

3. WRITTEN RESPONSES

3 a.

3.a.i.

The overall purpose of this program is to tell the user how many hours of music they've listened to in a week based on the numbers they've inputted.

3.a.ii.

The video shows how the user can input a certain number of hours and click the add button so the number will be added to the total number of hours they have listened to that week.

3.a.iii.

The inputs of the video are each time the user types and adds a number and the output is the number the code calculates and puts on the screen as well as the message that comes up only when the total number of hours is greater than 27.

3 b.

3.b.i.

```
.....
.....
.....
appendItem(hours, getNumber("inputHours"));
.....
```

3.b.ii.

```
function findTotal(hours) {
  var total = 0;
  for (var i = 0; i < hours.length; i++) {
    total = total + hours[i];
    setText("totaloutput", "You've listened to " + (total + " hours of music this week"));
    if (total > 27) {
      setText("iftotal>27", "Wow! You've already listened to more music than the average person per week! ");
    }
  }
}
}
```

3.b.iii.

The name of the list is *hours*

3.b.iv.

The data in the hours list represents each hour amount the user inputs by using the add button.

3.b.v.

The hour list manages complexity because it allows any number of inputted hours to be stored in the list instead of using individual variables for each time the user wants to add to the lists. Without the list, a variable would have to be created for every number possibility the user could type and then an if statement for each of those numbers. This would result in an incredibly large amount of code compared to the only 15 lines of code used for this algorithm.

3 c.**3.c.i.**

```
function findTotal(hours) {
  var total = 0;
  for (var i = 0; i < hours.length; i++) {
    total = total + hours[i];
    setText("totaloutput", "You've listened to " + (total + " hours of music this week"));
    if (total > 27) {
      setText("iftotal>27", "Wow! You've already listened to more music than the average person per
week! ");
    }
  }
}
```

3.c.ii.

```
onEvent("addButton", "click", function( ) {
  appendItem(hours, getNumber("inputHours"));
  findTotal(hours);
})
```

3.c.iii.

The function is necessary in order to calculate the total number of hours of music the user has listened to and tell the user they've listened to more music than the average person per week if their total is greater than 27.

3.c.iv.

First, when the function is called, it creates a variable called "total" and sets it to 0. The function also includes the parameter

hours to allow an input to be used in the function. Then, using a for loop to go through every item in the empty list *hours*, if the inputted hour number is equal to the hours at the specific index it becomes the new total. The text is then set to explain the number of hours the user has inputted. An If statement is then used, if the total is larger than 27 then another set text is used in order to display that the user has listened to more than the average amount of music listened to per week.

3 d.**3.d.i.**

First call:

The user adds the numbers 5,1,7,3,2,1 and 4 to represent the total hours they've spent listening to music.

Second call:

The user adds the numbers 6,4,9,5,3,2, and 5 to represent the total hours they've spent listening to music.

3 d.ii.

Condition(s) tested by first call:

For the first call, the function will calculate the numbers 5,1,7,3,2,1, and 4, and find that the total is 23 hours. The if statement then checks to see if the total is greater than 27. In this call, the number isn't greater than 27, so no text will appear other than the total.

Condition(s) tested by second call:

For the second call, the function will calculate the numbers 6,4,9,5,3,2, and 5 and find that the total is 29 hours. The if statement then checks to see if the total is greater than 27. In this call, the number is greater than 27, so the total will appear as well as a new text that says "Wow! You've already listened to more music than the average person per week!"

3.d.iii.

Results of the first call:

After the for loop finishes running, the user will see "You've listened to 23 hours of music this week" in the first text area.

Results of the second call:

After the for loop finishes running, the user will see "You've listened to 29 hours of music this week" in the first text area and "Wow! You've already listened to more music than the average person per week!" in the second text area.