Unit 2 – ICD2O – App Lab, Variables & Networks

Sample Test: Friday March 6, 2026

Name: Gorski

Total	%	Knowledge	Communication	Application	Thinking
(90)	(100)	(25)	(24)	(20)	(21)

Knowledge

1. Identify the piece of the AppLab interface used for each of the following: /5

(a)	Choosing the widget's colour on the screen.	Design Mode	Coding Editor	Run Mode
(b)	Moving the widget's position on the screen.	Design Mode	Coding Editor	Run Mode
(c)	Choosing the sound to put in the playSound block.	Design Mode	Coding Editor	Run Mode
(d)	Typing in a noun into a MadLibs prompt.	Design Mode	Coding Editor	Run Mode
(e)	Clicking on a button to see what it does.	Design Mode	Coding Editor	Run Mode

2. Which of the following are valid widget IDs? (put an ✓ if valid and an × if incorrect). /4

house_keeping ✓	Back up × (space)	var@ble × (special character)	printer4paper ✓

3. Classify each piece of input with the most appropriate type (text or number) /6

(a)	Alpha Go	text	(c)	OS	text	(e)	(905) 451-2860	text
(b)	1.1345	number	(d)	-8	number	(f)	L6Y 1Z4	text

4. Fill in the types: prompt or promptNum. /2

```
var year = promptNum ("What year is it? ");
var verb = prompt    ("Enter a verb: ");
```

5. The screen has been shown before (left) and after (right) the middle button was pressed. Answer the following questions. /8

(a)	How many labels on the screen?	1
(b)	How many buttons on the screen?	3
(c)	How many images on the screen?	1
(d)	How many radio buttons?	0
(e)	How many widgets on the screen?	5
(f)	How many things change?	1
(g)	How many onEvent blocks are needed?	3
(h)	How many widgets need a meaningful id?	4

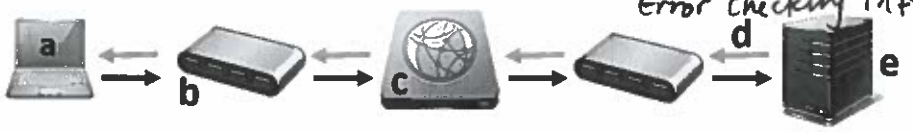
Image
Button
Button
Button
Label

Communication

6. Identify the term using the description. /7

Widget	(a)	A piece of a graphic user interface. e.g. Label, Button.
Variable	(b)	A named space in RAM that has a type.
Backup	(c)	Making a second copy of a file in another location.
Keyboard Shortcut	(d)	Pressing two keys on the keyboard to select an option quickly.
Housekeeping	(e)	Keeping your computer in good working order.
Binary Tree	(f)	A type of a graph where each node has a maximum of 2 children,
Sequence Number	(g)	One item in a packet header. Also: Destination IP address, Sender IP address, Error checking info

7. Identify these pieces of the internet. /5



(a) Computer that connects to the internet.	(b) Hardware directing internet packets.	(c) Companies providing internet connection.	(d) A type of internet cable.	(e) A large computer on the internet providing files.
Client	Router	ISP	Fibre Optic (also Copper wire)	Server

8. Fill in the blanks in the Mad Libs story after looking at the output below. /7

Prompts: (answers in italics)

Enter a noun: *peacock*	Enter an article of clothing: *shoe*
Enter another noun: *bathtubs*	Enter a food: *soy sauce*
Enter a liquid: *dishsoap*	Enter a body part: *arm*

Code:

```
onEvent("enter", "click", function(event) {
var noun = prompt ("Enter a noun: ");
var noun2 = prompt ("Enter another noun: ");
var liq = prompt ("Enter a liquid: ");
var cloth = prompt ("Enter an article of clothing: ");
var food = prompt ("Enter a food: ");
var body = prompt ("Enter a body part: ");

var words = "The Beach \n";
words = words + "When you go to the beach, bring a " + noun;
words = words + ", a thermos full of "+ liq +" and a couple ";
words = words + "of folding " + noun2 +". You should also ";
words = words + "have a big "+ cloth +" to cover your "+ body;
words = words + ". Also, bring "+ food +" for lunch.";
setText("answer", words);
});
```

use variables

9. Support this with a specific example: "BFS is useful because it searches its neighbours first." /2

...For example, Google Maps & GPS systems find routes using Dijkstra's algorithm, which is a Breadth-First-Search.

