📖 PRE-ASSESSMENT: SCRIPTING AND PROGRAMMING FOUNDATIONS (RHO1) (PRHO)

Attempt #1
Status: Passed

✓ 1. What does a programmer do first to use an existing programming library?

	YOUR ANSWER	CORRECT ANSWER
Write the library's functions		
Modify the library's functions		
Include the library	✔	✔
Discard the library		

✓ 2. What relationship is common among a programming library's functions?

	YOUR ANSWER	CORRECT ANSWER
Functions all relate to the same purpose.	✔	✔
Each function competes with the other function.		
Each function fixes bugs in the other functions.		
Every function performs the identical computation.		

✓ 3. What is an advantage of using a programming library?

	YOUR ANSWER	CORRECT ANSWER
The code has not been tested.		
The code has already been tested.	✔	✔
The code can be used across programming languages.		
The code has already been compiled.		

	YOUR ANSWER	CORRECT ANSWER
C		
C++		
Java		
Python	✔	✔

5. **Which language is not built on object-oriented design principles?**

	YOUR ANSWER	CORRECT ANSWER
C	✔	✔
C++		
Java		
Python		

6. **A language substantially supports a programmer creating items like person, teacher, and students. Each item has internal data and some operations.**

Which characteristic describes that language?

	YOUR ANSWER	CORRECT ANSWER
Dynamically typed		
Object-oriented	✔	✔
Markup		
Statically typed		

7. **A programmer wants a compiler to report an error if an integer variable is assigned with a string.**

Which kind of language should the programmer use?

	YOUR ANSWER	CORRECT ANSWER
Dynamically typed		

	YOUR ANSWER	CORRECT ANSWER
Markup		
Statically typed	✔	✔

8. **A language uses tags around text to indicate how that text should be formatted.**

Which characteristic describes a language having such tags?

	YOUR ANSWER	CORRECT ANSWER
Objects		
Compiler		
Script		
Markup	✔	✔

9. **What is a characteristic of a compiled language?**

	YOUR ANSWER	CORRECT ANSWER
Runs one statement at a time by another program		
Is slower than an interpreted language		
Converts to machine language before running	✔	✔
Runs on any machine having an interpreter		

10. **What is a characteristic of an interpreted language?**

	YOUR ANSWER	CORRECT ANSWER
Runs faster than compiled languages		
Outputs an interpreter to run the program		
Runs easily on different kinds of machines	✔	✔
Needs to be converted to machine code first		

	YOUR ANSWER	CORRECT ANSWER
They generally run faster than compiled programs.		
They can be modified at run time.	✔	✔
They use memory more efficiently.		
They create a separate file.		

12. Which characteristic specifically describes a markup language?

	YOUR ANSWER	CORRECT ANSWER
Tags surround text to describe desired formatting.	✔	✔
A program's execution marks output with numbers and strings.		
A compiler marks statements with 0's and 1's.		
An interpreter executes statements one at a time.		

13. Which characteristic specifically describes interpreted languages?

	YOUR ANSWER	CORRECT ANSWER
They are written using pseudocode.		
They consist of a set of functions and objects.		
They can be run one statement at a time.	✔	✔
They are converted to 0's and 1's.		

14. Which characteristic specifically describes interpreted languages?

	YOUR ANSWER	CORRECT ANSWER
They are drawn out using graphical diagrams.		
They can run on any machine having the right interpreter.	✔	✔
They are compiled to machine code before being executed.		

15. A car drove 200 miles using 10 gallons of fuel.

Which operation should be used to compute the miles per gallon, which is 20?

	YOUR ANSWER	CORRECT ANSWER
Addition		
Subtraction		
Multiplication		
Division	✔	✔

16. Which operator should be used to determine if a number is evenly divisible by 5?

	YOUR ANSWER	CORRECT ANSWER
+		
-		
*		
%	✔	✔

17. A variable should hold a person's height in meters.

Which data type should the variable be?

	YOUR ANSWER	CORRECT ANSWER
Integer		
Float	✔	✔
String		
Boolean		

18. A variable should hold the names of all past U.S. presidents.

Which data type should the variable be?

