**INTRODUCTION A**

**Source Code:**

**package** introduction;

**import** java.util.Scanner;

**public** **class** BSCS2\_Marasigan\_IntrodutionA

{

**public** **static** **void** main(String[] args)

{

Scanner in = **new** Scanner(System.***in***);

**int** input, choice = 0;

**char** d='N';

**do**

{

//user input here

System.***out***.print("Input Integer Value:\t");

input = in.nextInt();

**do**

{

//options here

System.***out***.print("\nWhat do you want to do?\n1.\tSum of digits\n2.\tReverse the number"

+ "\n3.\tDisplay all the prime number from 2 to n (n is the user's input).\n\t"

+ " Apply the algorithm of Sieve of Eratosthenese\n"

+ "4.\tPalindrome Checking\n5.\tOdd or even number"

+ "\n6.\tExit\n\n Enter option [1..6]:\t");

choice = in.nextInt();

//make methods for clarity

**switch** (choice)

{

**case** 1: *sumOfDigit*(input); **break**;

**case** 2: System.***out***.println(*reverse*(input)); **break**;

**case** 3: *seiveOfErathosthenese*(input); **break**;

**case** 4: System.***out***.println(*palindrome*(input)); **break**;

**case** 5: System.***out***.println(*oddOrEven*(input)); **break**;

**case** 6: d = 'N'; **break**;

}

**if** (choice < 6)

{

System.***out***.print("\nWant to try other options? [Y/N]:\t");

String decide = in.next().toUpperCase();

d = decide.charAt(0);

}

}**while** (d == 'Y');

**if** (choice < 6)

{

System.***out***.print("Want to try other Integer input? [Y/N]:\t");

String decide = in.next().toUpperCase();

d = decide.charAt(0);

System.***out***.println();//just a space

}

}**while** (d == 'Y');

*end*();

in.close();

}

//methods here

// Tools Here (-.-;)

//digit analyzer

**static** **int**[] getDigits(**int** a)

{

String numbers = Integer.*toString*(a);

**long** limit = numbers.chars().count();

**int** l = (**int**)limit;

**int** storage[] = **new** **int** [l];

**for** (**int** set = 0; set < l; set++)

{

storage[set] = a % 10;

a = a /10;

}

**return** storage;

}

//get sum of array element (for integer elements only)

**static** **int** arraySum(**int** []a)

{

**int** w = 0;

**for** (**int** d = 0; d<a.length; d++)

{

w += a[d];

}

**return** w;

}

// User choices here (~.~!)

//choice 1

**static** **void** sumOfDigit(**int** a)

{

System.***out***.print("The digits are:");

**int**[] set = *getDigits*(a);

**int** sum = 0;

**for** (**int** digits = set.length - 1; digits > -1; digits-- )

{

System.***out***.print(" " + set[digits]);

sum += set[digits];

**if** (digits != 0)

{

System.***out***.print(" +");

}

}

System.***out***.println("\nThe sum of the digits is: " + sum);

}

//choice 2

**static** String reverse(**int** a)

{

**int** [] set = *getDigits*(a);

String show = "";

**for** (**int** digits = 0; digits <set.length; digits++)

{

show += set[digits];

}

**return** show;

}

//choice 3 (Oh globb!! I hate you so much!!!)

**static** **void** seiveOfErathosthenese(**int** a)

{

**int** limit = a; //a is integer input

**int** deduct = limit-1;

**int** array[] = **new** **int** [limit];

**int** arrayBackUp[] = **new** **int** [limit];

**int** first=1, second=0; //contains the sum of array[] and arrayBackup[] for simple comparison

**for** (**int** s = 0; s < limit; s++) //gives the array's elements from 1...a

{

array[s] = limit - (deduct);

deduct--;

}

**for** (**int** s = 1; s<limit; s++ ) //prints 2..a in the first row

{

System.***out***.print(array[s]+"\t");

}

System.***out***.println();//moves the cursor next line for upcoming array prints

**int** remainder;

**for** (**int** n = 1; first != second ; n++)

{

**if** (array[n] !=0)

{

**for** (**int** s = 0; s < limit; s++)

{//this loop is placed here so that if array[n] = 0, it will skip too and won't create backup

arrayBackUp[s] = array[s];

}//creates a backup of the array[] bago dumaan ung array[] sa paguupdate of elements

second = *arraySum*(arrayBackUp); //separate program that adds the value of array elements

**for** (**int** s = array[n]; s<limit; s++)

{

remainder = array[s] % array[n]; //filters out the numbers that has a factor of whatever the value

**if** (remainder == 0) // of array[n] is.

{// arrays[s] whatever the number it is will be converted to zero when it has a factor of array[n]

array[s] = 0;

