Practical 05 – 22001212

01)

22001212_q1.scala

```scala
object InventoryManagement{

    def getProductList(ProductNames:List[String]):List[String]={
        var item="";
        var products=ProductNames;
        if(ProductNames.length==0){
            println("Product list is empty!");
            println("Enter Products, enter 'done' when you are finished => ");
        }
        else{
            println("Enter Products, enter 'done' when you are finished => ");
        }
        while(item.toLowerCase()!="done"){
            item=scala.io.StdIn.readLine();
            if(item.toLowerCase()!="done")
                products=products:+item;
        }
        products;
    }

    def printProductList(ProductNames:List[String]):Unit={
        println("Product Name"+" "*6+"Position");
        for(i<- 0 to ProductNames.length-1 ){
            println(f"${ProductNames(i)}%-20s${i + 1}");
        }
    }

    def getTotalProducts(ProductNames:List[String]):Int={
        ProductNames.length;
    }

    def main(args:Array[String]):Unit={
        var productList = List[String]();
        var updatedProductList = getProductList(productList);
        printProductList(updatedProductList);
        println(s"Total number of products in the Inventory: ${getTotalProducts(updatedProductList)}");
        var updatedProductList2 = getProductList(updatedProductList);
        printProductList(updatedProductList2);
        println(s"Total number of products in the Inventory: ${getTotalProducts(updatedProductList2)}");

    }
}
```

```
PS C:\Users\User\Desktop\UCSC\2nd Year Sem-01\SCS 2204 - Fu
Product list is empty!
Enter Products, enter 'done' when you are finished =>
Dhal
Rice
Sugar
Milk Powder
done
Product Name      Position
Dhal                1
Rice                2
Sugar               3
Milk Powder         4
Total number of products in the Inventory: 4
```

```
Enter Products, enter 'done' when you are finished =>
Biscuits
Soap
DONE
Product Name      Position
Dhal                1
Rice                2
Sugar               3
Milk Powder         4
Biscuits            5
Soap                6
Total number of products in the Inventory: 6
```

02)

22001212_q2.scala

22001212_q2.scala > {} LibraryManagement

```scala
object LibraryManagement{
    case class Book(title:String,author:String,isbn:String);

    var bookCollection:Set[Book]=Set(
        Book("Madolduwa","Sir Martin Wickramasinghe","0001"),
        Book("Ambayaluwo","Mr.T.B.Illangaratna","0002"),
        Book("Famous Five","Enid Blyton","0003")
    )

    def addBook(bCollection:Set[Book],book:Book):Set[Book]={
        if(bCollection.exists(_.title==book.title)){
            println("Book is already in the coolection");
            bCollection;
        }
        else{
            val newCollection=bCollection+book;
            println(f"${book.title} is added to the collection");
            newCollection;
        }
    }

    def removeBook(bCollection:Set[Book]):Set[Book]={
        print("Enter the ISBN of the book to remove = ");
        val i=scala.io.StdIn.readLine();
        val bookToRemove = bCollection.find(_.isbn == i);
        bookToRemove match{
            case Some(book) =>
                val newCollection = bCollection - book;
                println(s"${book.title} is removed from the collection");
                newCollection;
```

```
            case None =>
                println("Book is not found to remove.");
                bCollection;
        }
    }

    def checkBook(bCollection:Set[Book]):Unit={
        print("Enter the ISBN of the book to check = ");
        val i=scala.io.StdIn.readLine();
        if(bCollection.exists(_.isbn==i)){
            println(f"${i} Book is found");
        }
        else{
            println("Book is not found");
        }
    }

    def displayCurrentLibrary(bCollection:Set[Book]):Unit={
        println("\nISBN"+" "*18+"Title"+" "*18+"Author");
        bCollection.foreach{book=>
            println(f"${book.isbn}%-20s ${book.title}%-20s ${book.author}%-20s");
        }
    }

    def searchBook(bCollection:Set[Book]):Unit={
        print("Enter the title of the book to search = ");
        val t=scala.io.StdIn.readLine();
        val sbook=bCollection.find(_.title==t);
        sbook match {
            case Some(book) =>
                println(f"Title: ${book.title}");
                println(f"Author: ${book.author}");
            case None =>
                println("Book is not found")
        }
    }

    def displayAuthor(bCollection:Set[Book]):Unit={
        print("Enter the author of the book to see his books = ");
        val a=scala.io.StdIn.readLine();
        val abook=bCollection.filter(_.author==a);
        abook.foreach{book=>
            println(f"${book.title}");
        }
    }

    def main(args:Array[String]):Unit={
        var newBook=Book("Secret Seven","Enid Blyton","0004");
        bookCollection=addBook(bookCollection,newBook);
        displayCurrentLibrary(bookCollection);
        bookCollection=removeBook(bookCollection);
        displayCurrentLibrary(bookCollection);
        checkBook(bookCollection);
        searchBook(bookCollection);
        displayAuthor(bookCollection);
    }
}
```

```
PS C:\Users\User\Desktop\UCSC\2nd Year Sem-01\SCS 2204 - Functional Programming\P
Secret Seven is added to the collection

ISBN                 Title                Author
0001                Madolduwa           Sir Martin Wickramasinghe
0002                Ambayaluwo          Mr.T.B.Illangaratna
0003                Famous Five         Enid Blyton
0004                Secret Seven        Enid Blyton
Enter the ISBN of the book to remove = 0002
Ambayaluwo is removed from the collection

ISBN                 Title                Author
0001                Madolduwa           Sir Martin Wickramasinghe
0003                Famous Five         Enid Blyton
0004                Secret Seven        Enid Blyton
Enter the ISBN of the book to check = 0003
0003 Book is found
Enter the title of the book to search = Famous Five
Title: Famous Five
Author: Enid Blyton
Enter the author of the book to see his books = Enid Blyton
Famous Five
Secret Seven
PS C:\Users\User\Desktop\UCSC\2nd Year Sem-01\SCS 2204 - Functional Programming\P
```

03)

22001212_q3.scala > {} Fibonacci

```scala
object Fibonacci{
    def fibonacci(num:Int):Int=num match{
        case 0=>0;
        case 1=>1;
        case x=>fibonacci(x-1)+fibonacci(x-2);
    }

    def fibonacciSequence(num:Int):Unit={
        for(i<-0 to num-1){
            var result=fibonacci(i);
            print(result+", ");
        }
    }

    def main(args:Array[String]):Unit={
        print("Enter a number to get Fibonacci numbers = ");
        var num=scala.io.StdIn.readInt();
        println(f"first ${num} Fibonacci numbers for number ${num} = ");
        fibonacciSequence(num);
    }
}
```

```
PS C:\Users\User\Desktop\UCSC\2nd Year Sem-01\SCS 2204 - Functional
there was 1 deprecation warning; re-run with -deprecation for detail
1 warning found
Enter a number to get Fibonacci numbers = 10
first 10 Fibonacci numbers for number 10 =
0, 1, 1, 2, 3, 5, 8, 13, 21, 34,
PS C:\Users\User\Desktop\UCSC\2nd Year Sem-01\SCS 2204 - Functional
```