

# Printer Fixer

Portland Oregon

Parkrose Middle School

Made and presented by  
Bridger, Kevin and Brissa

## Problem statement

Melissa needs a faster way to call maintenance to fix the printer because it gets jammed often and it takes time out of her day.

## Objective

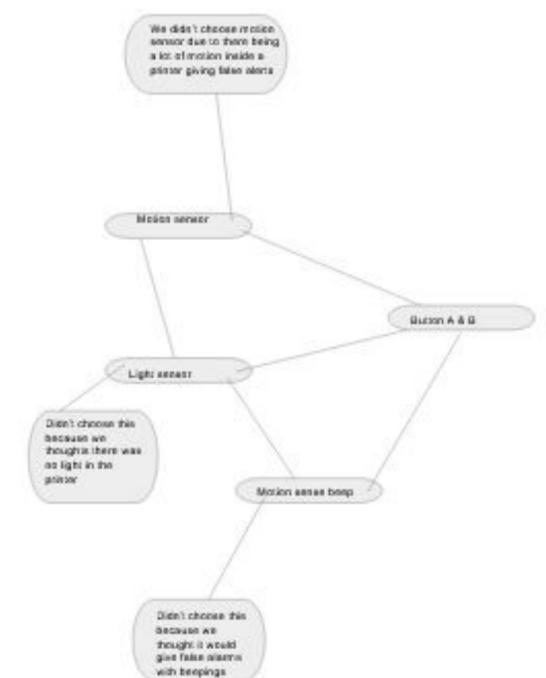
Our goal is to fix our client issue of alerting the I.T department in a way that did not take more time from our clients day and made it simple. The way we addressed the issue was to have a faster way to fix it. We coded the MicroBit to send a signal to a different micro bit located where the IT department is at. That way it would save time for our client who would need to find the phone number, call, and leave a voicemail.

## User Requirement

- A faster way to call maintenance to fix the printer
- Simple way to get the printer fix

## Design Process

- Motion sensor our first idea was a motion sensor to sense when it is jam. We scrapped that idea because we thought people would turn it on accidentally.
- Our second idea was a light sensor which would sense the the printer jamming because the paper would block the light making it dark.
- Our last idea is the one we chose which was a button a & b which when a person saw it jam. The person would press button a which would send a radio signal to maintenance aka button b



## Results

This will work if we can get a stronger radio signal that we can add the the micro bit and if we can get that it can make our clients job quicker so she will not have to call maintenance and she wont have to bother if they are not at the phone because if they will walk into the room they will see if flashing immediately

## Design iteration

1. We visioned a easy way to send a signal to a separate microbit using signals.
2. We coded the micro bit to send a radio signal to another microbit.
3. Then we realized the other microbit had to show something so we made it so the led lights would say printer when the microbit receives the signal
4. We also came acrost a problem where we could not stop the loop of it saying printer when maintenance seese the led lights and there was not a code we could find to stop the led lights so we just used the reset button on the back that resets the led lights and everything.
5. After that we had a working prototype that we could use

## Conclusion

In conclusion the printer should be able to be repaired by maintenance a lot faster. Due to our microbit (button a & b) when the printer is jammed, and someone sees it they will press button a which would send a signal to button b saying "the printer is jammed". In the end Melissa printer jamming problem should be solve a lot faster and should be easier.

## Visual data/testing process

### How often the radio signal worked correctly

It seemed to work perfectly until about 100 feet until it started to not work as well past 100 feet

10ft	50 ft	100 ft	200 ft	250 ft
worked	worked	fail	fail	fail
worked	worked	worked	fail	fail
worked	fail	worked	worked	fail

### How often the radio signal works through a wall

I went outside and found a few trees to test it on so i would put the micro bit on one side and the other on the other side and i would test how many times out of 3 it would work. It seemed that it worked fine at 3 feet then when it turnd just to 4 feet it couldn't work very well so in the future we could get a stronger radio signal.

3 ft	4 feet	5 feet	7 ft
worked	fail	fail	fail
worked	worked	fail	fail
worked	fail	worked	fail

## Background Information on User

The name of the user is Melissa. She works at the airport for the Port of Portland. Her job is to print the checks for the airport.

## Prototype

### 1st micro bit

Button a- sends signal (input)  
Resed button on the back- resets the led lights

## Prototype

### 2nd microbit

Will receive radio signal. And show on the screen printer until you click the reset button

