Lesson 4: Finding your way

Computing

Sensing

Ben Hall

Task

Using selection (if… then…else…), make the micro:bit into a compass. It should display the direction the micro:bit is facing (N, E, S or W)

Variables

Name: *Heading*

Set by the compass heading

What will be displayed?

Circle which you will use.

Text Numbers Images

Describe them below

Continuously display the compass heading N, E, S or W.

Algorithm

1. Continuously check the compass heading

2. If the compass heading is less than 45°
   set the heading to North
   Display the heading

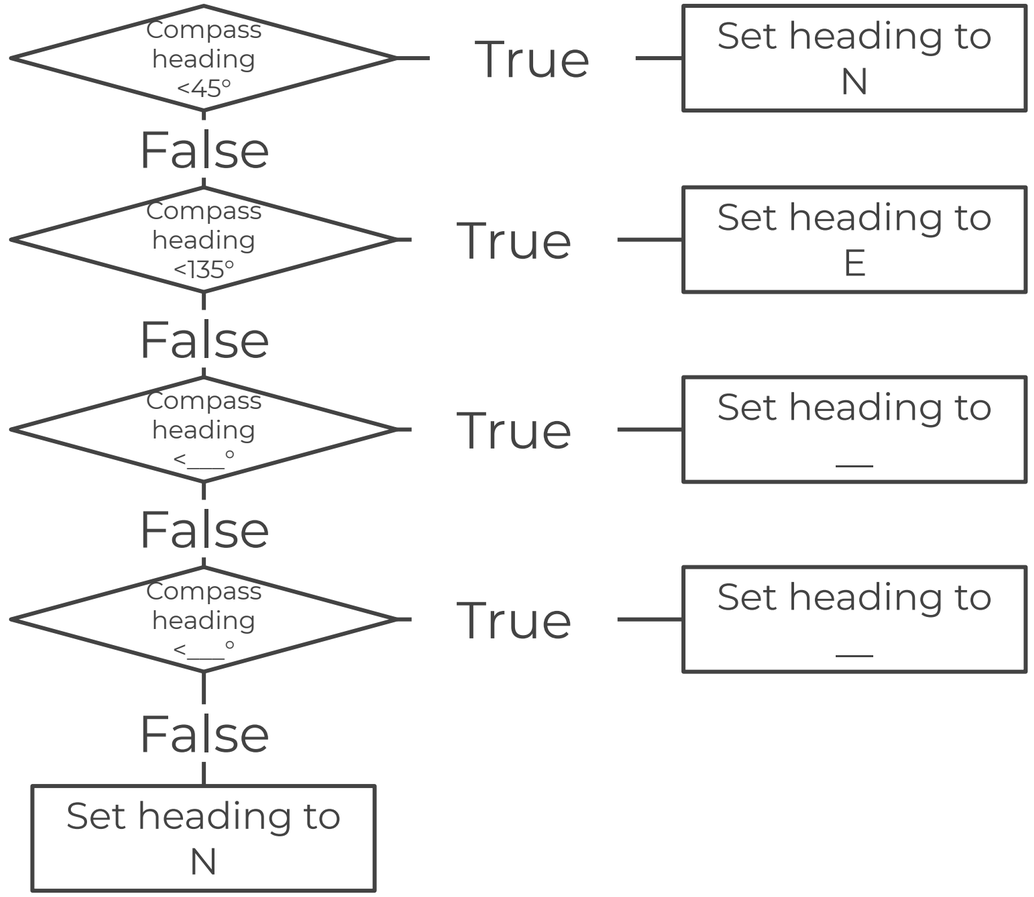
3. If the compass heading is less than 135°
   set the heading to East
   Display the heading

4. If the compass heading is less than ___°
   set the heading to ___
   Display the heading

5. If the compass heading is less than ___°
   set the heading to ___
   Display the heading

6. Otherwise, set the heading to North
   Display the heading

Program flow



Task

Using selection (if… then…else…), make the micro:bit into a navigational device. It should show when it is pointing North, and when it isn't which way to turn to get back to North.

Variables

Name: Heading

Set by the compass heading

What will be displayed?

Circle which you will use.

Text Numbers Images

Describe them below

Continuously display heading N or < or > if not heading North.

Algorithm

1. *Continuously check the compass heading*

2. *If the compass heading is less than 45° set the heading to North*
   Display the heading

3. *Check if the heading is less than 180°, if it is:*
   show <

4. *Check if the heading is less than 315°, if it is:*
   show >

5. *Otherwise, set the heading to North*
   Display the heading

Program flow