

# Stimulus

## *Technical proposal for a new web application*

### Identification

Part of Brisbane City Council's strategy and governance is to recognise and award successful contributions to Brisbane's economy (Brisbane City Council 2019).

This year at the Lord Mayor's Business Awards, a new category of award has been added to recognise the contribution of mobile food trucks to Brisbane's economy. Brisbane City Council recognises that mobile food trucks activate city spaces and help celebrate Brisbane's climate and cultural diversity (Brisbane City Council 2018).

You have been approached by Brisbane City Council to prototype an online polling application for these awards, that provides the following functionality:

- imports (into a database) an inventory of current Brisbane food truck operators to be considered for these awards, that can be manually 'refreshed' (i.e. updated) upon request. This information can be extracted using the [Brisbane Food Trucks API](#).
- allow users to easily browse this inventory, and (if the users are registered) allow them to record their ratings categorically. Registered users may also wish to offer a character limited comment regarding their experience, which can be viewed publicly.
- analyse the data gathered for patterns and trends using algorithms to determine categorical winners and generate recommendations or feedback for registered users.

The web application to be developed for Brisbane City Council must:




- be clear, consistent and comply with accessibility guidelines (Queensland Government 2016a). A web writing and style guide has been provided with suggestions for writing and style techniques that should be used.
- include appropriate attribution to data and images used and must comply with copyright law
- include a link to the legal disclaimer at <https://www.brisbane.qld.gov.au/about-council/privacy-and-legal> on the landing page

An optional 'Customer user experience' web template available from [www.forgov.qld.gov.au/cue-template-downloads](http://www.forgov.qld.gov.au/cue-template-downloads) can be used for the user interface. This includes sample HTML templates and CSS styles that can be adapted for the new web application. You will need to modify this template to satisfy usability principles.

## Interactions

Proto-personas have been developed for potential users of the website (see Figure 1).

**Figure 1: User profiles for the new web application**

	<p><b>Walter</b></p> <ul style="list-style-type: none"><li>• Proud food truck operator of 15 years, selling unique burgers offering game meats such as kangaroo, crocodile and emu.</li><li>• Interested in customer feedback, including what customers think of his burgers, and where he could better position his food truck.</li><li>• Very limited computing skills, and has difficulty reading small text.</li></ul>
	<p><b>Shelley</b></p> <ul style="list-style-type: none"><li>• Full-time student, vegan, and works casually at a local vegetarian Café waiting tables on the weekend.</li><li>• Enjoys festivals, social media and trying new food experiences based on the recommendations of others.</li><li>• Tech savvy but has limited time to dedicate to giving lengthy feedback to food truck operators. Willing to do a 'tick-and-flick' survey.</li></ul>
	<p><b>Naomi</b></p> <ul style="list-style-type: none"><li>• Works in Brisbane City Council as a business liaison officer and (thus) chairs a committee that recognises recipients for the Lord Mayor's Business Awards.</li><li>• A successful businesswoman herself, and as such, has a strong background and interest in the food and hospitality industry.</li><li>• Would like a web application that gathers, analyses and presents data in an easily accessible format, so that her review panel for awards can perform its duty accurately and efficiently.</li></ul>

## Component Specifications

### Data

- The data to populate an inventory of food trucks to be rated can be extracted from a JSON string provided by the [Brisbane Food Trucks API](#).
- The inventory of food trucks will contain these fields:
  - Food truck – the name of the food truck
  - Category – the type of food served by the food truck
  - Bio – background information about the truck
  - Avatar – a small image URL to display alongside the food truck information
  - Contact – a link to the food trucks website, Facebook, or Insta / Twitter handle

Note: the URL to the trucks API is <https://www.bnefoodtrucks.com.au/api/1/trucks>

- The awards are only recognising food trucks that have a minimum of three (3) competing food trucks in their respective categories. At the time of writing, this included American, Burger, Dessert / Sweet, Fusion and Asian, although this may have changed (as this data is live). If there are more than five (5) categories eligible for competition, limit the competition to the most popular five (5).
- Once an inventory of competing food trucks has been populated, this data should be organised and presented to users by food truck category groups. This signifies the commencement of voting by registered users.
- For a valid food truck vote, a registered user can rate the following criteria on a three (3) point scale:
  - Speed of service
  - Quality and taste
  - Value for money
  - Comment (optional, unrated, limit to 128 characters)
- The three (3) point scale used will consist of negative, neutral or positive, where negative will be considered a -1, neutral a 0, and positive a +1.
- On request, voting data can be parsed for patterns and trends on request from a site administrator (see algorithm below).
- Users can register for the online polling system with their email address, and supply a display name, password, and choose to receive recommendations (or not). If a user chooses to receive email recommendations, they may wish to filter by a preferred food truck category (optional, where default is overall positive ratings from all categories).

## User experience

- The application must have a responsive web interface based on the wireframes described on [www.forgov.qld.gov.au/cue-module2-elements-screen-layout](http://www.forgov.qld.gov.au/cue-module2-elements-screen-layout).
- Provide interfaces for:
  - User registration, settings, browse food truck category data, vote and confirmation.
  - Administrator backend, including food truck inventory management (update / view / remove), as well as generate reports (using the algorithms below).
- The web application complies with government web design standards, the *Australian Privacy Act (1988)*, and the Australian accessibility standards (see Table 1).