Integer array		
Float array		
String array	✔	✔
Boolean array		

19. A program uses the number of seconds in a minute in various calculations.

How should the item that holds the number of seconds in a minute be declared?

	YOUR ANSWER	CORRECT ANSWER
Constant float userTime		
Variable float userTime		
Constant integer secondsPerMinute	✔	✔
Variable integer secondsPerMinute		

20. A program determines if a user's age is high enough to run for U.S. president. The minimum age requirement is 35.

How should the item that holds the minimum age be declared?

	YOUR ANSWER	CORRECT ANSWER
Constant integer minAge	✔	✔
Variable integer minAge		
Constant integer 35		
Variable integer 35		

21. Given integer x = 3 and integer y = 5.
What is the value of the expression $(x / 2.0) + y$?

	YOUR ANSWER	CORRECT ANSWER
5.0		

	YOUR ANSWER	CORRECT ANSWER
6.0		
6.5	✔	✔
7.5		

22. **Given float *x* = 10.2 and float *y* = 1.0.**
What is the value of the expression *x* / *y*?

	YOUR ANSWER	CORRECT ANSWER
0.0		
1.0		
10		
10.2	✔	✔

23. **What kind of operator is the == in the expression *i* == 20?**

	YOUR ANSWER	CORRECT ANSWER
Assignment		
Arithmetic		
Equality	✔	✔
Logical		

24. **What is the purpose of parentheses () in a programming expression?**

	YOUR ANSWER	CORRECT ANSWER
To print expressions		
To group expressions	✔	✔
To run expressions		
To compose expressions		

25. ✅ Given float x = 3.0.

Which expression evaluates to 2.0?

	YOUR ANSWER	CORRECT ANSWER
x / 3 * 2 + 2		
x − 2/3		
x + 0.5 /2		
x / 2 + 0.5 /2 + .25	✔	✔

26. ❌ Which expression represents all the values of x, when x is the age ranging from 18 to 24 years old?

	YOUR ANSWER	CORRECT ANSWER
(x >= 18) or (x <= 24)	✔	
(x >= 18) and (x <= 24)		✔
(x < 18) or (x > 24)		
(x < 18) and (x > 24)		

27. ✅ Which data type is used for items that are measured in length?

	YOUR ANSWER	CORRECT ANSWER
Integer		
Float	✔	✔
String		
Boolean		

28. ✅ Which data type should be used to keep track of how many planes are in a hangar?

	YOUR ANSWER	CORRECT ANSWER
Integer	✔	✔
Float		

	YOUR ANSWER	CORRECT ANSWER
String		
Boolean		

✔ 29. **A function should convert hours and minutes to seconds, such as converting 1 hour and 10 minutes to 4,200 seconds.**

What should be the input to the function?

	YOUR ANSWER	CORRECT ANSWER
Hours only		
Minutes only		
Hours and minutes	✔	✔
Hours, minutes, and seconds		

✔ 30. **A function returns a number x cubed. For example, if *x* is 3, the function returns 3 * 3 * 3, or 27.**

What should be the input to the function?

	YOUR ANSWER	CORRECT ANSWER
x	✔	✔
x, *x*		
x, *x*, *x*		
27		

✔ 31. **A function calculates the weight difference (Diff) given two sample weights (S1 and S2).**

What should be the output from the function?

	YOUR ANSWER	CORRECT ANSWER
S1 only		
S2 only		

	YOUR ANSWER	CORRECT ANSWER
Diff	✔	✔

32. **function P(integer x) returns integer y**
    y = 2 * x

What does P(5) evaluate to?

	YOUR ANSWER	CORRECT ANSWER
2		
5		
10	✔	✔
25		

33. **Function F()**
    Put "Hey" to output

What entire output appears after three successive calls to F()?

	YOUR ANSWER	CORRECT ANSWER
Hey		
HHHey		
HeyHeyHey	✔	✔
Hey Hey Hey		

34. **What is a valid user-defined function name?**

	YOUR ANSWER	CORRECT ANSWER
A reserved word		
Any valid identifier	✔	✔
Any variable name		
A floating-point number		

35. A function MyFct has an input *x* and an output *z*.

What does MyFct return?

