

Milestone 1 report

Challenge A: Homeless in Australia

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Task levels and ideations

- Level 1 (GREEN)
 - Large images showing most critical info on the main page
 - Small accompanying text to give little detail further
- Level 2 (ORANGE)
 - A medium sized databox and explanation for further knowledge of the problem
 - Easy search function to find data filtered to users' criteria (selectable and predetermined)
- Level 3 (RED)
 - A separate webpage dedicated to mass and raw data for users in expertise
 - An advanced search function used to filter through advanced categories and definite inputs as data limiters (partially selectable and majorly user affixed)

Data set investigation

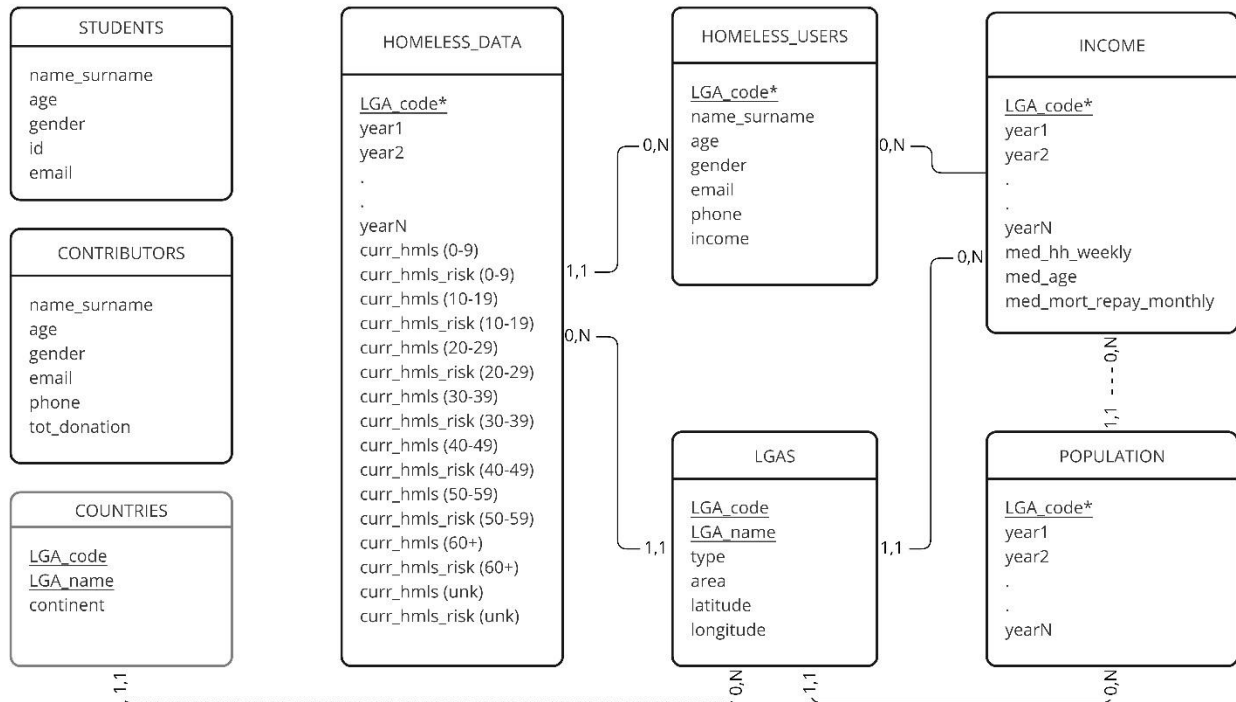
The dataset contains mass information about homeless, and all possible criterions affixed to them. The data currently provides data from 2016 and 2018. All the counts of homeless were fixated by their age and risk level. The other dataset was the cumulative income, rent, and mortgage. All the datasets mentioned were connected through two primary data, lga_code and lga_name, which were part of the LGA dataset. It included all major facts on the area, type, and geographical positions of local government areas. Finally, the population dataset contained the population recoded for all the LGAs for the 2 years.

