CSCI 0150

Brown University

September 13, 2018

Homework 1

1.
    a. Done.
    b. We must not discuss any assigned project with any other student, either current or past. This includes, but is not limited to approaches, code, and debugging. It is ok to discuss general concepts, lectures and syntax without the context of a project. If we need help on a project we should seek out a TA. Online materials are limited to the CS 15 website and the official Java docs. During sections, we can work together on that specific project because they are supervised by a TA.
2.
    a. A TA should help with conceptual questions and specific project questions. They can only help with debugging after a student as put in a significant amount of time and effort into debugging themselves. Only then will you receive tools to help you debug the program yourself.
    b. A method header appears before a method and describes what the method does, what type of parameters it takes, and what it returns.
    c. Instance Variables start with an underscore followed by a lowercase letter and can be used by any method in the class while local variables start with a lowercase letter and can only be used within a single method.
3.
    a. The driver should be the one typing the code and checking the suggestions of the navigator. The navigator tells the driver what to type and to double check the drivers work. If you take more than 90 minutes to complete the lab then you must complete the rest of the lab on your own. Working with your partner after the 90 minutes has elapsed is a violation of the Collaboration Policy.
4.
    a.

        Tell cs15Bot to shuffle left 3 steps.

        Tell cs15Bot to move down 1 step.

        Tell cs15Bot to shuffle right 3 steps.

        Tell cs15Bot to move down 2 steps

        Tell cs15Bot to shuffle left 1 step.

        Tell cs15Bot to move up 1 step.

        Tell cs15Bot to shuffle left 3 steps.

        Tell cs15Bot to move up 2 steps.

Tell cs15Bot to shuffle left 1 step.

Tell cs15Bot to move down 3 steps.

Tell cs15Bot to shuffle left 1 step.

Tell cs15Bot to move up 3 steps.

b.
```
public class RobotMover {
    /* additional code elided */
    public void moveRobot(Robot cs15Bot) {
        cs15Bot.shuffleLeft(3);
        cs15Bot.moveDown(1);
        cs15Bot.shuffleRight(3);
        cs15Bot.moveDown(2);
        cs15Bot.shuffleLeft(1);
        cs15Bot.moveUp(1);
        cs15Bot.shuffleLeft(3);
        cs15Bot.moveUp(2);
        cs15Bot.shuffleLeft(1);
        cs15Bot.moveDown(3);
        cs15Bot.shuffleLeft(1);
        cs15Bot.moveUp(3);
    }
}
```

5.

a.
```
public class Robot {
    /* additional methods elided */
    public void testRollerCoaster() {
        /* implementation elided */
    }
    public void buildTrack() {
```

```
        /* implementation elided */
    }
    public void makeCars(int numCars) {
        /* implementation elided */
    }
    public void buildFoundation() {
        /* implementation elided */
    }
    public void makeLoops(int numLoops) {
        /* implementation elided */
    } public void hookCars() {
        /* implementation elided */
    }
    public void screamInFright() {
        /* implementation elided */
    }
    public void createRollerCoaster() {
        this.buildFoundation();
        this.makeLoops(5);
        this.buildTrack();
        this.makeCars(3);
        this.hookCars();
        this.testRollerCoaster();
        this.screamInFright();
}
```

b. createRollerCoaster()
c. makeLoops(int numLoops)
d.

<visability> <returnType> <methodName>(<parameter1Type> <parameter1Name>, … , <parameterNType> <parameterNName>) {

```
        /* implementation */
    }
```

6.

a.

```
    public int totalNumCorrect( int baljeetCorrect, int isabellaCorrect) {
        Return( baljeetCorrect + isabellaCorrect);
    }
```

b.

i.

```
    public class FunctionCalculator {
        public int functionA( int xA, int yA) {
            return( xA/yA + 5 * xA - 7 );
        }
        public int function( int xB, int yB, int zB) {
            return( this.functionA( yB, zB ) + ( xB%2 ) );
        }
    }
```

7. Hello World!