}//this is the array updater I'm talking about in no. 142

}

first = *arraySum*(array);

**if** (first == second) //this only prints a space if the first and second is already similar

{

System.***out***.println();

}

**for** (**int** s = 1; s<limit; s++ )

{

**if** (array[s] !=0)

{//this skips the element that is zero

System.***out***.print(array[s]+"\t");

}

}

System.***out***.println(); //This only moves the cursor to next line for upcoming array prints

}

}

System.***out***.println("Above are the prime numbers inside " + limit);

}

//choice 4

**static** String palindrome(**int** a)

{

String answer = "";

String comp = *reverse*(a);

**int** b = Integer.*parseInt*(comp);

**if** (b == a)

{

answer = comp + " is Palindrome";

}

**else**

{

answer = comp + " is not Palindrome";

}

**return** answer;

}

//choice 5

**static** String oddOrEven(**int** a)

{

String answer = "";

**double** result = (a % 2);

**if** (result == 0)

answer = a + " is an Even number."; //sorry I forgot to include a space >.<

**else**

answer = a + " is an Odd number.";

**return** answer;

}

//choice 6

**static** **void** end()

{

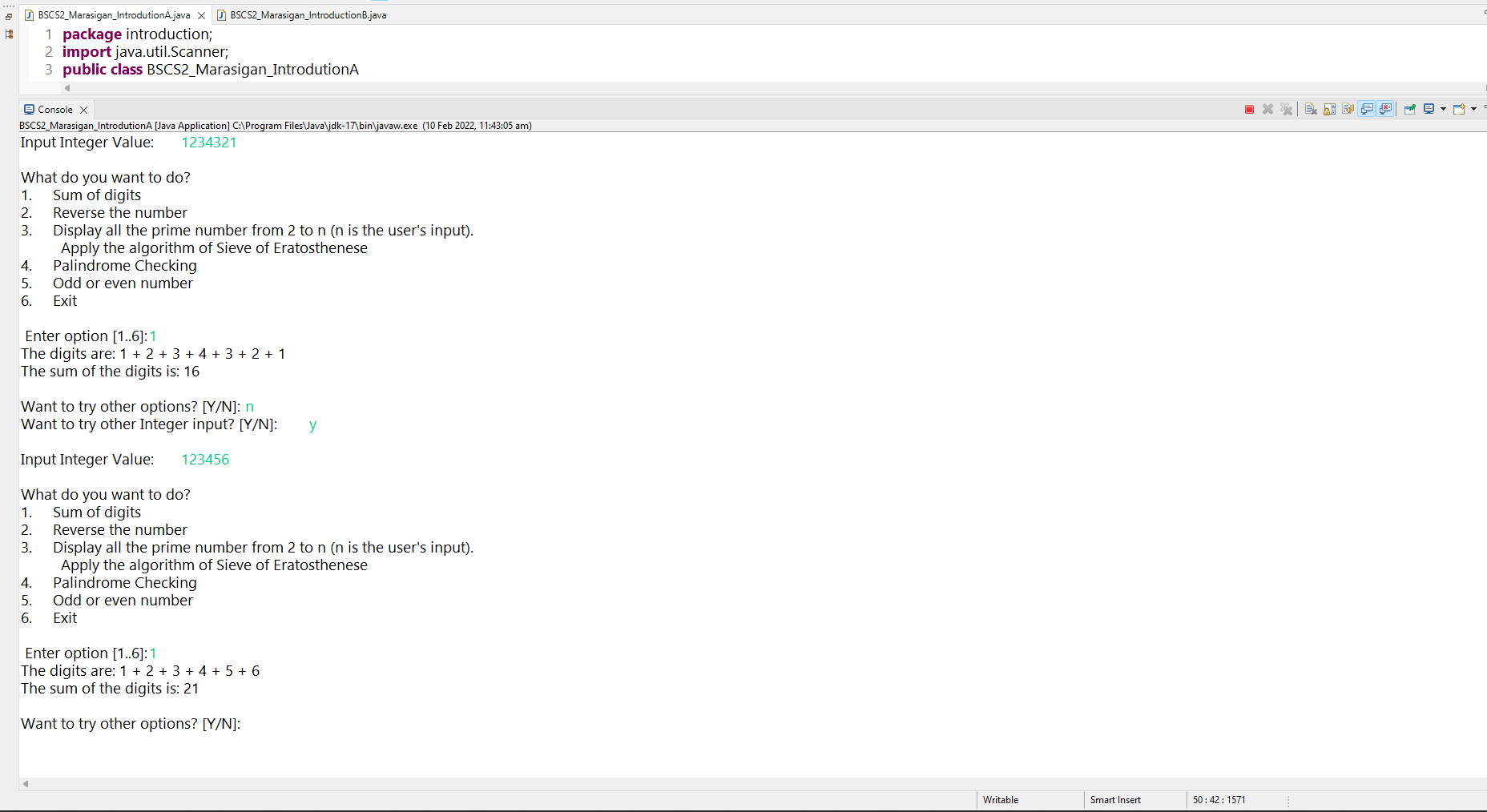
System.***out***.println("\n\t\tThank You po for Using my Program\n"

