## Lesson 4 – Activity Sheet

## Getting Started

Plug in your micro:bit and copy out the program below, then download it to your micro:bit.

from microbit import \*

while True:

if button\_a.is\_pressed():

display.show(Image.HAPPY)

else:

display.show(Image.SAD)

display.clear()

You will notice that every time you press Button A the face changes to a happy face. We can also combine this with Button B to provide a different response. Try out the program code below.

from microbit import \*

while True:

if button\_a.is\_pressed():

display.show(Image.HAPPY)

elif button\_b.is\_pressed():

display.show(Image.SAD)

else:

display.show(Image.ASLEEP)

display.clear()

In this program it displays a sad face if Button B is pressed. This uses the **elif** code. The program also has an **else** statement which displays the ‘ASLEEP’ face when a button is not being pressed. Think of your micro:bit as asleep and you press Button A or B to wake it up, but it may be in a happy mood or a sad one!

Use the images from Lessons 2 or 3 to create your own individual responses. How about making the face always smile and pressing Button A to get it to look left and Button B to look to the right.

**Let’s Now Create a Silent Interview**

In this project you will give another student your micro:bit and ask them a set of questions, such as, ‘do you like cheese?’ ‘did you complete your homework?’ They answer each question by pressing one of the buttons on the micro:bit which will display their response. No need to talk and all answers are private.

First you will need to decide on your responses, what happens when Button A is pressed, Button B, or no buttons. You can also combine Button A and B, (see the Stretch Tasks)

Then use and adapt the programs below. You could replace the images with text responses, for example replace display.show(Image.HAPPY) with display.scroll("Yes")

while True:

if button\_a.is\_pressed():

display.scroll(“Yes”)

elif button\_b.is\_pressed():

display.show(Image.SAD)

else:

display.show(Image.ASLEEP)

display.clear()

## Success Criteria

1. An image or text appears when you press Button A
2. An image or text appears when you press Button B
3. You can use you micro:bit to respond to another students’ questions.
4. The micro:bit displays an image when NO buttons are pressed.
5. You combine the use of Button A and B

## Pro-tip

If you are using the Button A and B being pressed together then add this at the start of the program as the if statement.

if button\_a.is\_pressed() and button\_b.is\_pressed():

Ensure that the indentation levels are correct,

if something is True:

# do one thing

elif some other thing is True:

# do another thing

else:

# do yet another thing.

## Test Time

There is a lot of code here with a number of indentations required. Check the indentation is correct and that the program works as expected. Does each button press respond with the action you coded?

## Stretch Tasks

* Use a combination of images and text responses
* Use if button\_a.is\_pressed() and button\_b.is\_pressed(): to add a response to Button A and B being pressed
* Pair with another student and ask them to create questions that are displayed when a button is pressed. Ask them to display the questions and then you respond with your micro:bit, a truly silent interview

## Final Thoughts

You have just learned how to:

* Use selection to combine if, elif and else statements to respond to different button presses
* Created a program where the user can control to output buttons pressing buttons
* Selection can be used to add different responses to our program