CIS 36B – 1st In Class / Lab Assignment – **10 Points –**
Student Name kachilau Student ID 10819338 Point Total

Pages 29 - 39 in ***Java Programming A Comprehensive Introduction***

Section 1: Define / Answer:

Array: An array is a container object that holds a fixed number of values of a single type.

Primitive Data Type Variables: (Assignment #14)

Primitive Data Type Variables:

A variable of a non-primitive type doesn't contain the value directly; instead, it is a reference (similar to a pointer) to an object. (It is not possible in Java to create user-defined value types). Java has eight primitive types: byte , short , int , long , char , boolean , float and double .

One-Dimensional Arrays: One dimensional array stores numbers in one direction (horizontal only) eg imagine an array called 'array' with the following values

Type [] array-name = new type[size]

The way to create a array;

Array Element:

an array data structure or simply an array is a data structure consisting of a collection of elements (values or variables), each identified by at least one array index or key.

Array *Index:*

CIS 36B – 1st In Class / Lab Assignment – **10 Points –**
Student Name __kachilau__ Student ID __10819338__ Point Total

Array indexing refers to any use of the square brackets ([]) to index array values.

How is 0 used?

How is 0 used? Because 0 is how far from the pointer to the head of the array to the array's first element.

Array Initializers?

Type [] array-name = new type[size]

1st Position For Data	2nd Position For Data	3rd Position For Data	4th Position For Data	5th Position For Data
0	1	2	3	4

control statements-

Control statements may be used to control the execution sequence.

If (*condition*) statement-

Conditional statements are used to perform different actions based on different conditions.

Boolean Expressions-

an expression in a programming language that produces a Boolean value when evaluated, i.e. one of true or false.

CIS 36B – 1st In Class / Lab Assignment – **10 Points –**

Student Name kachilau Student ID 10819338 Point Total

Relational Operators-

a programming language construct or operator that tests or defines some kind of relation between two entities.

(Define Each Symbol)

< Less

<= less and equal

> Greater

>= greater and equal

== Equal

!= not equal

Pages 77 -93 ***Java Programming A Comprehensive Introduction***

Page 893

What is the **if / else** ladder?

a secondary path of execution when an "if" clause evaluates to `false`.

What is a nested **if?**

using one IF Function inside another

-(Pg.84 in Java Programming)-

```
switch (expression) {
        case constant 1:
```

CIS 36B – 1st In Class / Lab Assignment – **10 Points –**
Student Name kachilau Student ID 10819338 Point Total

statement sequence

break

How do control statements **break** when used in control statements or conditional statement?

It would exit the loop

Pg. 155 - 161, Java Programming *A comprehensive Introduction*

Pg. 577, Java Programming *A comprehensive Introduction*

http://www.oracle.com/technetwork/java/javase/documentation/index-137868.html#format(Detailed explanation of Java documentation)

http://www.tutorialspoint.com/java/java_documentation.htm

http://www.liferay.com/community/wiki/-/wiki/Main/Javadoc+Guidelines#section-Javadoc+Guidelines-Class+Comments

Internal Documentation- the notes on how and why various parts of code operate is included within the source code as comments. It is often combined with meaningful variable names with the intention of providing potential future programmers a means of understanding the workings of the code.

Internal documentation would be comments and remarks made by the programmer in the form of line comments and boiler plates.

External Documentation- External documentation would be things like flow charts, UML diagrams, requirements documents, design documents etc.