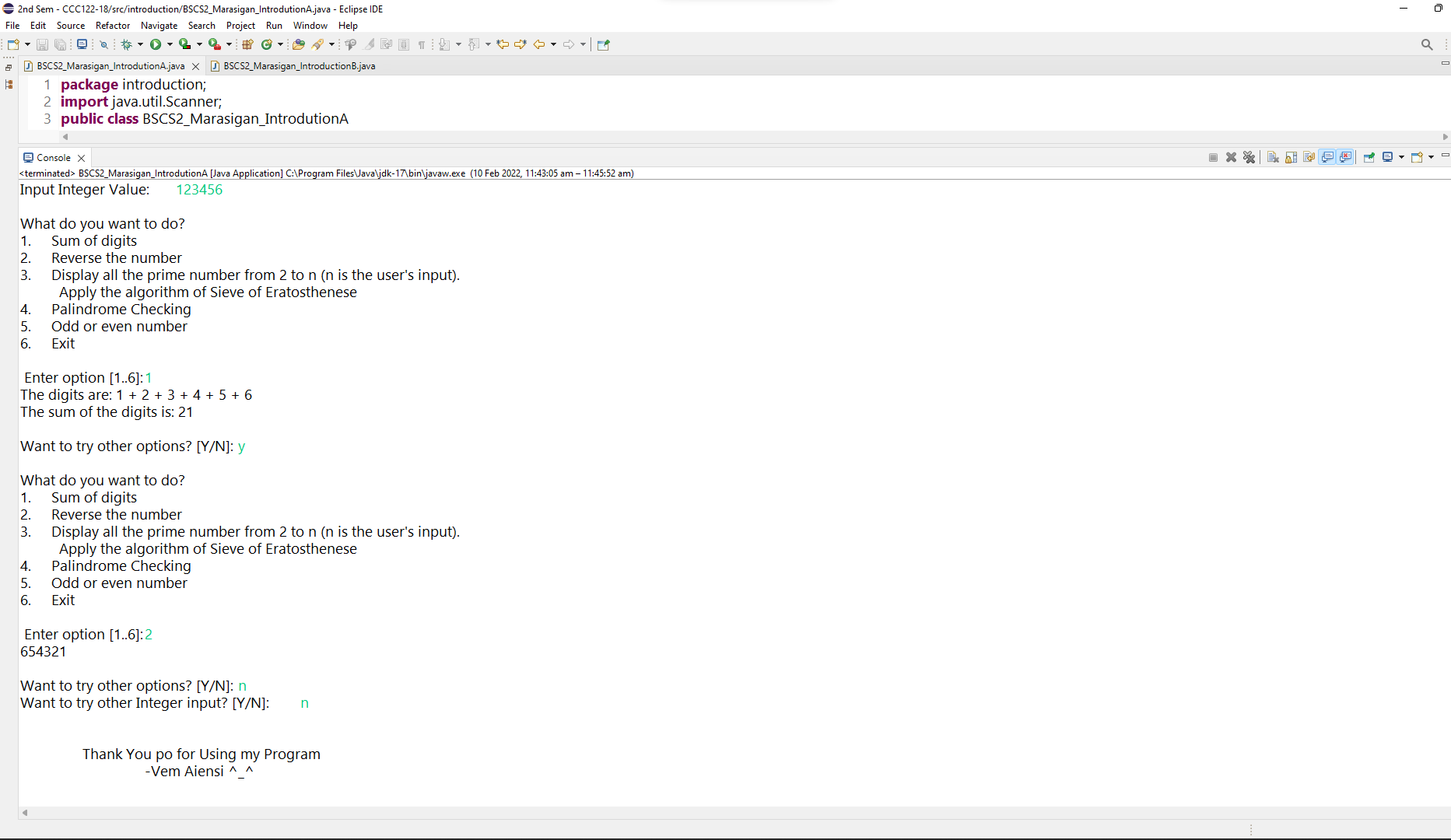
+ "\t\t\t\t-Vem Aiensi ^\_^");

