Lab 6b

CSC-121, Fall 2025

Individual Exercises

1. CodePath Mid-Semester Survey

How do you feel that the semester has been going so far? Please let us know in the mid-semester survey. This will help the teaching staff by providing feedback on what we could do to make the course better.

Survey Link: https://www.surveymonkey.com/r/cir-fall25-mc

2. Project Check-In

Have you started your Project **#3**, yet? ***Don't wait until the last minute!*** You should present your plan to one of the Tech Fellows and get feedback. Remember, part of your grade is based on doing the check-in.

Group Exercises

Work in a group with the help of a group leader to write the following class.

Circle class
Write a Circle class that has the following fields:

- radius: a double
- PI: a final double initialized with the value 3.14159

The class should have the following methods:

- Constructor. Accepts the radius of the circle as an argument.
- Constructor. A no-arg constructor that sets the radius field to 0.0.
- setRadius. A mutator method for the radius field.
- getRadius. An accessor method for the radius field.
- getArea. Returns the area of the circle, which is calculated as
  *area = PI * radius * radius*
- getDiameter. Returns the diameter of the circle, which is calculated as
  *diameter = radius * 2*
- getCircumference. Returns the circumference of the circle, which is calculated as
  *circumference = 2 * PI * radius*

Write a program that demonstrates the Circle class by asking the user for the circle's radius, creating a Circle object, and then reporting the circle's area, diameter, and circumference.

Partner Exercises

Work with a partner to practice writing the following problems.

Design a class named Pet, which should have the following fields:

- name. The name field holds the name of a pet.
- animal. The animal field holds the type of animal that a pet is. Example values are “Dog”, “Cat”, and “Bird”.
- age. The age field holds the pet’s age.

The Pet class should also have the following methods:

- setName. The setName method stores a value in the name field.
- setAnimal. The setAnimal method stores a value in the animal field.
- setAge. The setAge method stores a value in the age field.
- getName. The getName method returns the value of the name field.
- getAnimal. The getAnimal method returns the value of the animal field.
- getAge. The getAge method returns the value of the age field.

a. Draw a UML diagram of the class. Be sure to include notation showing each field and method’s access specification and data type. Also include notation showing any method parameters and their data types.

b. Write the Java code for the Pet class. Create a few pet objects, set their fields, and print out information about them to the console.