localhost:~                                          _ □ ╳
File  Edit  View  Search  Terminal  Help
[acadgild@localhost ~]$ scala
Welcome to Scala version 2.11.7 (Java HotSpot(TM) 64-Bit Server VM, Java 1.8.0_1
61).
Type in expressions to have them evaluated.
Type :help for more information.

scala> // using loop for large n value

scala> def fib(n:Int): Int={
     | var a=0
     | var b=1
     | var i=0
     | while (i<n) {
     | val c=a+b
     | a=b
     | b=c
     | i=i+1
     | }
     | return a
     | }
fib: (n: Int)Int

scala> ▌
```

○ Write the function using recursion

```
scala> def fibo(n:Int) : Int={
     | var arr= new Array [Int] (n+2)
     | /// declares the array of fibonacci numbers
     | var i=0
     | arr(0)=0
     | arr(1)=1
     | //// loop
     | for (i<- 2 to n){
     | arr(i)=arr(i-1) + arr(i-2)
     | }
     | return arr(n)
     | }
fibo: (n: Int)Int

scala>
```

Task 2

Create a calculator to work with rational numbers.

Requirements:

○ It should provide capability to add, subtract, divide and multiply rational

numbers

○ Create a method to compute GCD (this will come in handy during operations on

rational)

Add option to work with whole numbers which are also rational numbers i.e. (n/1)

- achieve the above using auxiliary constructors

- enable method overloading to enable each function to work with numbers and rational.

Task 3

1.Write a simple program to show inheritance in scala.

2.Write a simple program to show multiple inheritance in scala.

3.Write a partial function to add three numbers in which one number is constant and two

numbers can be passed as inputs and define another method which can take the partial

function as input and squares the result.

4.Write a program to print the prices of 4 courses of Acadgild: Android-12999,Big Data

Development-17999,Big Data Development-17999,Spark-19999 using match and add a

default condition if the user enters any other course