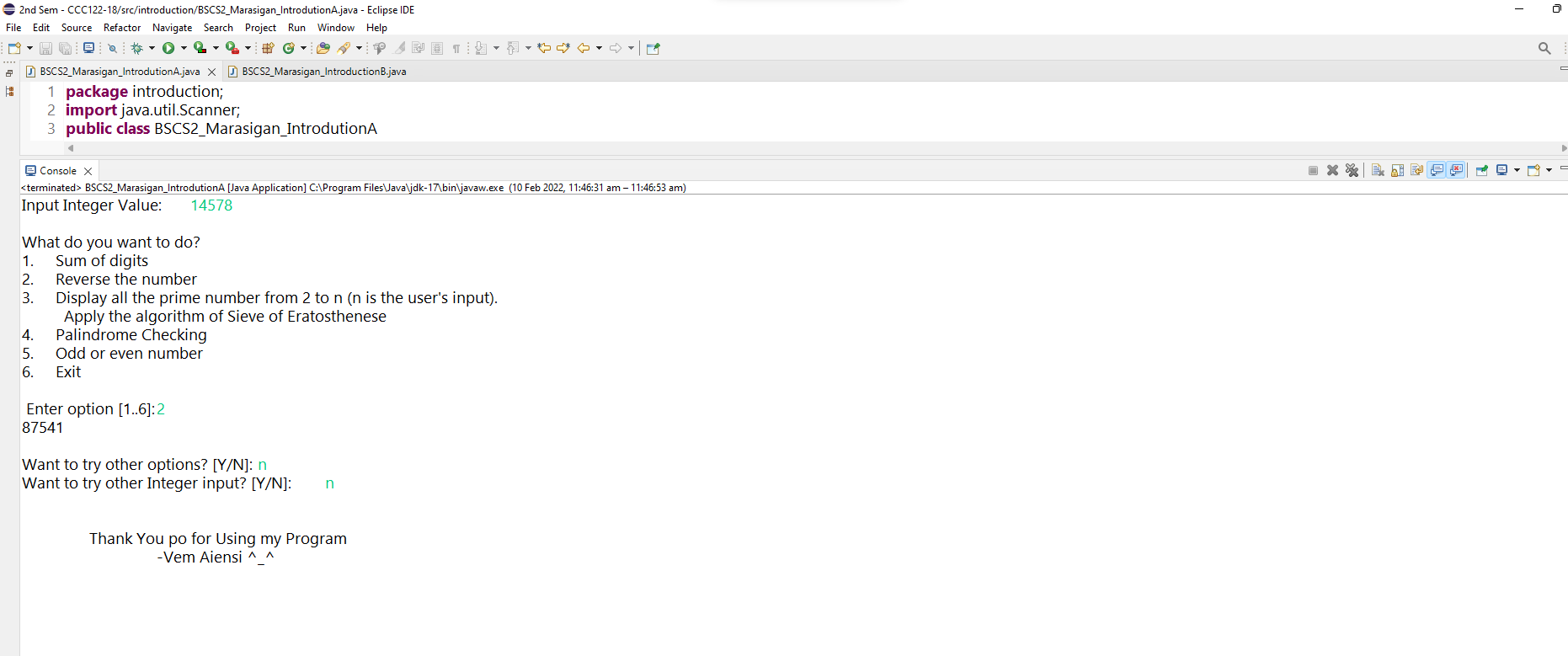
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