

Lab 4

Learning about Mathematical Functions, Characters, and String Methods.

This Lab focuses on the use of the Java API to help you find and learn about various Mathematical Functions and String Methods that you may use in your programs. You will also be doing more practice with the character variable data type.

Pre Lab

- Read Chapter 4
- Do Self-Check Questions
 - Focus on the following sections:
4.2 4.3 4.4 4.5 4.6
- Watch the following videos:
 - Introduce Math Functions (Video in 4.2)
 - Introduce String and Objects (Video in 4.4)
- Finish the following Exercise Sets:
 - 4.2 4.3 4.4
 - 4.6 – Look careful at this section to learn how to format output in specific ways. This may help you in some of the Lab Activities for this week. Also look at Case Study 4.5 (Section 4.5) to see how the running total is used in determining Birthdate.
- Answer the following questions and bring it to Lab for your TA to check:
 - Go back to review Chapter 1, Section 1.6: “The Java Language Specification, API...” and go to the API link given.
 - What is the **API** and what is its main purpose? How do you search for specific methods using the API? How could you use this for what you learned in this chapter (ex. String Methods)?
- **Make sure to review the “Key Terms” and “Chapter Summary” frequently and especially before every session.**

In-Lab Activities

You will receive this section during lab. 😊

There will be **Guided Inquiry** questions in chat bubbles located next to various Lab Activities. You must answer these questions for those particular Activities.

Post Lab

Revel Work

- Chapter 4 Programming Project 1
- Chapter 4 Programming Project 2
- Chapter 4 Programming Project 3

Programming Project: Distance

Write a program with the class name “Distance”. Allow the user to enter two coordinate points (an x and y value for each point). Then display the distance between these two points. Use the equation below to calculate distance:

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Submit this to the Post Lab Program Submission area. Upload just the JAVA class file. This can be found from within your project files, under the “src” folder.

Important Concepts

Answer the following questions on Canvas. There will be a text submission area for Post Lab 4 – answer these questions there.

1. How many methods are there in the String Object API. You can use any online resource you find. Make sure to document it.
2. What did you learn from Java API? How do you figure out which method means what? Write a brief paragraph describing how you would understand the Java API.