10. Provide two reasons this file name is ineffective: "binary tree test.doc" (also no version or year info) /2

(a) It has spaces. Use camel case instead.

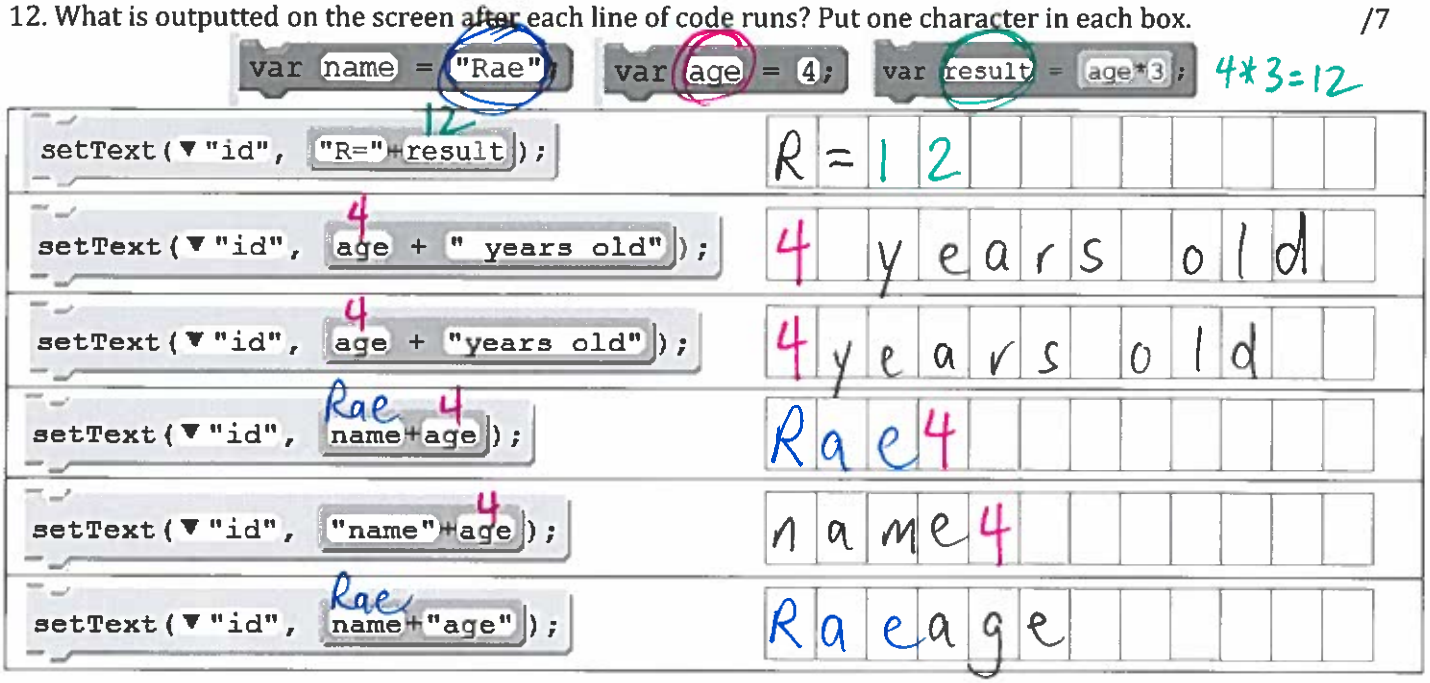
(b) It doesn't alphabetize nicely; use a number in front for order.

11. Why do things that change on the applab screen need a meaningful id? /1

Because they will appear in the code and we want the code to be easy to read.

Application

12. What is outputted on the screen after each line of code runs? Put one character in each box. /7



13. Look at the following program about a square based prism:

```
onEvent("enter", "click", function(event) {
  var S = promptNum ("Enter the side: ");
  var H = promptNum ("Enter the height: ");
  var Total = S ^ 2 * H;
  setText("answer", "Volume = " + Total);
});
```

a) If you entered 3 for S and 5 for H, what appears in 'answer'? /5

Volume = 45

b) How many variables?

3

c) Identify all variable names.

