



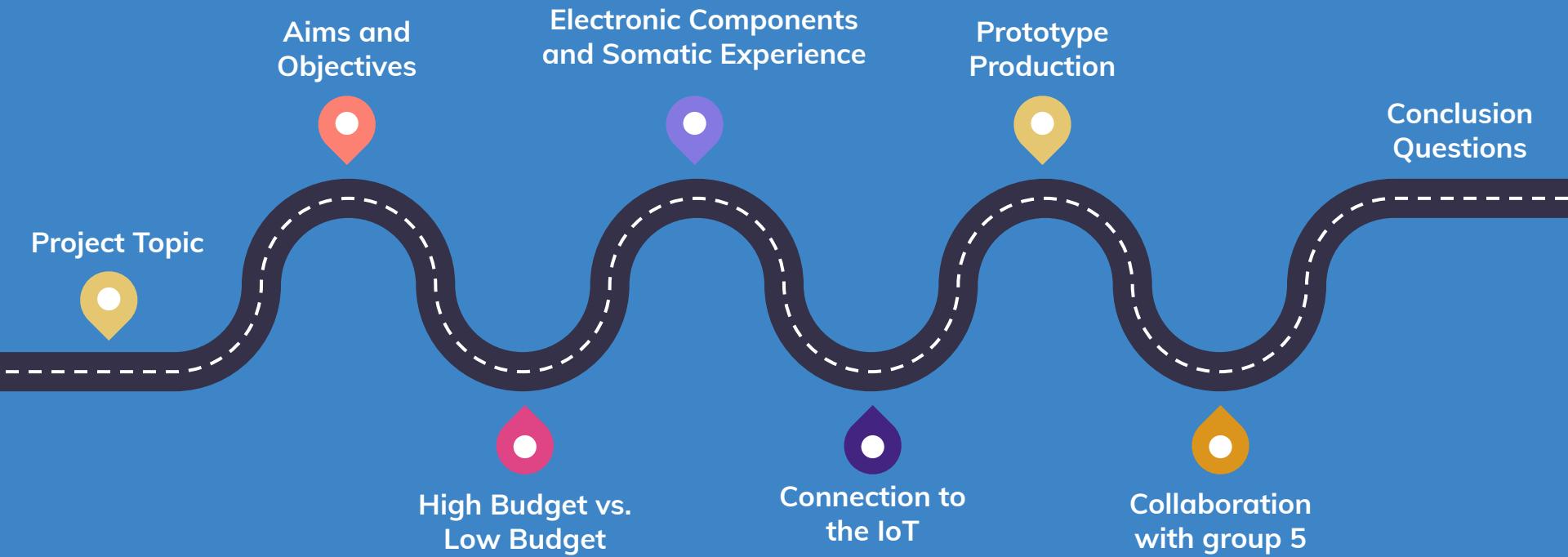
SDP2

QR Codes & the IoT

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Roadmap





1 Project Topic



- Utilize accessible and multisensorial technology to connect Brantford residents with local businesses and community services
- To use QR codes to increase awareness of local businesses and community services while engaging the user's somatic senses

2 Aims and Objectives



- Bring awareness to downtown businesses
- Promote community services to (1) those who need them and to (2) those who want to volunteer
- Fulfill these objectives in a fun, engaging, inclusive way
- Help improve the downtown community

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High Budget vs. Low Budget Design



A High Budget Option

- QR code shown on a digital screen
- Sends user to desired information
- Sensor to detect motion
- Eye-Catching
- Tracks statistics
- More expensive to create



Digital Screen

B Low Budget Option

- QR code displayed on vinyl sticker
- Sends user to desired information
- Durable 
- Less expensive production cost 



Physical QR code
(sticker)



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Electronic Components and Somatic Experience

Somatic Experiences (Mobile Device)

- Visual, auditory & haptic confirmation
- Kinesthetic motion to scan
- Information presented through primarily visual methods
 - Device's accessibility options can provide additional methods of presenting information



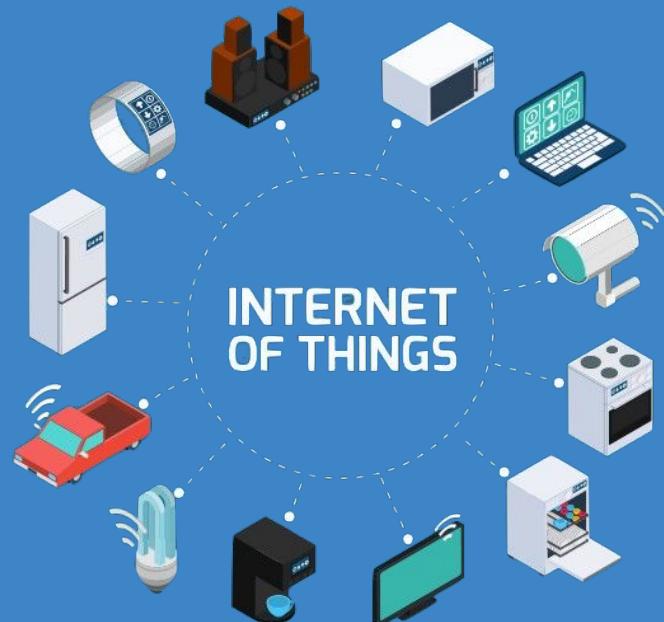
Somatic Experiences (Screen QR Code)