	YOUR ANSWER	CORRECT ANSWER
Nothing		
x only		
z only	✔	✔
x and *z*		

36. What is the return value of a function?

	YOUR ANSWER	CORRECT ANSWER
Output of a function	✔	✔
Call to run the function		
Data passed to the function		
Variable in the declaration of the function		

37. A program should continue accepting input numbers, adding each to a sum, until a 0 is input.

Which control structure should be used?

	YOUR ANSWER	CORRECT ANSWER
If statement		
For loop		
Multiple if statements		
While loop	✔	✔

38. Joe is building an online game. He wants to provide a riddle and have the player guess the answer. The game needs to prompt the user to enter the answer, check to see if it the input provided does not match the correct answer, and continue prompting the user until the answer entered matches the correct answer.

	YOUR ANSWER	CORRECT ANSWER
For loop		
While loop		
Do-while loop	✔	✔
If-else branch		

39. **What is put to output by the following pseudocode?**

x = 3
do
  Put x to output
  Put " " to output
  x = x - 1
while x > 0

	YOUR ANSWER	CORRECT ANSWER
3 2 1 0		
3 2 1 0 -1		
2 1 0		
3 2 1	✔	✔

40. **A programmer has developed the following code:**

count = 0
while count is less than 5:
  print 'Hello'

What is the result of implementing this code?

	YOUR ANSWER	CORRECT ANSWER
'Hello' will print four times.		
'Hello' will print five times.		
The program will throw an error.		

41. What is the loop expression in the following pseudocode?

```
i = 0
while i < 20
  Put i to output
  i = i + 1
```

	YOUR ANSWER	CORRECT ANSWER
i		
i < 20	✔	✔
i = 0		
i = *i* + 1		

42. What is the loop variable initialization in the following pseudocode?

```
y = 0
s = 100.0
while y < 10
  s = s + (s * 5.0)
  y = y + 1
```

	YOUR ANSWER	CORRECT ANSWER
y = 0	✔	✔
y = *y* + 1		
s = 100.0		
s = *s* + (*s* * 5.0)		

43. Order the statements needed to output the minimum of x and y from first (1) to last (4).

Select your answer from the pull down list.

	YOUR ANSWER	CORRECT ANSWER
✔	Declare variable min	Declare variable min
✔	min = x	min = x

	YOUR ANSWER	CORRECT ANSWER
✔	Put min to output	Put min to output

44. ✔ **Given a start and end location and time traveled in hours, order the statements needed to calculate speed in miles per hour from first (1) to last (4).**

Select your answers from the pull-down list.

	YOUR ANSWER	CORRECT ANSWER
✔	Declare variables distMiles and speedMph	Declare variables distMiles and speedMph
✔	distMiles = endLocation - startLocation	distMiles = endLocation - startLocation
✔	speedMph = distMiles / timeHours	speedMph = distMiles / timeHours
✔	Put speedMph to output	Put speedMph to output

45. ✔ **Order the tasks needed to create a pyramid (large on bottom, small on top) on a table from first (1) to last (4).**

Select your answer from the pull down list.

	YOUR ANSWER	CORRECT ANSWER
✔	Clear table.	Clear table.
✔	Place largest shape.	Place largest shape.
✔	Place middle-sized shape.	Place middle-sized shape.
✔	Place smallest shape.	Place smallest shape.

46. ✔ **What does the following algorithm determine?**
if x == y
  z = 1
else
  z = 0

	YOUR ANSWER	CORRECT ANSWER
Whether x and y are the same	✔	✔

	YOUR ANSWER	CORRECT ANSWER
Whether *x* and *y* are negative		
Whether *x* is 1		
Whether *x* is 0		

47. **What does the following algorithm accomplish?**
x = Get next input
if x == –1
  Put "Goodbye" to output

	YOUR ANSWER	CORRECT ANSWER
Outputs –1 when user types any input		
Outputs "x" when user types –1		
Outputs –1 when x is positive		
Outputs Goodbye when user types –1	✔	✔

48. **What does an output of 1 indicate for the following algorithm running on a five-element list of integers?**
i = 0
x = 0
while i < 5
  if list[i] < 0
    x = 1
  i = i + 1
Put x to output

	YOUR ANSWER	CORRECT ANSWER
All integers are positive.		
All integers are negative.		
At least one integer is negative.	✔	✔
At least one integer is positive.		