Java Doc Tags- is a documentation generator from Oracle Corporation for generating APIdocumentation in HTML format from Java source code. The HTML format is used to add the convenience of being able to hyperlink related documents together.[2]

CIS 36B – 1st In Class / Lab Assignment – **10 Points –**
Student Name kachilau Student ID 10819338 Point Total

Javadoc tags (Examples)

Tag	**Description**	**Syntax**
@author	Adds the author of a class.	@author name-text
{@code}	Displays text in code font without interpreting the text as HTML markup or nested javadoc tags.	{@code text}
{@docRoot}	Represents the relative path to the generated document's root directory from any generated page	{@docRoot}
@deprecated	Adds a comment indicating that this API should no longer be used.	@deprecated deprecated-text
@exception	Adds a **Throws** subheading to the generated documentation, with the class-name and description text.	@exception class-name description
{@inheritDoc}	Inherits a comment from the **nearest** inheritable class or implementable interface	Inherits a comment from the immediate surperclass.
{@link}	Inserts an in-line link with visible text label that points to the documentation for the specified package, class or member name of a referenced class. T	{@link package.class#member label}
{@linkplain}	Identical to {@link}, except the link's label is displayed in plain text than code font.	{@linkplain package.class#member label}
@param	Adds a parameter with the specified parameter-name followed by the specified description to the "Parameters" section.	@param parameter-name description
@return	Adds a "Returns" section with the description text.	@return description

CIS 36B – 1st In Class / Lab Assignment – **10 Points –**
Student Name kachilau **Student ID** 10819338 **Point Total**

@see	Adds a "See Also" heading with a link or text entry that points to reference.	@see reference
@serial	Used in the doc comment for a default serializable field.	@serial field-description | include | exclude
@serialData	Documents the data written by the writeObject( ) or writeExternal( ) methods	@serialData data-description
@serialField	Documents an ObjectStreamField component.	@serialField field-name field-type field-description
@since	Adds a "Since" heading with the specified since-text to the generated documentation.	@since release
@throws	The @throws and @exception tags are synonyms.	@throws class-name description
{@value}	When {@value} is used in the doc comment of a static field, it displays the value of that constant:	{@value package.class#field}
@version	Adds a "Version" subheading with the specified version-text to the generated docs when the -version option is used.	@version version-text

CIS 36B – 1st In Class / Lab Assignment – **10 Points –**
Student Name kachilau Student ID 10819338 Point Total

Programming Assignment

Task 1- (*Analyzing Scores*)

Write a program that reads in test scores and determines how many scores are above or equal to the average of all the scores and how many scores are below the average.

Store the scores in an **int** Array[].

