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Taylor Earl

Assignment 4

10/3/15

CS2130

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package assignment.pkg4;

import java.util.Scanner;

import java.lang.Math;

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\* @author Taylor

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public class Assignment4 {

/\*\*

\* @param args the command line arguments

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public static void main(String[] args) {

// TODO code application logic here

Scanner stdIn = new Scanner(System.in);

Scanner stdIn1 = new Scanner(System.in);

Scanner stdIn2 = new Scanner(System.in);

Scanner stdIn3 = new Scanner(System.in);

System.out.println("Taylor Earl");

System.out.println("Assignment 4");

boolean bool = false;

do{

int originalNumber = 0;

int baseIn = 0;

int baseOut = 0;

boolean isBaseTen = false;

int newNumber = 0;

String finalNumber = "";

System.out.print("Please enter the number you are converting: ");

originalNumber = stdIn1.nextInt();

System.out.print("Please enter the base of this number: ");

baseIn = stdIn2.nextInt();

System.out.print("Please enter the base you would like to convert to: ");

baseOut = stdIn3.nextInt();

if (baseIn == 10)

{

isBaseTen = true;

}

if (isBaseTen == false)

{

newNumber = convertToTen(originalNumber, baseIn);

isBaseTen = true;

System.out.println("Base 10 = " + newNumber);

}

if(isBaseTen == true)

{

finalNumber = convertToBase(newNumber, baseOut);

}

System.out.println("Your new number is " + finalNumber + " base " + baseOut);

//conditions for looping

System.out.println("Would you like to continue?");

System.out.print("Input yes or no: ");

String decision = stdIn.nextLine();

decision = decision.toLowerCase();

if (decision.equals("no"))

{

bool = false;

}

}while(bool == true);

}

private static int convertToTen(int originalNumber, int baseIn)

{

int sum = 0;

//int size = String.valueOf(originalNumber).length();

int num = originalNumber;

for (int i = 0; num > 0; i++)

{

int temp = 0;

temp = num % 10;

sum += temp \* Math.pow(baseIn , i);

num /= 10;

}

return sum;

}

//This is the function that converts a base-10 number to the desired base

//This takes the remainder of the euclidian algorithm and builds the new number

private static String convertToBase(int newNumber, int baseOut)

{

int base = baseOut;

int temp;

temp = newNumber / baseOut;

int returnNumber= newNumber % baseOut;

if (temp == 0)

{

return Integer.toString(returnNumber);

}

else

{

return convertToBase(temp, base) + Integer.toString(returnNumber);

}

}

}