49. **When should a programmer develop an algorithm to solve a problem?**

	YOUR ANSWER	CORRECT ANSWER
Before knowing the problem		
Before writing a program to solve the problem	✔	✔
While writing a program to solve the problem		
After writing a program to solve the problem		

50. Which text represents an algorithm?

	YOUR ANSWER	CORRECT ANSWER
Cats and dogs have tails.		
Insert key, turn key, open door.	✔	✔
The forecast for tomorrow is rain.		
A box has balls, bats, and hats.		

51. Which text represents an algorithm?

	YOUR ANSWER	CORRECT ANSWER
Shake bulb; if it rattles, replace it.	✔	✔
Water is wet; fire is not wet.		
Staring at the sun hurts the eyes.		
The max speed is 60 mph.		

52. An algorithm should output "OK" if a list's numbers are all non-zero, else the output is "Not OK."

Which test is a valid test of the algorithm?

	YOUR ANSWER	CORRECT ANSWER
Input 0, 0, 0. Ensure output is "OK."		
Input 5, 4, 0. Ensure output is "OK."		

	YOUR ANSWER	CORRECT ANSWER
Input 99, 0, 5. Ensure output is "Not OK."	✔	✔

✔ 53. **What is put to output by the following flowchart, if the input is 17?**

Main

Variables

0	x integer

Start

x = Get next input

x < 10 — TRUE → Put "Too young" to output

FALSE

x < 20 — TRUE → Put "OK" to output

FALSE

Put "Too old" to output

End
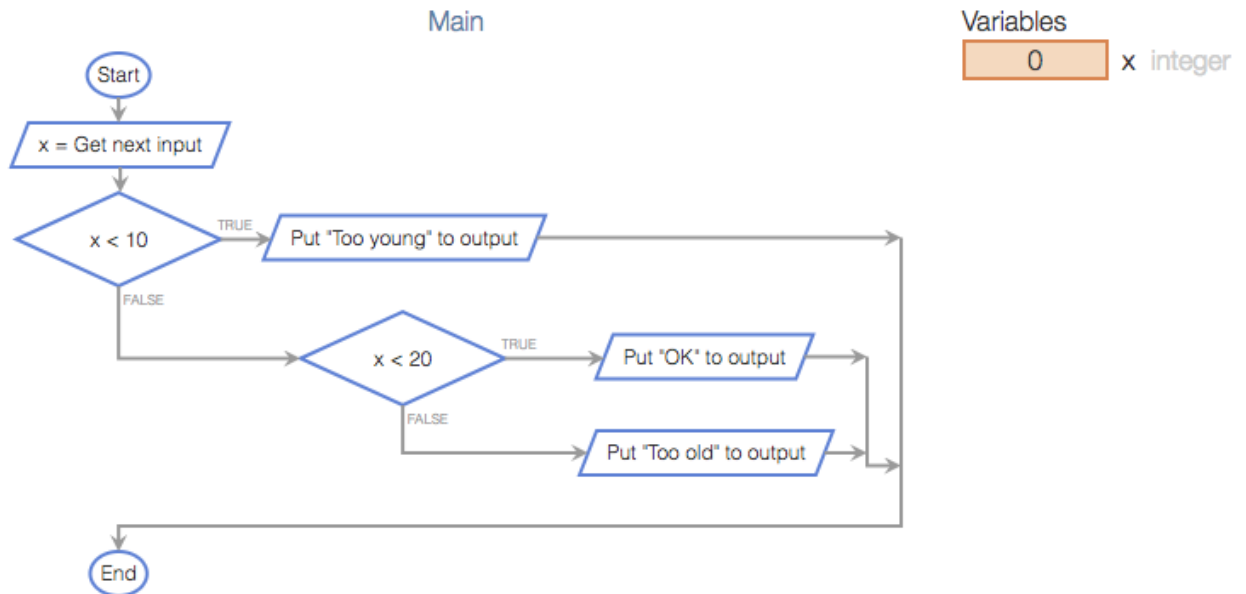
	YOUR ANSWER	CORRECT ANSWER
Too young		
OK	✔	✔
Too old		
Nothing is put to output.		