- Brightness depending on environment
- Kinesthetic motion sensor
 - Visual and auditory effects to grab attention
 - Battery saving



5 Connection to the IoT

- In either solution, the QR code will link a device to the Internet
 - QR codes are a gateway (Ramalho et al.)
- Number of scans can be counted to measure the prototype's success
- Wireless motion sensor

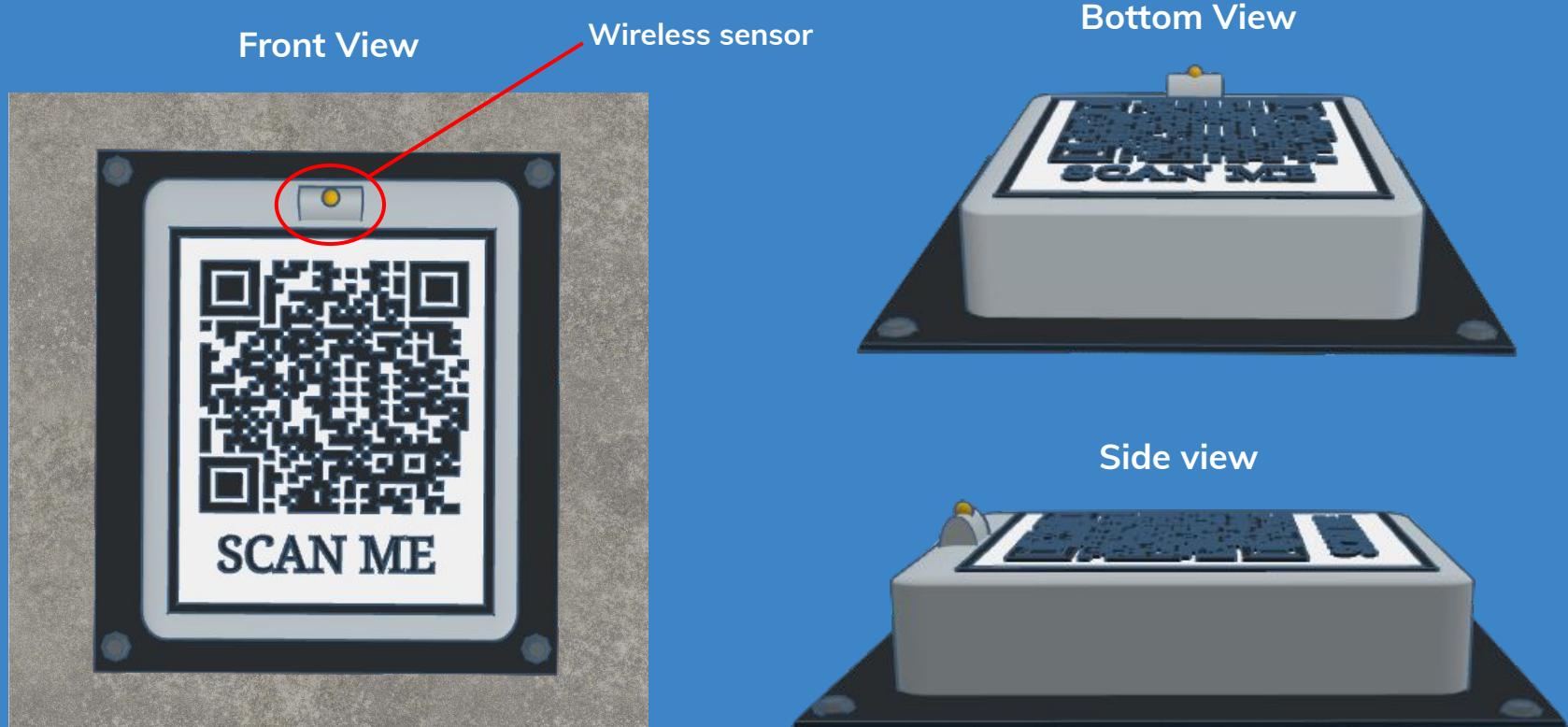




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Prototype Production

3D Prototype



3D Prototype (with protective glass)

Front



Bottom



Top



Side

Instruction Manual

How to mount the 3D QR code



How to set up your 3D QR Code

- 1 Gather all the parts. There should be the main 3D QR code piece, four black screws, super glue, and a glass protective cover.

