# Week 03: Coursework

## Java Basic

1. Fork and clone the following Github repository.

<https://github.com/busyQA-java-developer/busyqa-03-java-3-coursework-initial.git>

1. Import the Gradle project into Eclipse.
2. There are several exercises in the repository. Please read the following instructions to complete the Java programs:
3. *Exercise GradesAverage (Array):* Write a Java program called *GradesAverage*. This program prompts the user for a number of students, reads it from the keyboard, and stores the value in an int-typed variable called numStudents. Secondly, the program prompts the user for each student's grades and saves them into an int array called grades. Also, your program must verify that the grade is between 0 and 100. Below is a sample of the output of the program execution.

Enter the number of students: **3**

Enter the grade for student 1: **55**

Enter the grade for student 2: **108**

Invalid grade, try again...

Enter the grade for student 2: **56**

Enter the grade for student 3: **57**

The average is: 56.0

1. *Exercise ReverseString*: Write a Java program called ReverseString, which prompts the user for a string of characters and then prints the reverse of the string. The program’s output should look like the following:

Enter a String: **abcdef**

The reverse of the String "abcdef" is "fedcba".

1. Write a Java class named *Author* with the following features:

Instance variables :

firstName for the author’s first name of type String.

lastName for the author’s last name of type String.

Constructor:

public Author (String firstName, String lastName): A constructor with parameters that creates the Author object by setting the two fields to the passed values.

Instance methods:

public void setFirstName (String firstName): Used to set the author's first name.

public void setLastName (String lastName): Used to set the author's last name.

public String getFirstName(): This method returns the author's first name.

public String getLastName(): This method returns the author's last name.

public String toString(): This method prints out the author’s name to the screen

1. Write a Java class named *Book* with the following features:

Instance variables :

title for the book’s title of type String.

author for the author’s name of type Author.

price for the book’s price of type double.

Constructor:

public Book (String title, String authorFirstName, String authorLastName, double price): A constructor with parameters creates the Author object by setting the fields to the passed values.

Instance methods:

public void setTitle(String title): Used to set the book's title.

public void setAuthor(Author author): Used to set the book's author.

public void setPrice(double price): Used to set the book's price.

public String getTitle(): This method returns the book's title.

public Author getAuthor(): This method returns the book's author.

public String toString(): This method printed out the book’s details on the screen

1. After you finish the four exercises, please commit and push your changes to your GitHub repository.
2. You can find the solutions for the exercises above in the Github repository:

<https://github.com/busyQA-java-developer/busyqa-03-java-4-coursework-complete.git>

# Additional Exercises - Optional

## Various Java Topics.

1. Please create a new Gradle project in Eclipse.
2. Inside the project, create a java package called “*com.busyqa.exercises”.*
3. Open the following link and create a class in the “*com.busyqa.exercises*” package for each exercise from exercises 1 to 15. You can find the solutions to the exercises in the link.

<https://www.w3resource.com/java-exercises/method/index.php>

1. After you finish the exercises, please upload your project to your GitHub repository.

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