

```
' {$STAMP BS2}
' {$PBASIC 2.5}
'Kelvin Mgbatogu
'05/27/2019
'
```

'Robot bumpers

'This program is designed to help the robot maneuver through its environment. If the robot hits something on its left side, it will reverse and move to the right and vice versa

```
temp VAR Byte 'temporary store
RunStatus DATA $00 'variable stored in ROM
READ RunStatus, temp 'Read the variable from ROM
temp = ~temp 'invert the value 0 to 1 or 1 to 0
WRITE RunStatus, temp 'Write the variable back to ROM
IF (temp>0) THEN END 'Check if the value is 1 IF so END the program
'
```

'Variable declaration

```
x VAR Word 'initializes the variable x with a size of a word
rmotor PIN 12 'initializes variable to hold the pin location of the left motor
lmotor PIN 13 'initializes variable to hold the pin location of the right motor
'
```

'Main code

```
DO
GOSUB forward 'Calls the forward subroot
IF(IN15=0)THEN 'Checks if pin 11 is giving a 0 (meaning the button is pressed)
GOSUB reverseRight 'Calls the right reverse subroot
ENDIF
IF(IN14=0)THEN 'Checks if pin 10 is giving a 0 (meaning the button is pressed)
GOSUB reverseLeft 'Calls the left reverse subroot
ENDIF
IF(left=2)AND(right=3)THEN
GOSUB cornerRight
ENDIF
IF(left=3)AND(right=2)THEN 'checks if the robot is stuck in a corner and going back and forth
between either bumper
GOSUB cornerLeft
ENDIF
LOOP
'Subrootings
'
```

forward:

```
PULSOUT lmotor,850 'moves left servo forward
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```
PULSOUT rmotor,650 'moves right servo forward
RETURN
reverseRight:
FOR x=0 TO 10 'reverses straight
PULSOUT lmotor, 650
PULSOUT rmotor, 850
PAUSE 20
NEXT
FOR x=0 TO 15 'turns slightly to the right to avoid the obstacle
PULSOUT lmotor, 740
PULSOUT rmotor, 850
PAUSE 20
NEXT
RETURN
reverseLeft:
FOR x=0 TO 10 'reverses straight
PULSOUT lmotor, 650
PULSOUT rmotor, 850
PAUSE 20
NEXT
FOR x=0 TO 15 'turns slightly to the left to avoid the obstacle
PULSOUT lmotor, 650
PULSOUT rmotor, 760
PAUSE 20
NEXT
RETURN
cornerRight:
FOR x=0 TO 25 'turns all the way around to get away from the corner
PULSOUT lmotor,650
PULSOUT rmotor, 650
PAUSE 20
NEXT
RETURN
cornerLeft:
FOR x=0 TO 25 'turns all the way around to get away from the corner
PULSOUT lmotor,850
PULSOUT rmotor, 850
PAUSE 20
NEXT
RETURN
```