Lesson 10

Lesson Overview

This is a collaborative lesson and a design based assessment. Students will be constructing a simple guessing game program that will run using all the techniques they have learned so far. They will also learn the importance of research and collaboration with other students.

Activity

Inform the students that they will be broken into pairs and working on developing a game where the computer picks a number and the user tries to guess it. Before you break them into groups, have the students brainstorm on the different things the program must be able to do. They are as follows to help guide your responses:

```
(1) Pick a number between 1 and 100
(2) Print program title and give some instructions
(3) Ask for the user to guess number
(4) Tally the guess
(5) If the guess is right go to step (9)
(6) If the guess is too low tell the user to guess higher
(7) If the guess is too high tell the user to guess lower
(8) Go back to step (3)
(9) Beep and tell the user how many guess it took to win
(10) Ask the user whether to play again
(11) If the user answers yes then clear the guess tally and goto step (1)
(12) Give the user instructions on how to close the game window
(13) End the program
```

The students have just written *pseudocode* with this which is a basic barebones outline of how the program will go. Now they just need to put it into the specific language. In their pairs, students should work on developing the system. When they run into problems, it is important for them to utilize their design notebook as well as research sources like Google to help them construct it.

The one bit of information that needs to be covered is the rnd () and int () functions. Rnd () picks a number above 0 and less than 1 while the int () function removes the decimal point and rounds up the random number. We can multiple rnd () by 100 to increase the range from 0 to 100. However, with the int () and rnd (), the highest number we can get to is 99.999999 when we multiple by 100.

Thus we have to add 1 to the count. Give the students this line of code to start the program:

```
[start]
guessMe = int(rnd(1)*100)+1
```

This is new tools to them but the rest of the process should fall under the tools they have. They may also wish to clear the screen. This is done by simply typing *cls* into the compiler. Assist them where need be and refer to the complete code list in back of this labeled “HIGH LOW PROGRAM”.