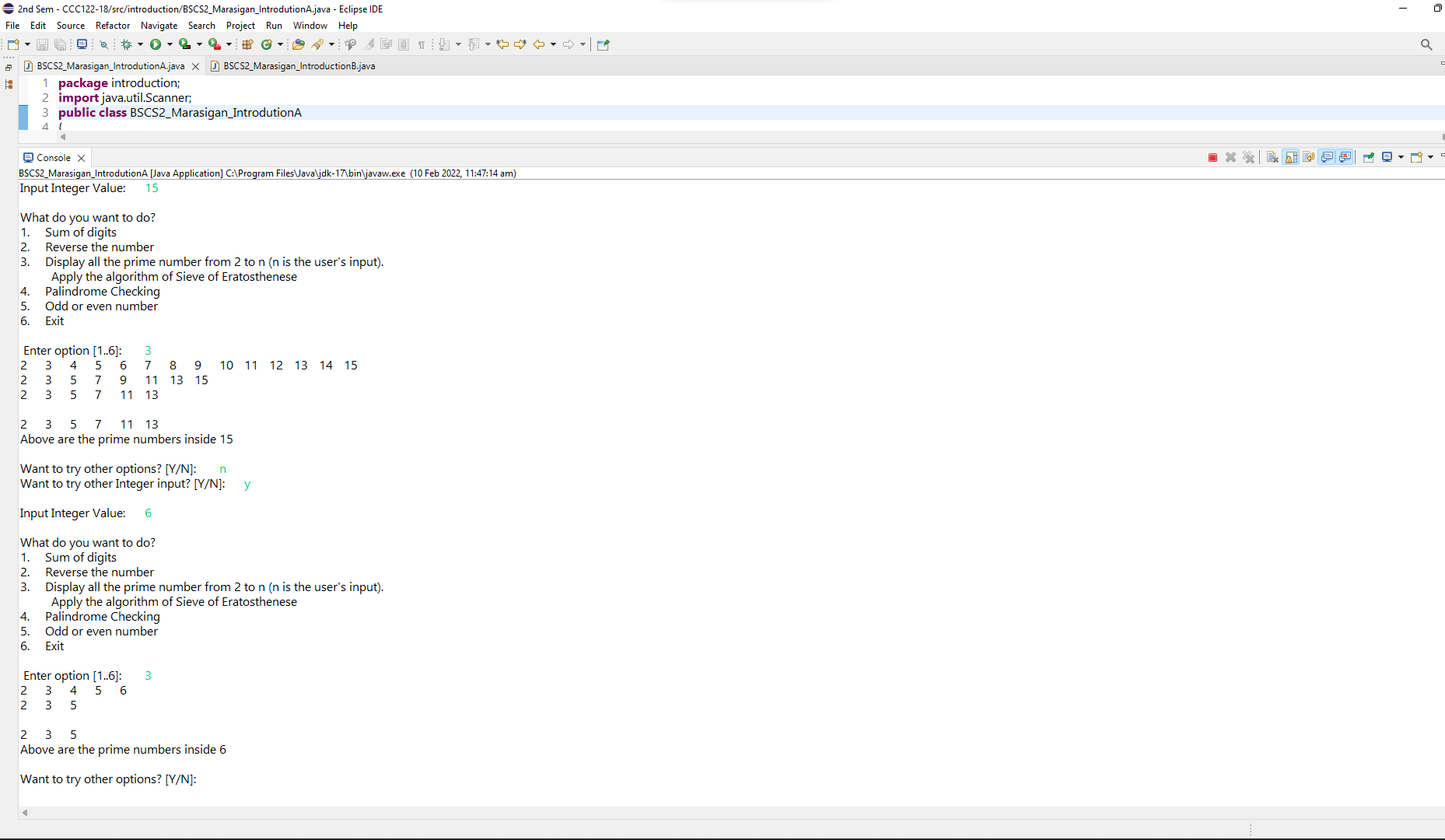
}

