

Component C. Personalized Project Reference.

Procedure:

i.

```
52 ▾ function mergeLeft(row) {  
53     var nonEmpty = [];  
54 ▾   for (var i = 0; i < 4; i++) {  
55     |   if (row[i] != 0) {  
56     |   |   appendItem(nonEmpty, row[i]);  
57     |   }  
58     }  
59  
60     var newRow = [];  
61     var x = 0;  
62 ▾   while (x < nonEmpty.length) {  
63     |   if (x < nonEmpty.length - 1 && nonEmpty[x] == nonEmpty[x + 1]) {  
64     |   |   appendItem(newRow, 2 * nonEmpty[x]);  
65     |   |   x += 2;  
66     |   } else {  
67     |   |   appendItem(newRow, nonEmpty[x]);  
68     |   |   x += 1;  
69     |   }  
70     }  
71  
72 ▾   while (newRow.length < 4) {  
73     |   appendItem(newRow, 0);  
74     }  
75  
76     return newRow;  
77 }
```

ii.

```
108 ▾ function moveLeft(game) {  
109     var newMove = [];  
110 ▾   for (var i = 0; i < 4; i++) {  
111     |   var newRow = mergeLeft(game[i]);  
112     |   appendItem(newMove, newRow);  
113     |   }  
114     return newMove;  
115 }
```

List:

i.

```
1  var game = [];  
2  var score = 0;  
3  var highScore = 0;  
4  
5  
6  function blankSlate() {  
7      game = [];  
8      score = 0;  
9      for (var i = 0; i < 4; i++) {  
10         var newRow = [];  
11         for (var j = 0; j < 4; j++) {  
12             var boxId = "box" + j + i;  
13             setText(boxId, "");  
14             appendItem(newRow, 0);  
15         }  
16         appendItem(game, newRow);  
17     }  
18     return game;  
19 }
```

ii.

```

203 ▾ function displayGame() {
204     score = 0;
205 ▾     for (var y = 0; y < 4; y++) {
206 ▾         for (var x = 0; x < 4; x++) {
207             var boxId = "box" + x + y;
208             setProperty(boxId, "font-size", 30);
209 ▾             if (game[y][x] > 10) {
210                 setProperty(boxId, "font-size", 15);
211 ▾                 if (game[y][x] == 512) {
212                     setScreen("home");
213 ▾                     if (score > highScore) {
214                         highScore = score;
215                         setText("hScore", "High Score: " + highScore);
216                     }
217                 }
218             }
219             setText(boxId, "");
220             var value = game[y][x].toString();
221 ▾             if (value !== "0") {
222                 setText(boxId, value);
223                 score += game[y][x];
224             }
225         }
226     }
227     setText("currentScore", "Score: " + score);
228 }
229 game = blankSlate();
230 nextTiles(game);
231 nextTiles(game);
232 displayGame();

```