Unit 4 – Academic poster for changemakers project

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Introduction

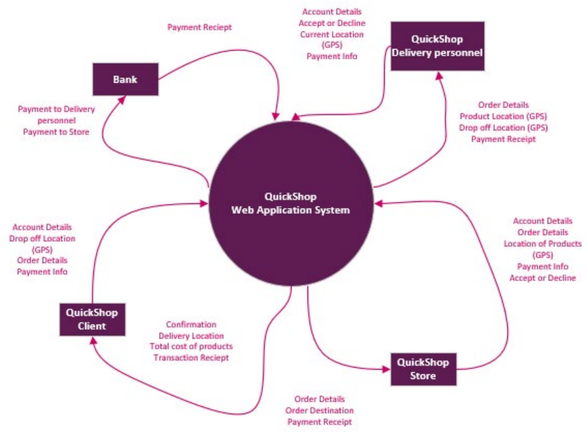
- To achieve a digital solution for the problems discussed in the presentation prior.
- Research was conducted into new and innovative technologies in the web development sector that could be used to achieve the proposed idea.
- The idea is to create a reactive web application utilising a database to handle multiple users with different roles.
- The system also needs to communicate their GPS co-ordinates quickly to co-ordinate product purchasing and delivery for clients who are unable to commute to local stores/ business's during a pandemic.

Method

- To implement the system outlined 3 main technologies have been chosen, Node.js for server communication, vue.js for the website visuals and for interaction between the server and client and Google Maps API for GPS functions.
- Node.JS Server framework[1]
  - Fast transactional based communication.
  - Possibility to code server side and client in JavaScript
  - Scalable
- Vue.js Client-side framework[2]
  - Easy and fast user interface construction
- Two-way communication between server and client to simulate real time updates.
- Google Maps API[3]
  - Geocoding for location tracking
  - AJAX Postcode Search
  - Distance Matrix (Calculate time for travel)
- To improve accessibility for users who are fall into the target market for the service.
- 3 Accessibility API's have been considered:
  - Web Speech API[4]
  - Voice to text library
- AWS Rekognition API[5]
  - Facial Recognition and Machine learning algorithm for detecting people and objects.
- Web Authentication API6
  - Password less Login

Diagrams for project concept

- To show understanding of the concept, a context diagram was created for the system to illustrate how interaction between the entities and the application apply.
- The client can interact with the application and this data is then sent to the system to be distributed.
- The system will distribute the data to store and delivery personnel and back to the system.
- When processing is complete order details can be sent to the bank for payment processing



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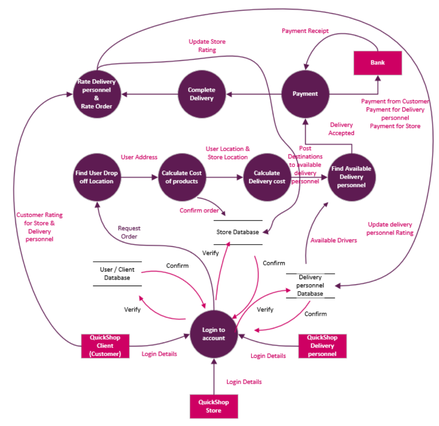
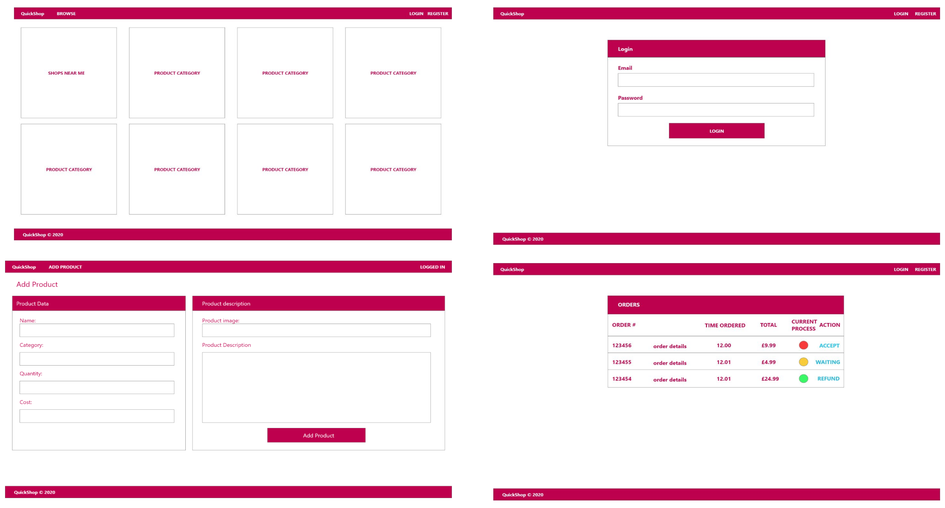
- A data flow diagram was created to show more depth to the processes of the system and its data.
- The client can interact with the web application and send order data via the relevant entities and be processed through a series of processes



Wireframe designs

- Multiple wireframe designs for the user interface were created to ease development.
- The initial wireframe was created to display the guest view of the website
- The second wireframe shows the user interface of the login page.
- The third wireframe displays the user interface design of the stores views when adding products
- The fourth design shows the stores view when viewing orders



Minimum Viable Product

- The minimum viable product in this case is the earliest possible release of a product with enough features and these functions will need to be implemented.
  - Google Maps API[1].
  - Registration pages.
  - Login pages.
  - Store – product registration.
  - Delivery personnel – register online & seeking a job.
  - Client - Display the store menu's on user's homepage.
  - Client - Purchase product.
  - Store – Order information.
  - Store/Client – Request delivery personnel.
  - Delivery personnel – Receive order information.
  - View updated data during order process.
  - Complete order.
  - GPS Data Send & Receive.
  - Delivery personnel to be able to view jobs in local area.

Reference List

1 Node.js, 'Node.js', *Node.js*. https://nodejs.org/en/ (accessed Dec. 10, 2020).

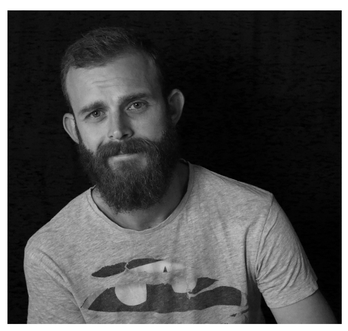
2 'Vue.js'. https://vuejs.org/ (accessed Dec. 10, 2020).

3 'Google Maps Platform', *Google Developers*. https://developers.google.com/maps/documentation (accessed Dec. 10, 2020).

4 'Using the Web Speech API', *MDN Web Docs*. https://developer.mozilla.org/en-US/docs/Web/API/Web_Speech_API/Using_the_Web_Speech_API (accessed Dec. 10, 2020).

5 'Amazon Rekognition – Video and Image - AWS', *Amazon Web Services, Inc.* https://aws.amazon.com/rekognition/ (accessed Dec. 10, 2020).

6 'Web Authentication: An API for accessing Public Key Credentials Level 1'. https://www.w3.org/TR/webauthn/ (accessed Dec. 10, 2020).



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