' Robotics with the Boe-Bot - RomingwithIrandPhotoresisterbyus3.bs2

' Boe-Bot to detect using the infared and photorisistor.

' {$STAMP BS2}

' {$PBASIC 2.5}

DEBUG "Program is Ready To Run!"

'[ Variable for Ir]

irDetectLeft VAR Bit

irDetectRight VAR Bit

photoDetectLeft VAR Bit

photoDetectRight VAR Bit

pulseCount VAR Byte

counter VAR Nib

'[ Initialization ]

FREQOUT 4, 2000, 3000

'[ Main Routine for Ir]

DO

FREQOUT 8, 1, 45500

irDetectLeft = IN9

FREQOUT 2, 1, 45500

irDetectRight = IN0

IF (irDetectLeft = 0) AND (irDetectRight = 0)THEN

GOSUB Back\_Up ' Both IR pairs detect obstacle

GOSUB Turn\_Left ' Back up & U-turn (left twice)

GOSUB Turn\_Left

ELSEIF (photoDetectLeft = 0) AND (photoDetectRight = 0) THEN ' Both photoresistors detects

GOSUB Back\_Up ' shadow, back up & U-turn

GOSUB Turn\_Left ' (left twice).

GOSUB Turn\_Left

ELSEIF (irDetectLeft = 0) THEN ' Left IR pair detect

GOSUB BACK\_UP ' Back up & turn right

GOSUB Turn\_Right

ELSEIF (photoDetectLeft = 0) THEN ' Left photoresistor detects

GOSUB Back\_Up ' shadow, back up & turn right.

GOSUB Turn\_Right

ELSEIF (irDetectRight = 0) THEN ' Right IR pair detect

GOSUB Back\_Up ' Back up & turn left

GOSUB Turn\_Left

ELSEIF (photoDetectRight = 0) THEN ' Right photoresistor detects

GOSUB Back\_Up ' shadow, back up & turn left.

GOSUB Turn\_Left

ELSE ' Both IR pairs 1, no detects

GOSUB Forward\_Pulse ' Apply a forwards pulse

ENDIF ' and check again

LOOP

'[ Subroutines ]

Forward\_Pulse: ' Send a single forward pulse.

PULSOUT 13, 850

PULSOUT 12, 650

PAUSE 20

RETURN

Turn\_Left:

FOR pulseCount = 0 TO 20 ' Left turn, about 90-degrees.

PULSOUT 13, 650

PULSOUT 12, 650

PAUSE 20

NEXT

RETURN

Turn\_Right:

FOR pulseCount = 0 TO 20 ' Right turn, about 90-degrees.

PULSOUT 13, 850

PULSOUT 12, 850

PAUSE 20

NEXT

RETURN

Back\_Up:

FOR pulseCount = 0 TO 40 ' Back up.

PULSOUT 13, 650

PULSOUT 12, 850

PAUSE 20

NEXT

RETURN