Exercises: Week 1

Introductory Programming 2019

Unless otherwise stated, all exercises for week 1 can be solved by adding your code to the Main.java files under the House and Figure folders. It will be under the src (which stands for source).

eg: House > src > Main.java

Exercise 1.1

Hide the triangle provided in the code (hint: use the method .makeInvisible())Create another circle. Then create a square. Make them both visibile. Remember to add ; when you finish your code :)

Exercise 1.2

What happens if you call moveDown twice? Or three times? What happens if you call makeInvisible twice?

Exercise 1.3

Try invoking the moveVertical, slowMoveVertical, and changeSizemethods before you read on. Find out how you can use moveHorizontal to move the circle 70 pixels to the left.

Exercise 1.4

Invoke the changeColor method on one of your circle objects and enter the string "red". This should change the color of the circle. Try other colors.

Exercise 1.6

Invoke the changeColor method, and write the color into the parameter field without the quotes. What happens?

Exercise 1.13

Open the house project. Create an instance of class Picture and invoke its draw method. Also, try out the setBlackAndWhite and setColor methods.

Exercise 1.16

In the source code of class Picture, find the part that actually draws the picture. Change it so that the sun will be blue rather than yellow.

Exercise 1.30

In this chapter we have mentioned the data types int and String. Java has more predefined data types. Find out what they are and what they are used for. To do this, you can check Appendix B, or look it up in another Java book or in an online Java language manual. One such manual is at

https://docs.oracle.com/javase/tutorial/java/nutsandbolts/datatypes.html

Exercise 1.31

What are the types of the following values?

- 0
- "hello"
- 101
- -1
- true
- "33"
- 3.1415

Exercise 1.36

Can an object have several different classes?

– CHALLENGES –

(This means that this exercise might not be solved quickly. We do not expect everyone to be able to solve this at the moment. If you do, great. If you don't, then don't worry. Things will become clearer as you read on. Come back to this exercise later.)

Exercise 1.18

Add a sunset to the single-sun version of Picture. That is, make the sun go down slowly. Remember: The circle has a method slowMoveVertical that you can use to do this.

Exercise 1.19

If you added your sunset to the end of the draw method (so that the sun goes down automatically when the picture is drawn), change this now. We now want the sunset in a separate method, so that we can call draw and see the picture with the sun up, and then call sunset (a separate method!) to make the sun go down.

Exercise 1.20

Make a person walk up to the house after the sunset.