54. **What is put to output by the following flowchart, if the input is 3 5 -1?**

Main

Variables

| 0 | x integer |
| 0 | y integer |

Start

x = Get next input

x > 0 — TRUE → y = 2 * x

FALSE

Put y to output

Put " " to output

x = Get next input

End
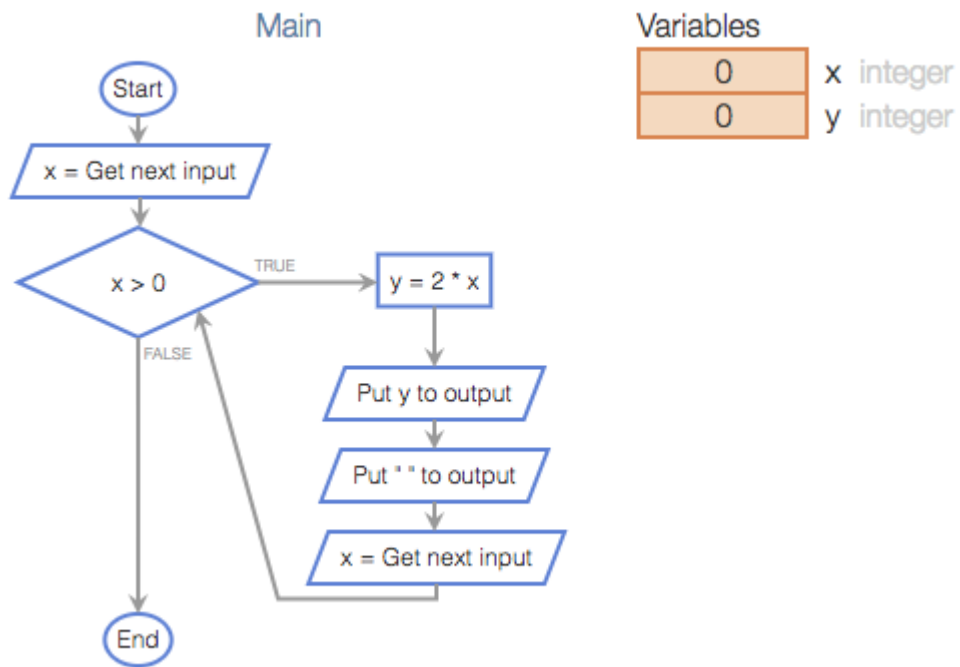
	YOUR ANSWER	CORRECT ANSWER
3 5 -1		
3 5		
6 10	✔	✔
6 10 -2		

55. **What is the purpose of the following class diagram?**

Employee

+ name : string
- id   : integer
+ title   : string

△

HourlyEmployee

+ hourlyRate : float
+ maxHours   : integer
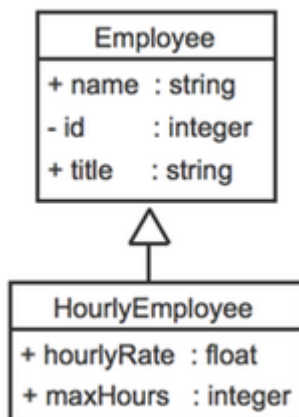
	YOUR ANSWER	CORRECT ANSWER

