20/03/2020

Scala in Practice

lab 03

Acceptance criteria:

Create Scala program with:

- **object** Utils implementing methods:

  def isSorted(as: List[Int], ordering: (Int, Int) => Boolean) = ???
  //checks if as is sorted according to ordering

  def isAscSorted(as: List[Int]) = ??? *//checks if as is sorted in ascending order*

  def isDescSorted(as: List[Int]) = ??? *//checks if as is sorted in descending order*

  def foldLeft[A, B](l: List[A], z: B)(f: (B, A) => B): B = ??? *//applies binary operator to a start value and all elements of l, going left to right. Dont use build-in List.foldLeft*[1]

  def sum(l: List[Int]) = ??? *//sum elements of l with usage of foldLeft function*

  def length[A](l: List[A]) = ??? *//length of l with usage of foldLeft function*

  def compose[A, B, C](. . ., . . .) = ??? *//compose two unary functions:compose(f,g)(x) = f(g(x)). Dont use Funtion1.compose*[2]

  def repeated[A, B](. . ., n: Int) = ??? *//takes unary function f with integer n & returns the n-th repeated application of the function. For example: repeated(f, 3) = f(f(f(3)))*

  def curry[A, B, C](. . .) = ??? *//converts a binary function f of two arguments into a function of one argument that partially applies f. For example, when def add(a: Int, b: Int) = a + b, than curry(add)(1)(1) == add(1, 1)*

  def uncurry[A, B, C](. . .) = ??? *//reverse of curry function. For example, uncurry(f)(1, 1)(1) == f(1)(1)*

1 https://www.scala-lang.org/api/current/scala/collection/immutable/List.html
2 https://www.scala-lang.org/api/current/scala/Function1.html

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- Create function to *standardize* handling of unsafe parts of code - the ones which could throw exception.

  ```
  def unSafe[T](ex: Exception)(. . .) = ??? //catch any exception, log the error & throw the ex exception instead
  ```

  Now, in the code we could have:

  ```
  unSafe(MyException("Could not run command")) {
    //block of code which could throw any exception
  }

  . . .
  unSafe(MyDifferentException("Error while building map")) {
    //block of code which could throw any exception
  }
  ```

- Create *application entry-point* object with some example tests for the above implementation

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