Are you scared of Robots? Well I’m sorry to say, you should be! Unless that is, you know how to program them to do your bidding.

Start a new program in the FUZE BASIC Editor and enter the code below. When you run it you will be able to control two of the robot arm’s limbs.

```
CLS
FONTSIZE (4)
INK = RED
PRINT "We are the ROBOTS!"
INK = WHITE
PRINTAT (0, 2); "Press keys to control"
INK = YELLOW
PRINTAT (0, 4); "Left or Right for Body"
PRINTAT (0, 5); "Up or Down for Shoulder"
LOOP
  IF SCANKEYBOARD (SCANLEFT) THEN
    ARMBODY (1)
  ELSE
    IF SCANKEYBOARD (SCANRIGHT) THEN
      ARMBODY (-1)
    ELSE
      ARMBODY (0)
    ENDIF
  ENDIF
  IF SCANKEYBOARD (SCANUP) THEN
    ARMSHOULDER (1)
  ELSE
    IF SCANKEYBOARD (SCANDOWN) THEN
      ARMSHOULDER (-1)
    ELSE
      ARMSHOULDER (0)
    ENDIF
  ENDIF
UPDATE
REPEAT
```

If you get an error stating “unable to find Robot Arm” or similar then exit FUZE BASIC by typing EXIT in immediate mode then press ENTER. Check that the robot is plugged into a USB port on the back of the FUZE and make sure it’s switched on. Then restart FUZE BASIC.

Enter and RUN the program on the left. Once again, this is a lot of code so you need to be careful not to make any mistakes. However, they should be easy to fix so if you do get an error, try to correct it.

Our code starts by setting up our font size and colours we want to use to show the instructions to control the robot on screen.

Notice the PRINTAT command. This allows us to position our text exactly where we want it by setting the (X, Y) position.

The main LOOP however, introduces a very useful statement with SCANKEYBOARD. This is a great command to check for keys being pressed.

First we check to see if a specific key is being pressed. In this case we start with the LEFT cursor key. If it is pressed then we start the robot’s body moving to the left if it is not being pressed but the RIGHT cursor is, then we start moving to the right but if neither the LEFT or RIGHT key is pressed then send an off signal to the robot’s body motor.

Then we do the same for UP and DOWN.

ADVANCED CHALLENGE:
How about adding controls for the rest of the robot’s limbs. Notice how each one above has its own section of code beginning with IF SCANKEYBOARD (SCANkey) THEN ...

The SCANKEYBOARD function can be used to detect any key on the keyboard so if you wanted to use PAGEUP or PAGEDOWN for example you could change SCANDOWN to SCANPAGEUP or SCANPAGEDOWN.

SEE OVERLEAF FOR THE FULL LIST OF SCANKEY CODES
The following Robot Arm commands can be used to control different limbs. Note that a ‘1’ sets the limb moving in one direction whereas a ‘-1’ will set it moving in the opposite one. A ‘0’ is used to stop it moving.

**ARMBODY (x)**  x can be 1, -1 or 0

**ARMSHOULDER (x)**  x can be 1, -1 or 0

**ARMBELT (x)**  x can be 1, -1 or 0

**ARMWRIST (x)**  x can be 1, -1 or 0

**ARMGRIPPER (x)**  x can be 1, -1 or 0

**ARMLIGHT(x)**  x can be 1 or 0