**Lesson 16: Boe-Bot Input/Output**

Needed

* Boe-Bot
* Computer with PBASIC
* USB cable

Earlier we talked about the use of inputs to create a desired output through the Boe-Bots. This class will expand upon that knowledge and use keyboard button as a input to make the Boe-Bot output motion of the servos. Boe-Bot motion is not a new concept, neither is the use of inputs to create an output. We, now, just need to formalize the program in order to make a strike on the keyboard to cause the Boe-Bot move.

Activity:

Have the students use an IF…THEN…ELSEIF…THEN…ENDIF statements to make a keyboard stroke cause the Boe-Bot to move in various motions. Have them program the Boe-Bot to adhere to the following chart.

|  |  |
| --- | --- |
| **Input (key stroke)** | **Output (motion)** |
| a | Full Speed Forward |
| b | Full Speed Reverse |
| c | Left Turn |
| d | Right Turn |

A few hints to get started:

1. Students will need to define variables
   1. One variable may represent the variability in which key is pressed.
   2. Another variable can be the variability in the time that the motion of the Boe-Bot elapses to complete the task.
2. A DEBUGIN command will be used. In the past we have used the DEBUG screen to display information. This differs, however, in that we are now inputting information, thus DEBUGIN.
3. Declare the information input in the DEBUG screen as a string or sequence of symbols by typing in the program STR after DEBUGIN.
4. Once the STR is declared, you also have to write into the program that x will be represented by what size of string. In this program each letter will represent a different means of motion. Therefore the string value is 1 and will be written after STR as “the variable assigned to the key at the beginning of your program”/1.
5. Example: if I defined my key stroke variable as x and my time variable as counter the beginning of my program will look like (notice I started the DO…LOOP for the program prior to typing DEBUGIN):

x VAR Byte

counter VAR Word

DO

DEBUGIN STR x\1

Students should be able to take it from here. If time permits have the students compete to complete a task like using keyboard inputs to navigate around a book.

Solution:

