Lab Assignment 5

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CPSC1150 - Section 1

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Exercise Title: List Prime Palindrome Numbers

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Department: CPSC

**Program Quadratic Formula**

File Name: Lab05.java

Purpose: To print a list of prime palindromes up to an input number.

Input: An Integer to count up to.

Output: A list of prime palindrome numbers up to

Technical Information:

Compiler: Java SDK 1.7

Computer: Intel Celeron 2955U 1.4GHz, 2.00 GB of RAM

Language: Java

Source Code:

Attached

Program Logic (Pseudocode)

(definitions)

0.1: currentNumber = number which the loop is currently on.

START

1. number = call getInput
2. for each number from 2 to number - 1

call isPalindrome and isPrime for the currentNumber and if they’re both true:

print currentNumber

END

**getInput**

(definitions)

0.1: input = user input from menu

START

1. number = input
2. return number

END

**isPrime**

(definitions)

0.1: input = user input

0.2: currentNumber = number which the loop is currently on.

START

1. number = input
2. for each number in 2 to number - 1

if remainder(number/currentNumber) is 0

return false

goto END

1. return true
2. END

**isPalindrome**

(definitions)

0.1: input = integer passed to function

START

1. number = input
2. if call reverseInt(number) is the same as numer

return true

goto END

return false

END

**reverseInt**(definitions)

0.1: input = integer passed to function

0.2: reversenum = integer

START

1. number = input
2. while number > 0

reversenum = reversenum \* 10

reversenum = reversenum + remainder(number/10)

number = number / 10

1. return reversenum

END

**Test Cases:**

Find prime palindromes

Test Case 1:

Input: -50

Returns: Blank line

Test Case 2:

Input: 1

Returns: Blank line

Test Case 3:

Input: triangle 2

Returns: 1

Test Case 4:

Input: 3

Returns: 1, 2

Test Case 5:

Input: 131

Returns: 1, 2, 3, 5, 7, 11, 101

Test Case 6:

Input: 2000000

Returns: Triangle 1, 2, 3, …98389, 98689, … 1003001, 1008001, … 1995991, 1998991

// NOTE: gets stuck n 98689 for a long time, which is why it’s included