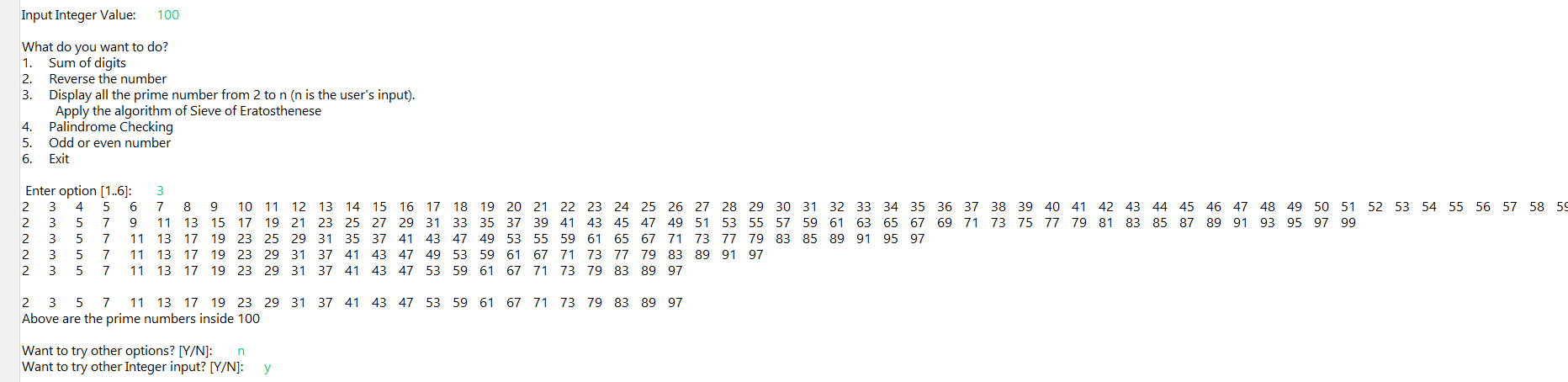
**Output:**

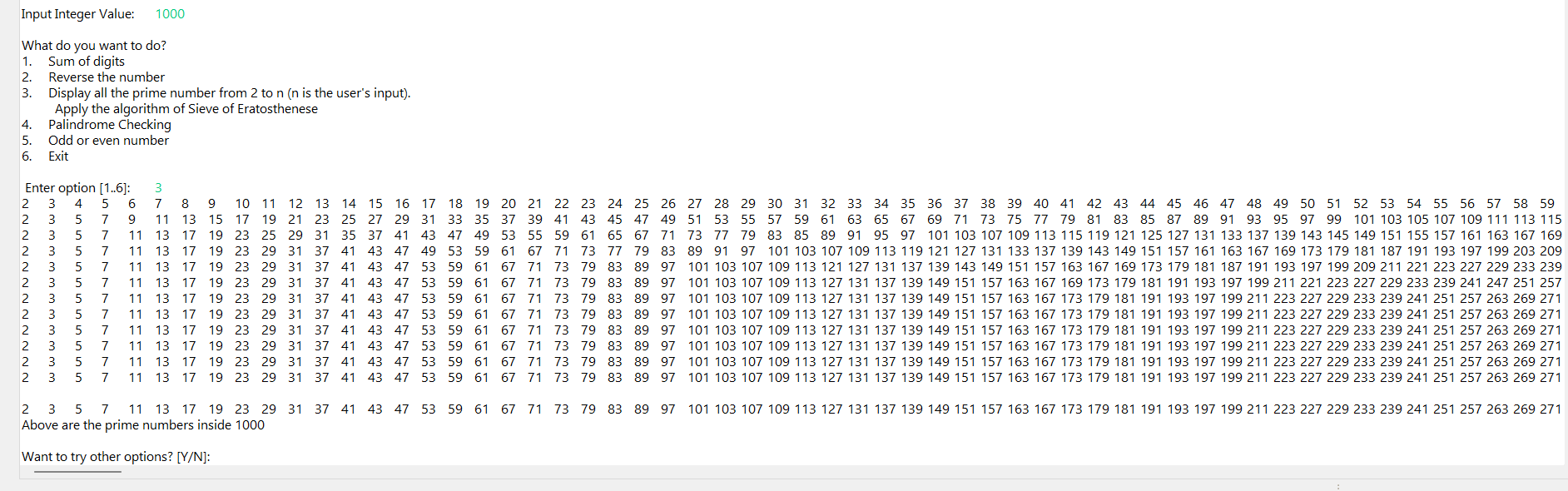
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