3)

To append an item to a list in Scala one has to follow the syntax of

List(1, 2, 3) :+ 4

val l1 = List("Dawson") :+ "Dog"

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or you have to create a new list entirely as if this was a functional programming language

val l1 = List("Dawson")

val updatedL1 = l1 :+ "Dog"

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4)

object HelloWorld {

def main(args: Array[String]) {

countChange (100, List(1, 5, 10, 25, 50))

}

def countChange(amount: Int, coins:List[Int]) =

{

val ways = Array.fill(amount + 1)(0)

ways(0) = 1

coins.foreach (coin =>

for (j<-coin to amount)

ways(j) = ways(j) + ways(j - coin)

)

ways(amount)

println("There are " + ways.last + " ways to make 100 cents with all of these coins")

}

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5)

class PhoneNumber(raw: String) {

val invalidNumber = "0000000000" //this is the number to be returned if the phone number is not an elgible phone number

def digits() = raw.filter('0' to '9' contains \_) //applies a filter to the number that grabs any number from the phone number that is the number 1 to the number 9

//this method makes sure to work on the correct phone number, if phone number is invalid then makes it that way otherwise it keeps the passed in phone number

def number() = digits match {

case s if s.length < 10 => invalidNumber //phone number is less than 10 numbers return invalid number

case s if s.length > 11 => invalidNumber //phone number is greater than 11 numbers return invalid number

case s if s.length == 10 => s //phone number is equal to 10 then use that phone number

case s if s.startsWith("1") => s drop 1 //if phone number starts with a 1 then drop it

case \_ => invalidNumber //if no phone number is passed in then make it the invalid phone number (default case)

}

def areaCode() = number take 3 //method defines what part of the phone number is the area code (first three numbers)

override def toString() = f"${areaCode}${number drop 3 take 3}${number drop 6}" //this is the new toString method for the phone number which is the number but with no symbols

}

object Main

{

// Main method

def main(args: Array[String])

{

// Class object

var obj = new PhoneNumber("+1 (574)962-2888");

println(obj.toString());

}

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