## Code

- an algorithm adapted and modified from the algorithm below to process the polled data, calculate category scores, and generate results and recommendations:

**Note – this algorithm has been deliberately written to a low standard, to allow students maximum opportunity for improvement:**

FOR each food truck category as CAT:

    FOR each food truck as FT:

        FOR each criteria of speed of service, quality / taste and value votes as CRIT:

            Calculate the average score of the FT CAT CRIT OA #OA = Overall

        END FOR

    Average the FT CAT CRIT OA scores to award an overall food truck score .. as FT CAT OA

    IF the FT CAT OA > 0.0: #meaning overall a positive experience

        IF user has signed up for recommendations AND the CAT is in the user preference filter:

            Email the user an appropriate recommendation to the FT

        END IF

    END IF

END FOR

    Calculate category overall placements [1..n] in ascending order of FT CAT OA ... as CAT OA

Calculate an open category placement [1..n] in ascending order of CAT OA ... as OA

Create a report displaying all calculated information in an accessible, readable format, and deliver via web interface.

- Further pattern analysis of the data could be of interest to food truck operators and Brisbane City Council service providers and should be available upon request in a format that is accessible via the web interface. This includes:
  - Determining a user preference score, by using the formula:
    - $\text{User preference score} = \text{user score for specific food truck} - \text{user score for all other food trucks}$
  - Highest variance score, by using the formula:
    - $\text{Biggest variance} = \text{MAX} (\text{Highest score} - \text{lowest score}) \text{ for a specific food truck for all customers}$
  - Frequency scores for service, quality and value, by:
    - $\text{Percentage of +1 criteria} = \text{number of +1 in specified criteria} / \text{total number of participants who voted}$
  - Volume / count of participants for any one food truck (to measure traffic).
- Algorithm should also filter or sort results by food truck category when browsing
- Generate a view that contains preference mailings for users upon request, including the food truck score, and the user's food truck category filter setting.
- algorithm and code to ensure site is being operated by an authenticated user
- a session variable to manage the user's "login"
- an algorithm and code to read determined records from the [Brisbane Food Trucks API](#) and store them in a database table.

**Table 1: Accessibility guidelines adapted from the Australian accessibility standard**

Accessibility guidelines
<p>Page titles:</p> <ul style="list-style-type: none"><li>• must appear in the browser tab for all pages</li><li>• must be appropriate for the page</li><li>• must be different for each page.</li></ul>
<p>Alt text:</p> <ul style="list-style-type: none"><li>• must be used for all content images (except decorative images)</li><li>• attribute is set to null for decorative images</li><li>• appropriately describes the content of the image to which it relates</li><li>• gets larger when pages are zoomed.</li></ul>
<p>Headings:</p> <ul style="list-style-type: none"><li>• are on every page (at least one)</li><li>• levels on each page have a meaningful hierarchy</li></ul>
<p>Zooming of pages:</p> <ul style="list-style-type: none"><li>• results in correct display of the page with no horizontal scrolling</li><li>• allows all buttons to remain visible.</li></ul>
<p>Non-mouse navigation (keystrokes or tabs):</p> <ul style="list-style-type: none"><li>• of page is in a logical order</li><li>• allows access to all page elements.</li></ul>
<p>Fields:</p> <ul style="list-style-type: none"><li>• in forms and other form controls have a visible label to allow interaction with voice input and increase the clickable area</li><li>• that are mandatory are clearly indicated and do not rely on colour alone</li><li>• with required formats, such as dates (year, month, day), are clearly indicated</li></ul>
<p>Error messages (or validation messages):</p> <ul style="list-style-type: none"><li>• are clear and specific</li><li>• do not cause the form to be completely reset.</li></ul>
<p>Accessibility options include:</p> <ul style="list-style-type: none"><li>• general instructions for user input at the top of the form or section to which they relate</li><li>• text transcripts provided for audio and video elements</li><li>• appropriate contrast ratio between text and background (colour contrast)</li><li>• a five-second time limit for all moving or flashing content, and the content can be disabled or controlled by the user</li></ul>

## References

Brisbane City Council, 2017, *API Guide – Brisbane Food Trucks*,

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<https://www.brisbane.qld.gov.au/about-council/governance-and-strategy/business-in-brisbane/business-events-and-awards> accessed 12/7/2019

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Choose Brisbane, 2017, *About the Lord Mayor's Business Awards*,

[http://www.choosebrisbane.com.au/corporate/lmba/about-lmba?sc\\_lang=en-au](http://www.choosebrisbane.com.au/corporate/lmba/about-lmba?sc_lang=en-au)

Queensland Government, 2016, *Elements of screen layout*,

<https://www.forgov.qld.gov.au/cue-module2-elements-screen-layout> accessed 11/6/2017

Queensland Government, 2016a, *Web writing and style guide*,

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