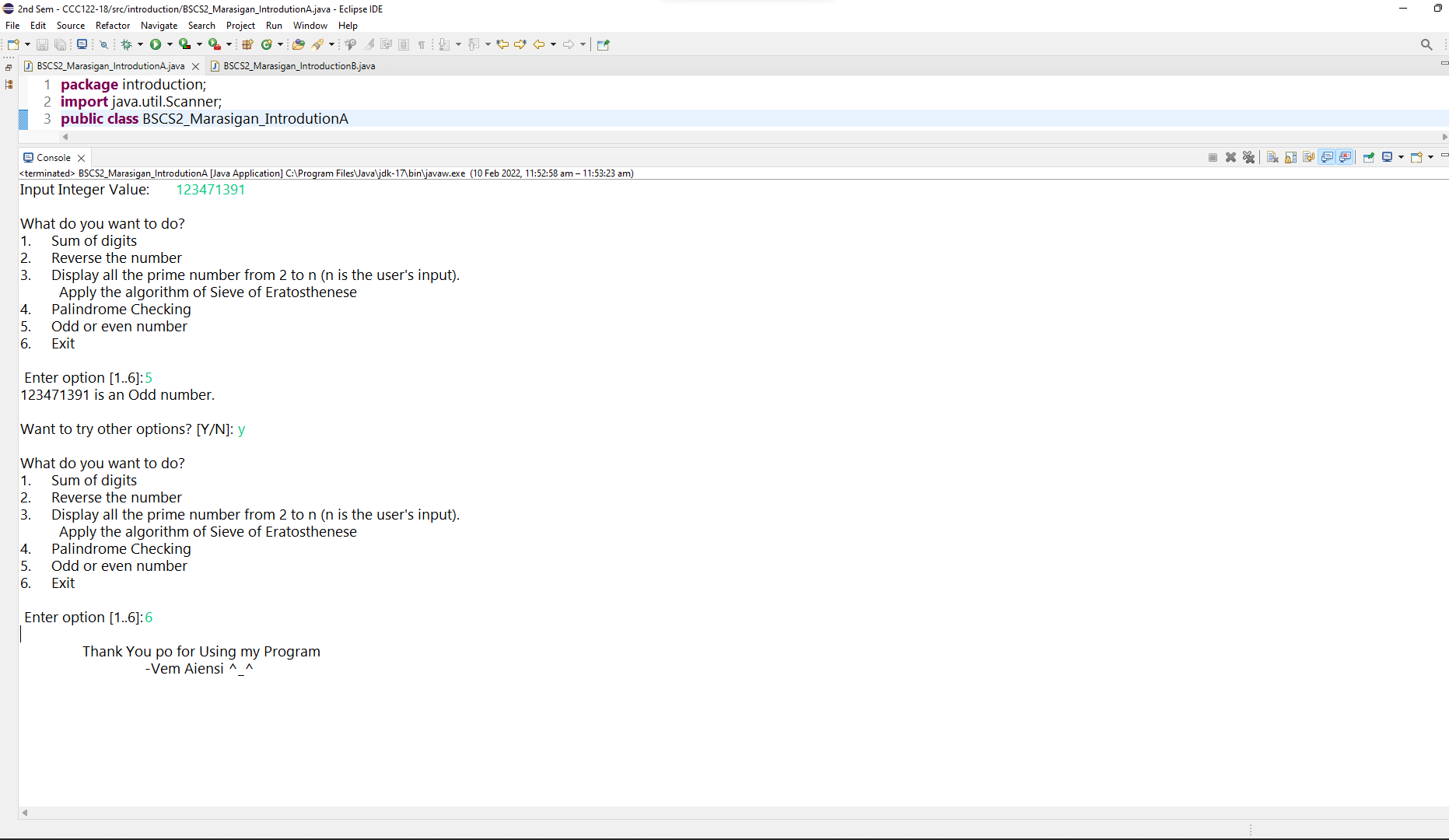
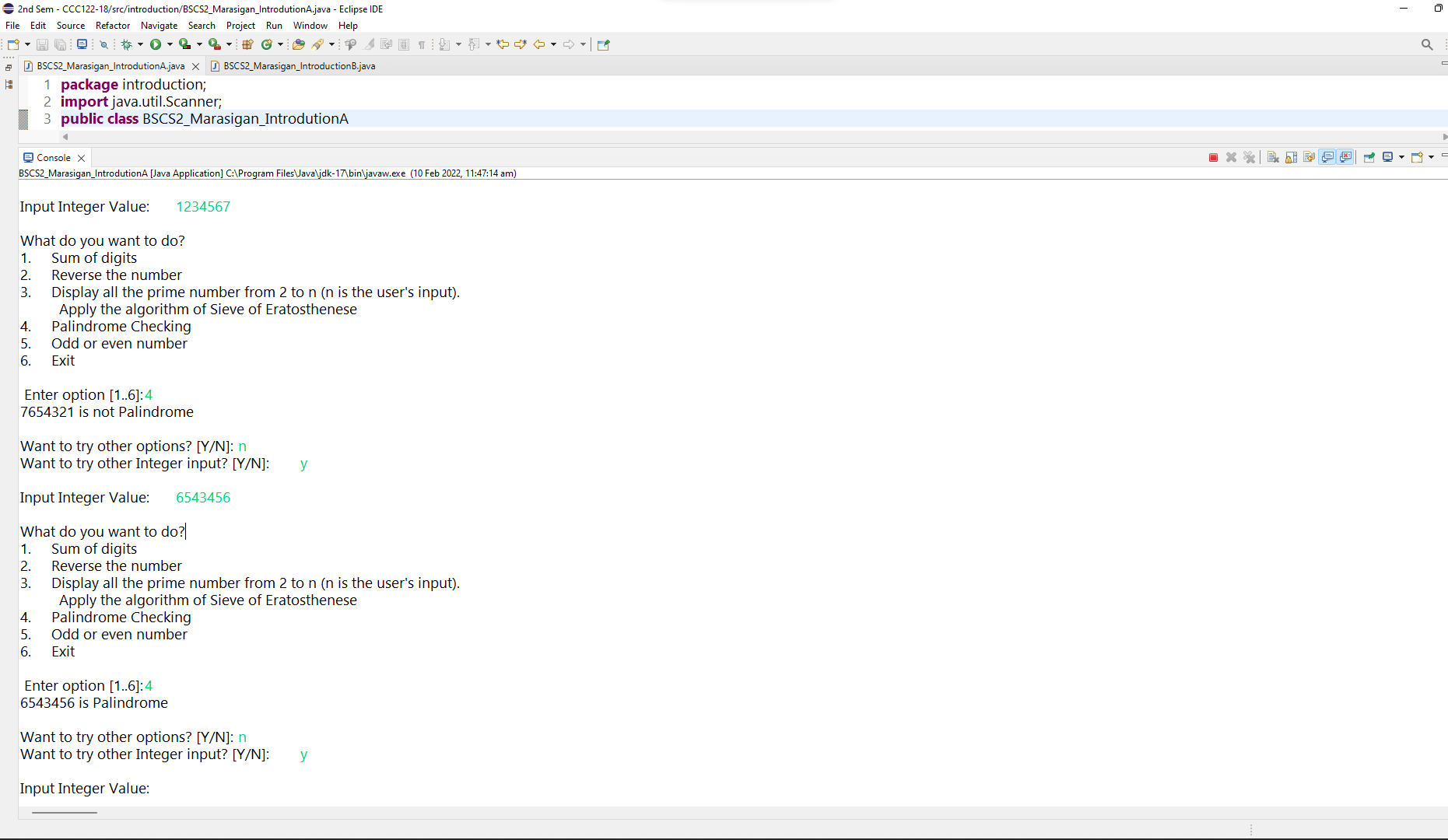
