

## CSPB 3155 - Reckwerdt - Principles of Programming Languages

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**Started on** Wednesday, 3 July 2024, 3:23 PM

**State** Finished

**Completed on** Wednesday, 3 July 2024, 3:27 PM

**Time taken** 3 mins 36 secs

**Marks** 5.00/5.00

**Grade** 10.00 out of 10.00 (100%)

### Question 1

Correct

Mark 1.00 out of 1.00

What figure does the program below generate:

```
let a = rectangle(1) in
  let b = circle(0.5) in
    a/b
```

Select one:

- ☐ a. A circle on top of a circle
- ☒ b. A square on top of a circle
- ☐ c. error
- ☐ d. A circle on top of a square
- ☐ e. A doberman on top of a dalmatian

Your answer is correct.

Correct

Marks for this submission: 1.00/1.00.

Question **2**

Correct

Mark 1.00 out of 1.00

Where is the file ASTGrammar.scala located under the main project directory?

Select one:

- ☐ a. directory/under/file/system
- ☐ b. who/knows/where
- ☒ c. src/main/scala/edu/colorado/csci3155/project2
- ☐ d. I do not know
- ☐ e. /etc/rc.d/init.d/system/networking/apis/samsung/10313

Your answer is correct.

Correct

Marks for this submission: 1.00/1.00.

Question **3**

Correct

Mark 1.00 out of 1.00

What is the purpose of the MyCanvas data structure in the file MyCanvas.scala?

Select one:

- ☐ a. It implements the entire interpreter
- ☒ b. It implements a collection of figures that could be polygons and circles along with operations to overlay, translate, rotate, placeTop and others.
- ☐ c. It stores my canvas
- ☐ d. I will find out when I start working on the project

Your answer is correct.

Correct

Marks for this submission: 1.00/1.00.

Question 4

Correct

Mark 1.00 out of 1.00

What does the rule below mean?

$$\frac{evalExpr(e1, \sigma) = v_1, v_1 = Canvas(O_1) \quad evalExpr(e2, \sigma) = v_2, v_2 = Canvas(O_2)}{evalExpr(Plus(e1, e2), \sigma) = \text{overlap}(v_1, v_2)} \text{ (plus-figures-ok)}$$

Select one:

- ☐ a. It means that some things in life are above the line and some are below: such is the nature of the tao.
- ☒ b. It is a rule that says that when we add two expressions that evaluate to figures, the result is given by overlaying them.
- ☐ c. I have no clue whatsoever
- ☐ d. It is a semantic rule for dividing one number by another

Your answer is correct.

Correct

Marks for this submission: 1.00/1.00.

Question **5**

Correct

Mark 1.00 out of 1.00

Here is a short excerpt from the file Interpreter.scala:

```
case FunDef(x, e) => ??? //TODO: Handle function definitions

case LetRec(f, x, e1, e2) => ??? // TODO: Handle recursive functions -- look at Environment.scala

case FunCall(fCallExpr, arg) => ??? // TODO: Handle function calls
```

How would you implement the code for the missing parts here?

Select one:

- ☒ a. Consult notebooks posted by Sriram on "Function Calls in Lettuce" and "Recursion in Lettuce".
- ☐ b. Drink some beer.
- ☐ c. Figure it out: Sriram mumbled something about it three weeks ago but I slept the whole time.
- ☐ d. Beg for help from my friends on facebook.

Your answer is correct.

Correct

Marks for this submission: 1.00/1.00.