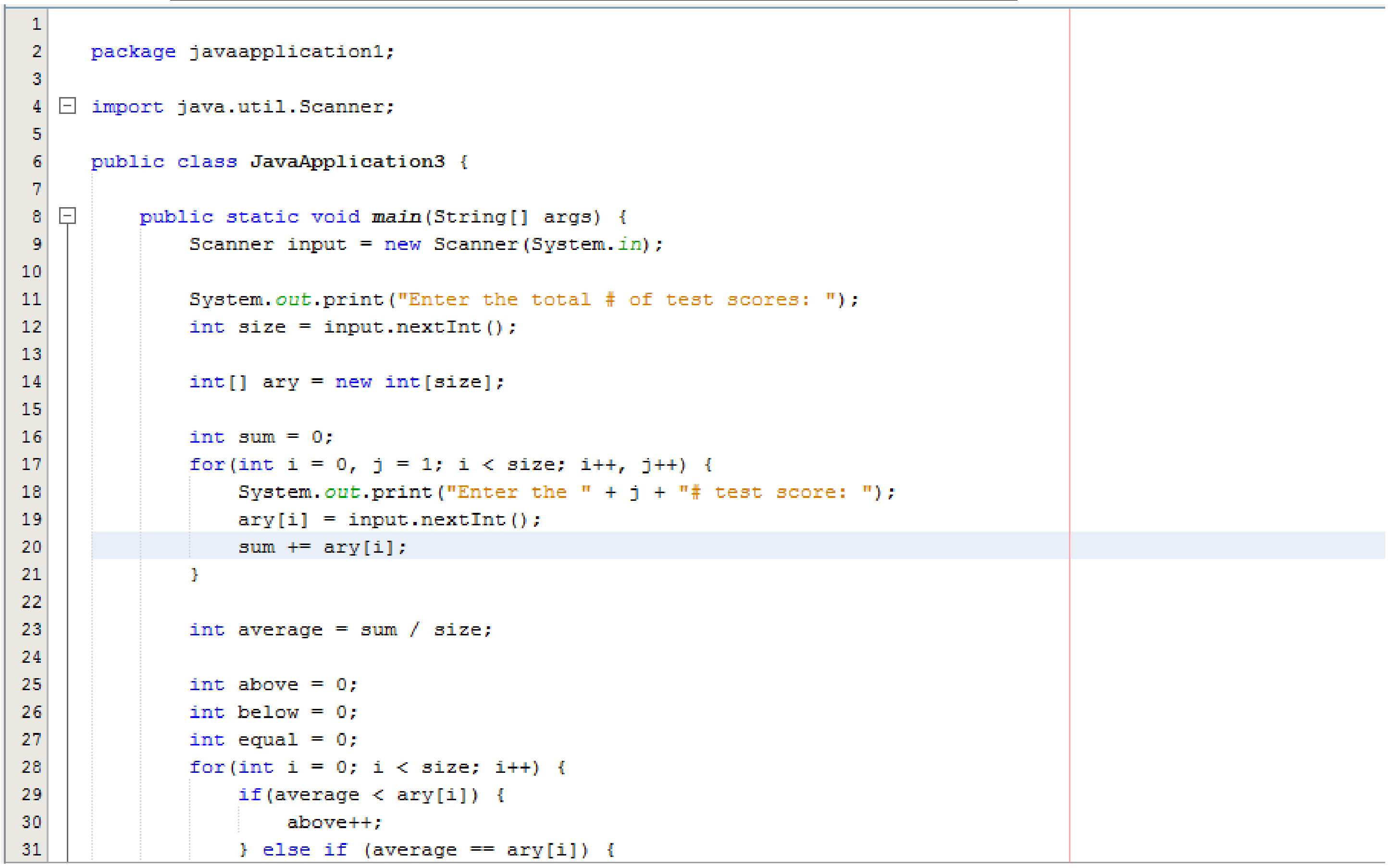
Use a for loop to sum the test scores.

Output the number of scores above or equal to the average, and the number of scores below the average. Print all test scores in the Array[].

Attach Snipping Photos of source code and output.