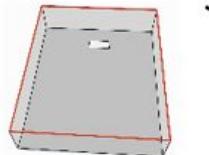


- 2 You will need a screwdriver and the proper head (Phillips).

Take the screws along with your screwdriver, align the screws to the four holes and drill the 3D piece onto the wall.

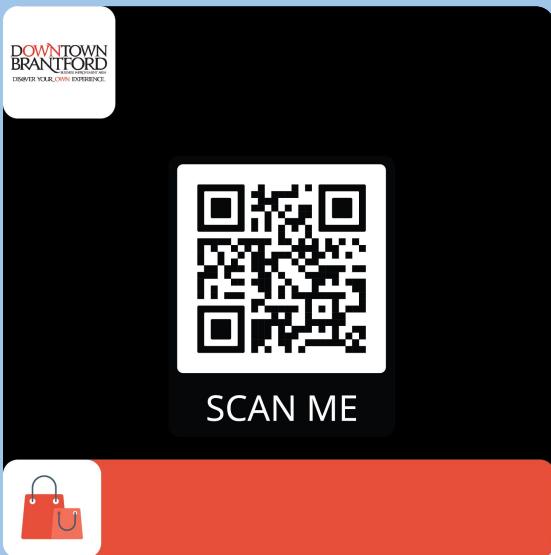


- 3 OPTIONAL



If you are using the protective glass, you will need to use the super glue that comes with the package. Simply put a thin layer of glue on the edges of the glass which will be stuck onto the 3D piece (red lines are where the glue should be), wait about 2 minutes. Stick and hold the glass onto the piece for another 2 minutes. And you are done!

QR Code Stickers



Unique colour + icon for retail coupon

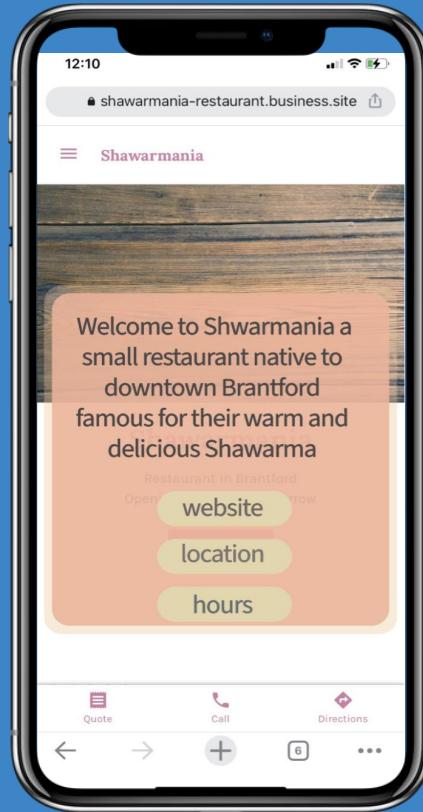


Unique colour + icon for food coupon



Unique colour + icon for services link

Digital Prototype



7 Collaboration with Group 5

- Spoke with the members of Group 5
- Some QR codes specific for the *Ready Belly* app
 - Discounts for purchases
 - App download page
 - App information

The screenshot shows a mobile application interface for 'Ready Belly'. At the top is a large, colorful photograph of a city street with buildings and trees. Overlaid on the photo is the 'Ready Belly' logo in white, bold letters. Below the photo is a navigation bar with tabs: 'About', 'Why local?', 'businesses' (which is highlighted in blue), 'Food', 'Gifts', and 'Services'. The main content area is titled 'Businesses' and sub-titled 'Local businesses to create jobs and buy from local suppliers'. It features three cards: 'The farmer's market.' (with an image of fresh produce), 'The Jelly girls.' (with an image of jars of jam), and 'The Raw Carrot Enterprise.' (with an image of a bowl of soup). Each card has a brief description and two buttons at the bottom: 'Order now' (blue) and 'Learn more' (orange).

Thank You!

Any questions?

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Works Cited

“Internet of Things: What Is an IoT Device?” *HCL Technologies*,
www.hcltech.com/technology-qa/what-is-an-iot-device.

Ramalho, João F., et al. “Super Modules-Based Active QR Codes for Smart Trackability and IoT: a Responsive-Banknotes Case Study.” *Npj Flexible Electronics*, vol. 4, no. 1, 2020,
doi:10.1038/s41528-020-0073-1.