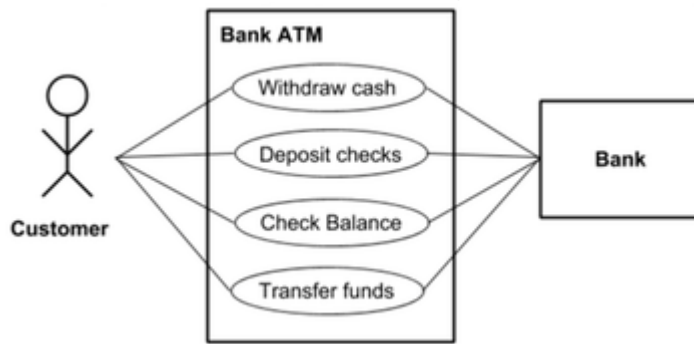|	YOUR ANSWER	CORRECT ANSWER

Describes the execution flow of the Employee class' operations

Specifies the Employee class' behavioral requirements

Depicts the Employee class' name, data members, and functions — ✔ ✔

56. What is the purpose of a use case diagram, such as the following diagram?

	YOUR ANSWER	CORRECT ANSWER

Describes how a user can interact with a program — ✔ ✔

Describes the data used in the program

Illustrates the flow of the program's algorithms

Shows the interaction between program components

57. Which elements are characteristic of a class diagram?

	YOUR ANSWER	CORRECT ANSWER

System's classes, attributes, and methods and their features, constraints, and relationships — ✔ ✔
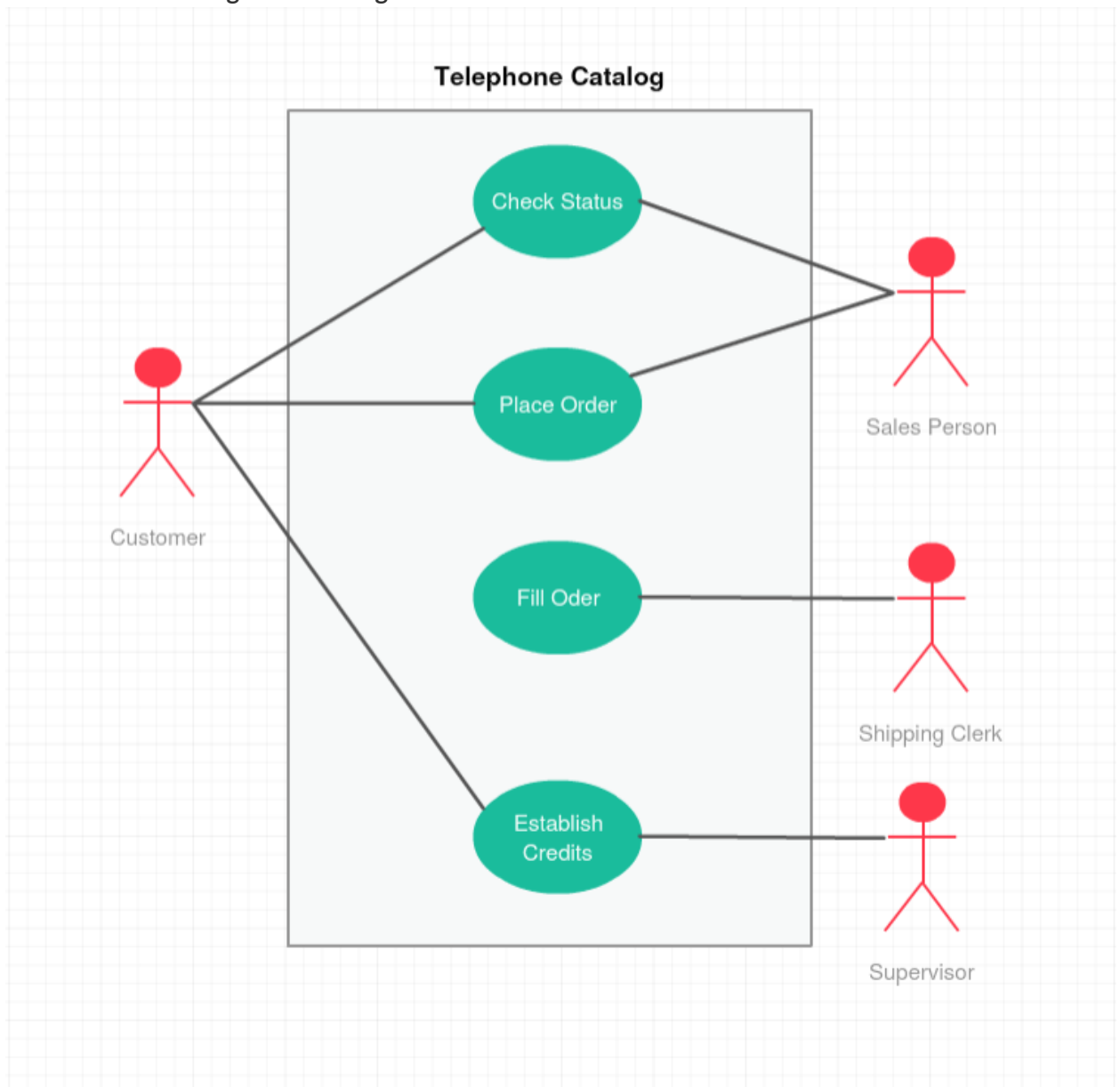
Flow of logic and process interaction within a system

