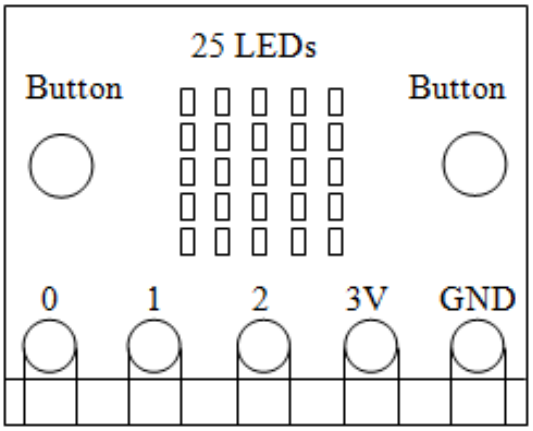
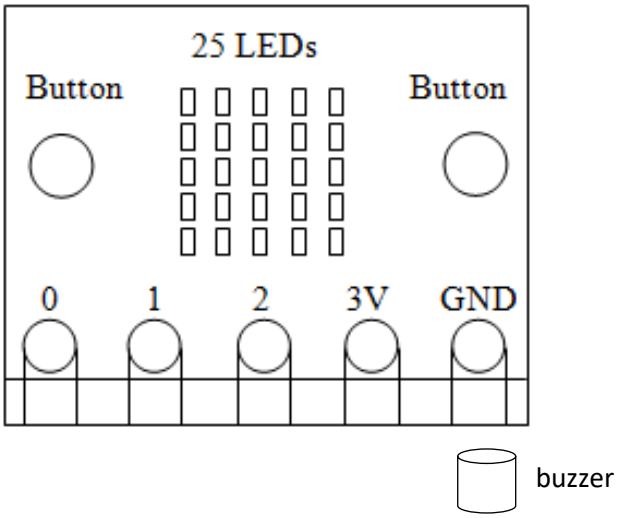
Embedded System Supplementary Exercise

1. Refer to the set up and the program below to answer the questions (a) and (b).

Remote Control



Score Keeper



Remote Control (Program)

```
On button B pressed
  Digital write pin P1 to 1
  pause (ms) (500)
  Digital write pin P1 to 0
```

Score Keeper (program)

```
On start
  Set score to (i)
  Show number score
  Analog set pitch pin P2

Forever
  If digital read pin P0 = (ii)
  Then  Change (iii) by 1
        Show number score
  Analog pitch 400 for 1000 ms
```

(a) Fill in the blanks (i) to (iii).

(i)		(ii)		(iii)	

(b) Draw three lines on the diagram to indicate how to connect the microbits and the buzzer.

2. Name the input sensors used in the following micro:bit programs:

Program A
On button B pressed
  Set level to light level
  Show number level

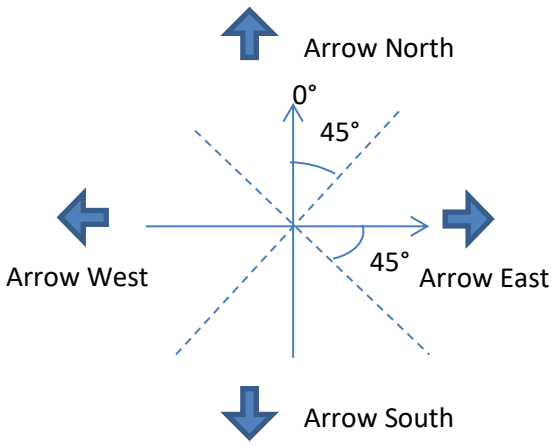
Program B
On shake
  Set x to pick random 0 to 9

Program C
Forever
  Set temp to temperature
  Show number temp

Program	Program A	Program B	Program C
Input sensor			

3. Fill in the blanks in the following program to simulate a compass by showing different arrows.

On button A+B pressed
  Calibrate compass
Forever
  Set degrees to compass heading
  If degrees < (i)
  Then show arrow North
  Else if degrees < (ii)
  Then show arrow East
  Else if degrees < (iii)
  Then show arrow South
  Else if degrees < (iv)
  Then show arrow West
  Else show arrow North



(i)		(ii)		(iii)		(iv)	

4. Fill in the blanks in the following programs to remotely control the score on the score keeper using the remote control.

Remote Control
On start
  Radio set group 100
On button B pressed
  (i)
  pause (ms) (500)
  (ii)

Score Keeper
On start
  Radio set group (iii)
  Set score to 0
  Show number score

On radio received (receivedNumber)
  if (iv)
    change score by 1
    show number score

(i)		(ii)		(iii)		(iv)	