CIS 36B – 1st In Class / Lab Assignment – **10 Points –**

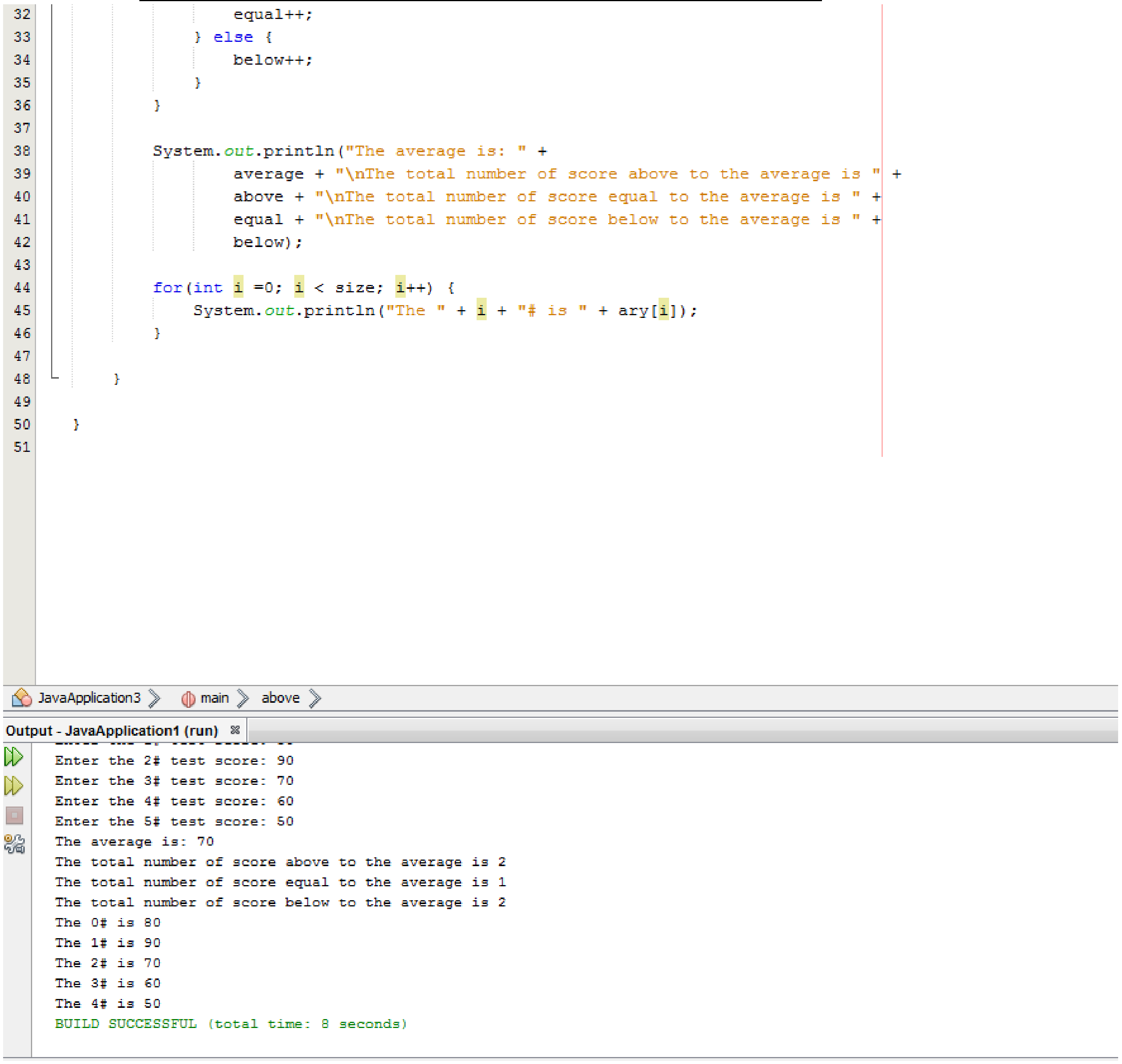
Student Name **kachilau** **Student ID** **10819338** **Point Total**



```java

package javaapplication1;

import java.util.Scanner;

public class JavaApplication3 {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter the total # of test scores: ");
        int size = input.nextInt();

        int[] ary = new int[size];

        int sum = 0;
        for(int i = 0, j = 1; i < size; i++, j++) {
            System.out.print("Enter the " + j + "# test score: ");
            ary[i] = input.nextInt();
            sum += ary[i];
        }

        int average = sum / size;

        int above = 0;
        int below = 0;
        int equal = 0;
        for(int i = 0; i < size; i++) {
            if(average < ary[i]) {
                above++;
            } else if (average == ary[i]) {
```

CIS 36B – 1st In Class / Lab Assignment – **10 Points –**

Student Name kachilau Student ID 10819338 Point Total



```
                    equal++;
                } else {
                    below++;
                }
            }

            System.out.println("The average is: " +
                    average + "\nThe total number of score above to the average is " +
                    above + "\nThe total number of score equal to the average is " +
                    equal + "\nThe total number of score below to the average is " +
                    below);

            for(int i =0; i < size; i++) {
                System.out.println("The " + i + "# is " + ary[i]);
            }

        }

    }
```

```
Enter the 2# test score: 90
Enter the 3# test score: 70
Enter the 4# test score: 60
Enter the 5# test score: 50
The average is: 70
The total number of score above to the average is 2
The total number of score equal to the average is 1
The total number of score below to the average is 2
The 0# is 80
The 1# is 90
The 2# is 70
The 3# is 60
The 4# is 50
BUILD SUCCESSFUL (total time: 8 seconds)
```