

Micro:bit Project Sheet 12

Success Criteria

- Happy face displayed
- Count down 5 seconds
- Fire bullet over radio using button a
- If player hit sad face shown and lock micro bit

C++

```
main.cpp x
1 //MicroBit Russian Roulette
2 //D Burrin www.microbitsandbobs.co.uk
3 //4th May 2016
4
5 /*
6 1. Multi-player radio game - 2 or more players within 20ft
7 2. Start microbit and wait for count down
8 3. once you have taken you 5 seconds wait shoot with button A
9 4. If you are hit you die - sad face
10 5. winner is surviving player.
11 6. press reset to restart
12 */
13
14
15 #include "MicroBit.h"
16
17 MicroBit uBit;
18 //Global variables for dead\alive images
19 MicroBitImage dead ("0,0,0,0,0\n0,255,0,255,0\n0,0,255,0,0\n0,0,255,255,0\n0,255,0,0,255\n");
20 MicroBitImage alive ("0,0,0,0,0\n0,255,0,255,0\n0,0,255,0,0\n0,255,0,0,255\n0,0,255,255,0\n");
21
22 // on receipt of data
23 void onData(MicroBitEvent e)
24 {
25     ManagedString s = uBit.radio.datagram.recv();
26
27     if (s == "1")
28     {
29         //show dead face
30         uBit.display.print(dead);
31         //Kill Micro:bit by sticking in an endless loop
32         while(1)
33         {
34             //i'm doing nothing
35         }
36     }
37 }
38
```

```

39 //main program loop
40 int main()
41 {
42     //initialise counter
43     int counter = 0;
44     int time2wait = 0;
45
46     //count down on screen
47     for (counter = 5 ; counter >0 ; counter--)
48     {
49         uBit.display.print(counter);
50         uBit.sleep(1000);
51     }
52
53     while(1){
54         //Display Alive face
55         uBit.display.print(alive);
56
57         //bullet fired
58         if (uBit.buttonA.isPressed())
59         {
60             uBit.init();
61             uBit.radio.enable();
62             uBit.radio.datagram.send("1");
63         }
64         //bullet not fired
65         else{
66             uBit.init();
67             uBit.messageBus.listen(MICROBIT_ID_RADIO, MICROBIT_RADIO_EVT_DATAGRAM, onData);
68             uBit.radio.enable();
69             //randomize the time listening 0 to 1.5 seconds to mixup chance of being hit
70             time2wait = rand() % 1500;
71             uBit.sleep(time2wait);
72         }
73     }
74
75 }
```

Testing

- Test with 2 MicroBits first
- Countdown correct
- Both happy face
- Press button on A Bit A (might need to shoot more than once) does Bit B show sad face and lock
- Reset - press button A on Bit B (might need to shoot more than once) does Bit A show sad face and die
- Retest with multiple Micro bits for “volume testing”

Notes—

Code is downloadable from the website