Physical resources or logical architecture of a system

Internal structure of a class and collaboration between classes or instances

58. **Review the following use case diagram:**

Telephone Catalog

What does a use case diagram do?

	YOUR ANSWER	CORRECT ANSWER
Diagrams a single use case		
Connects several use cases to class diagrams		
Provides an overview of several use cases	✔	✔
Lists use case goals		

59. Which phase of a waterfall approach would create a sequence diagram that specifies the required

	YOUR ANSWER	CORRECT ANSWER
Analysis		
Design		✔
Implementation		
Testing	✔	

60. Which phase of an agile approach would define a hypothesis to find a problem in a program?

	YOUR ANSWER	CORRECT ANSWER
Analysis		
Design		
Implementation		
Testing	✔	✔

61. Which phase of an agile approach would create an executable program?

	YOUR ANSWER	CORRECT ANSWER
Analysis		
Design		
Implementation	✔	✔
Testing		

62. Which phase of an agile approach would create a list of components needed to build an online auction site?

	YOUR ANSWER	CORRECT ANSWER
Analysis		
Design	✔	✔
Implementation		

Testing		

63. Which phase of a waterfall approach defines a program's goals?

	YOUR ANSWER	CORRECT ANSWER
Analysis	✔	✔
Design		
Implementation		
Testing		

64. After a programmer is done writing a program, another person runs the program hundreds of times, each time with different input, checking that each run yields correct output.

Which phase of a waterfall approach is the person carrying out?

	YOUR ANSWER	CORRECT ANSWER
Analysis		
Design		
Implementation		
Testing	✔	✔

65. A programmer decides a program should convert U.S. units to metric units and decides to write the program in C++ using several functions.

Which phase of a waterfall approach is occurring when the programmer starts writing the program?

	YOUR ANSWER	CORRECT ANSWER
Analysis		
Design		
Implementation	✔	✔
Testing		

66. A company has a new project it wishes to implement to track and analyze employee and customer interactions. The company leadership determines that the system should support direct data entry as well as automated data capture of phone calls and emails.

Which phase of the waterfall process is occurring?

	YOUR ANSWER	CORRECT ANSWER
Analysis	✔	✔
Design		
Implementation		
Testing		

67. A programmer shows a program's first version to a customer. The customer provides feedback, which causes the programmer to change the goals of the program.

In which phase of an agile approach are goals changed based on customer feedback?

	YOUR ANSWER	CORRECT ANSWER
Analysis	✔	✔
Design		
Implementation		
Testing		

68. A programmer shows a program's first version to a customer. Based on feedback, the programmer begins writing a second version of the program.

In which phase of an agile approach does the writing of a second version of the program occur?

	YOUR ANSWER	CORRECT ANSWER
Analysis		
Design		
Implementation	✔	✔
Testing		

69. **A programmer shows a program's first version to a customer. Based on feedback, the programmer creates a second version, and then has a colleague run the second version on numerous inputs to ensure outputs are correct.**

Which phase of an agile approach is that colleague carrying out?

	YOUR ANSWER	CORRECT ANSWER
Analysis		
Design		
Implementation		
Testing	✔	✔

70. **A programmer is currently programming the fourth version of a program. Each version has additional features to satisfy more customers.**

In which phase of an agile approach does the programming of the fourth version occur?

	YOUR ANSWER	CORRECT ANSWER
Analysis		
Design		
Implementation	✔	✔
Testing		