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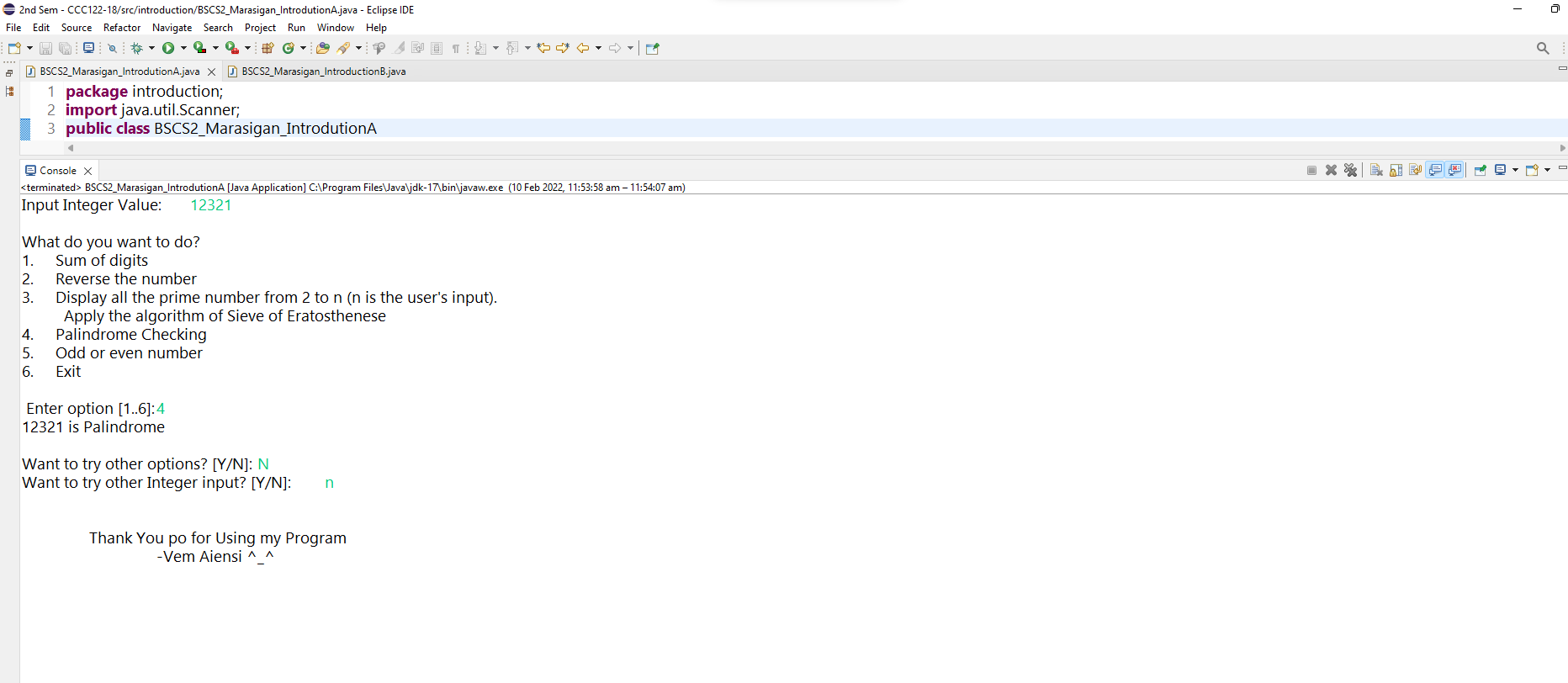
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