S, H, Total

don't include the var

14. The relationship between rabbits (R) and carrots (C) and eagles (E) is: $E = \frac{C^2}{R}$

Write code to find the number of eagles. /8

use above to help

(a) Start the onEvent block

onEvent("enter","click", function(event) {

(b) Get input for the rabbits (R) and carrots (C).

var R = promptNum("Enter the rabbit number:");
var C = promptNum("Enter the carrot number:");

(c) Figure out the amount of eagles. The formula is above.

var E = C^2 /R;

(d) Print out the number of eagles in the label 'answer'.

setText("answer", "The number of eagles is "+ E);

(e) Close the onEvent block

});

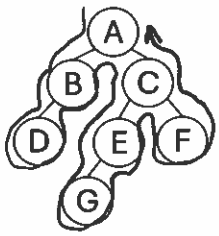
Thinking

15. Answer these questions about Binary Trees. /8

(a) Trace the flood fill with numbers. (1 for first cell, 2 for second layer)

1	1	2	3	4
1	1	2		4
2	2	2		5
3				6
4	4	5	6	7

(b)



Trace the following searches.

DFS: A B D C E G F

BFS: A B C D E F G

(c) Find the following in the tree to the left.

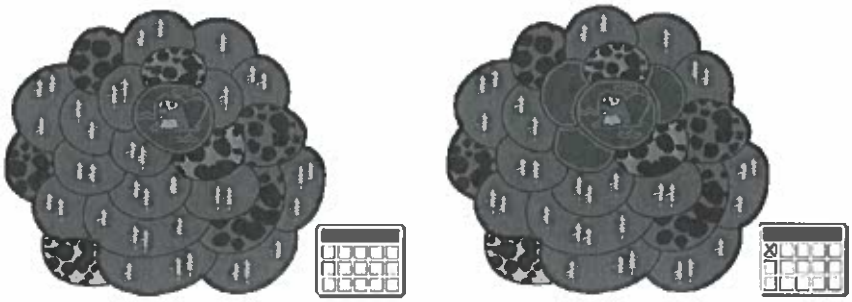
Root?	A
A leaf?	D, G, F (one of)
Sibling of C?	B
Parent of G?	E

16. Circle **and correct** 5 errors in the following piece of code. /5

```
onEvent("enter", "click", function(event){
    var base = prompt("what is the side length? ");
var sq = base * base;
    setText("LBLsquare", "Square Area: " + sq + "sq");
});
```

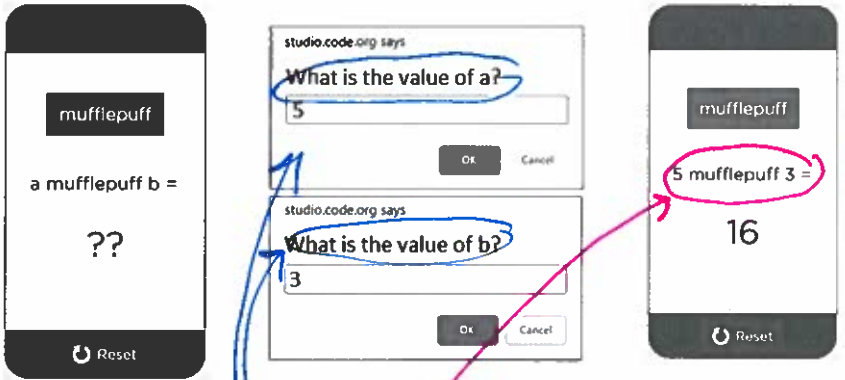
(Num; ; ; + sq (no quotes))

17. Every day, beavers flood all fields with trees that are next to the lake or flooded fields. Fields with stones are not flooded. For example, after one day, three fields will be flooded, as shown. After how many days in total will all the fields with trees be flooded? (circle)



(A) 4 days (B) 5 days (C) 6 days (D) 7 days /2

18. Fill in the blanks to code the onEvent.



More examples of the "mufflepuff" mathematical function follow:

- 2 mufflepuff 3 = -5
- 6 mufflepuff 4 = 20
- 1 mufflepuff 0 = 1
- 1 mufflepuff 1 = 0
- 23 mufflepuff 2 = 525
- 5 mufflepuff 2 = 21
- 3 mufflepuff 1 = 8

/6

```
onEvent("mufflepuff", "click", function(event) {
    var a = promptNum("What is the value of a?");
    var b = promptNum("What is the value of b?");
    setText("question", a + "mufflepuff " + b + " =");
    var ans = a^2 - b^2 ;
    setText("answer", ans);
});
```