

Event-Driven Programming & Debugging

Name: _____ Period: _____ Date: _____

Objectives

- Explain what a program and a code segment are, and how sequential statements run (CRD-2.B, AAP-2.B).
- Distinguish sequential flow from event-driven flow in App Lab (CRD-2.C.5).
- Read App Lab (JavaScript) event handlers and predict their behavior (AAP-2.B).
- Identify syntax, logic, and run-time errors, and use test cases to check correctness (CRD-2.I, CRD-2.J).

Directions: Code below is written in App Lab (JavaScript), the environment you use on Code.org. Read carefully before answering.

Section 1: Programs and Statements

1. Define **program** and **code segment**.

2. What does it mean for statements to run **sequentially**?

3. Trace this sequential code. Write exactly what appears in the console.

```
console.log("Start");  
var total = 5 + 3;  
console.log(total);  
console.log("Done");
```

Answer: _____

Section 2: Sequential vs. Event-Driven

In **event-driven** programming, some statements run only when triggered by an event (a click, a key press, the program starting) rather than in top-to-bottom order.

4. In App Lab, an `onEvent` handler ties a UI element to an event. In the code below, when does the `console.log` run — immediately, or only when something happens?

```
console.log("Program started");
onEvent("goButton", "click", function() {
  console.log("Button was clicked");
});
```

5. List two different **events** that could trigger code in an app.

Section 3: Reading App Lab Code

Predict the behavior of each handler.

6. A screen has a text input "nameBox", a button "greetBtn", and a label "output". What does this app do when the user types Sam and clicks the button?

```
onEvent("greetBtn", "click", function() {  
    var name = getText("nameBox");  
    setText("output", "Hello, " + name + "!");  
});
```

7. What appears in "output" if the user clicks the button *without typing anything* (the box is empty)?

Section 4: Documentation & Comments

8. What is a **comment**, and does it affect how the program runs?

9. Add a one-line comment to this code segment describing what it does.

```
onEvent("resetBtn", "click", function() {  
    setText("score", "0");  
});
```

Section 5: Debugging

Three error types: **syntax** (rules of the language broken), **logic** (runs but behaves incorrectly), **run-time** (occurs during execution).

10. Classify each as syntax, logic, or run-time:

- (a) The program uses `setText("out" "hi");` — a comma is missing. _____
(b) A tip calculator multiplies by 0.10 when it should multiply by 0.15; it runs but the tip is wrong. _____
(c) The program divides by a value that turns out to be zero while running. _____

11. Name two effective ways to find and correct errors in a program.

12. You wrote an app that should work for any typed number. Give one **test case** (an input and the expected output) you would use to check it, including a value at an extreme.