The three main points that the website would be to outline would be:

- How much did homelessness grow in years? (Brisbane – 1.5% [2016-2018])
- What percentage of homeless are minors? (35%)
- What LGAs have the worst-case scenario? (Brisbane – 6483 homeless 2016)

Database Ideation

(https://miro.com/app/board/uXjVO1jZj_4=/?share_link_id=597579484664)



This ER Prototype model is focused around storing all records of homeless, the respective locations represented within LGAs and their populations, respective income, rent, and mortgage, additionally having a separate dataset for storing all the users' information, may it be the people in or who could provide help. Almost all the datasets are connected with 1 primary key that is lga_code, a code-id for each governmental area.

Datasets:

- LGA dataset contains all the information about the governmental areas such as their geographical position, area, and type.
- HOMELESS_DATA dataset contains mass data on the counts of homeless split into several categories. The categories include the year of the record, normal and homeless at risk, and the numbers split across ages with between deca-dividants, with an extra case of undefined.
- POPULATION is a simple dataset summing up the population for each of the LGAs over the recorded years.
- INCOME dataset is aimed to record data regarding income, rent, mortgage, and med age, with extra capabilities to minorly alter the data if the future users would share their information containing their income.

- HOMELESS_USERS would be used as a dataset containing the users' data, such as their name, age, gender, contact information, and income. The future applications for this database would be the potential aid for the homeless users who have reached out to the website for help.
- CONTRIBUTORS is a dataset that would hold the information of the people who have registered and proceeded as either a person who can help or has had a donation made on the website. It holds basic info like the name, age, gender, contact information, and a dynamically adding tot_donations value which keeps a record of sum of all the donations made by the contributor.
- extra STUDENTS dataset is to keep a static track of the team members details, with a minor case of usage on the future website.
- COUNTRIES is a potential dataset that could be used to store international data, such as local LGAs per country and the continent of it. (It was set as optional as the scope of the current project is within Australia, but has a potential to store international information)

Dataset relationships:



- LGA dataset has the main ID for all other datasets, LGA_code, as an identifier of the governmental area of where the data belongs to. This dataset connects to other datasets such as: HOMELESS_DATA where it holds NONE OR MANY counts of the homeless, INCOME where it holds NONE OR MANY records of income rent and mortgage, and POPULATION where it holds the numbers of populations from respective years to the respective LGAs.
- HOMELESS_DATA dataset contains the counts of homeless distributed into categories. It is connected to the LGAs dataset, where it can have ONE AND ONLY ONE LGA identifier. The dataset can also contain potential information that could be added from the HOMELESS_USERS, where there could be NONE OR MANY.
- POPULATION dataset contains data about counts of population. It contains info per LGA, where it could provide for ONE AND ONLY ONE. The dataset could hold a connection to the INCOME dataset for future calculations of min/max/med etc. values.
- INCOME dataset holds info regarding money flow. It holds data per LGA for ONE AND ONLY ONE and is calculated per ONE AND ONLY ONE potential value from the POPULATION dataset. The dataset value is also a subject to change if the HOMELESS_USERS were to add entries into the dataset, which being NONE OR MANY.
- HOMELESS_USERS dataset contains numeric and contact information of the registered users being currently homeless. The only connection the dataset has is bound to the HOMELESS_DATA where they fall under ONE AND ONLY ONE of the predetermined categories.

- CONTRIBUTORS dataset has no active connections and could be just used as a direct data storage of the contributors' donation values and contact information.
- STUDENTS dataset has no connections and holds basic info of this team's members.
- COUNTRIES dataset has one connection to the LGAS dataset. With potential to provide NONE OR MANY LGAs to the receiving dataset

Project level contributions:

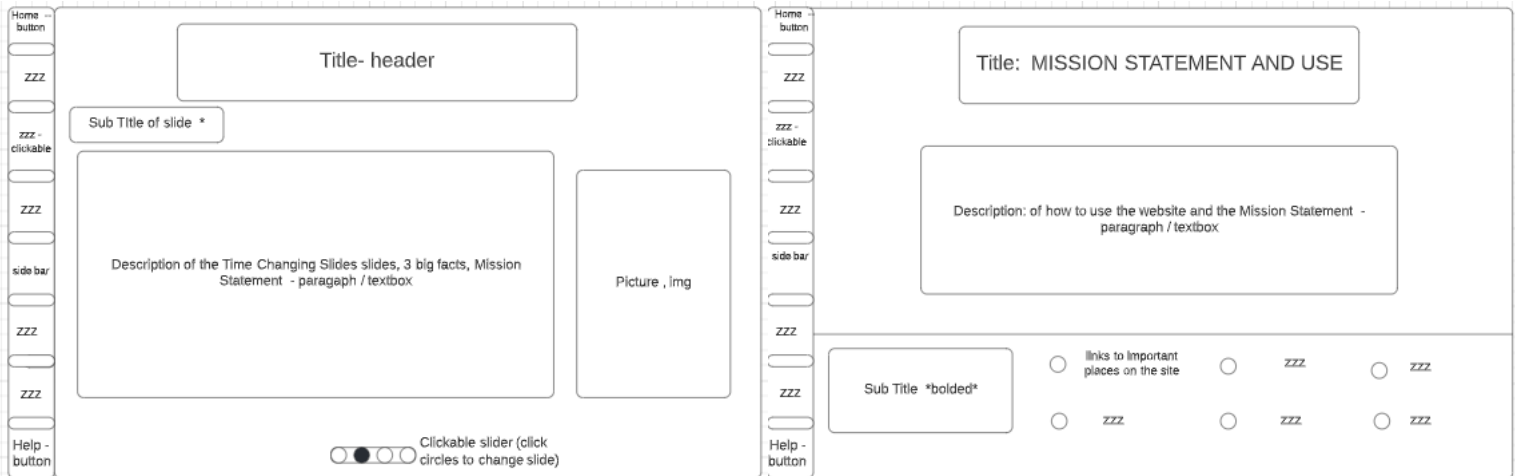
- Level 1 (GREEN)
 - This database design is suitable for the presented tasks, as it includes simple and raw data that can be dynamically processed and displayed on the website per query.
 - The main page would be able to request data to fill in the content space, without simply putting in unchangeable values into the web program part
- Level 2 (ORANGE)
 - The model also supports for calculation of numeral queries requested by the user, may it be max min or median values.
 - The simple search presented in UI/UX section shows how its design could allow an average user to search for data they pursue, providing selections to predetermined filters.
- Level 3 (RED)
 - The design presents an ability to create and store potential User info for homeless and contributors willing to help. The database stores them in HOMELESS_USERS and CONTRIBUTORS datasets.
 - The advanced search presented in the UI/UX section could be used as a tool for experienced users to request and find mass data that is held within the database. The users have the ability to put in definite filter values to find the exact data they are willing to see.

Personas

| | | |
|---------------------|---|---|
| Name & Picture |  <p>Dave</p> |  <p>Jonathan</p> |
| Description | <p>A retired worker from the carpenters. Currently homeless as he could not pay in for all the dues. Barely sustains to live through in his old car.</p> <p>Age: 22</p> | <p>Jonathan is a local community activist and looking at getting involved at improving his awareness of the homeless in Australia.</p> <p>He is working for the council and has asked him to gather data and information such that he can present to his colleagues. Age: 24</p> |
| Needs | <ul style="list-style-type: none"> • A home to start residing in • A job with stable income | <ul style="list-style-type: none"> • Mass amounts of data to formulate and information on homelessness • A website with anecdotal evidence and stories |
| Goals | <ul style="list-style-type: none"> • To get a solid permanent house/apartment • Achieve \$75k yearly income | <ul style="list-style-type: none"> • be able to articulate and download data from the site & to be able to present data • Set up a monthly subscription to get notices on the outlook of homelessness in Australia • Looking for other ways to help other than donations |
| Skills & Experience | <ul style="list-style-type: none"> • Has moderate physical skills and knowledge from past work | <ul style="list-style-type: none"> • Understands and is well versed in how to use technology & forward thinking • Empathetic and understanding & poor |

UI/UX Ideation

Level 1 – “The Big Picture”



Level 1 Subtask 1 Ideation, fig 1.1

Level 1 Subtask 2 Ideation, fig 1.2

https://lucid.app/lucidchart/8d81510e-50bf-4594-98e4-0d996cc3f60a/edit?invitationId=inv_71d4365d-a5c8-46ea-8940-31cd7622a56f

– Lucid Chart for ideations

The goal of Level 1 was to establish an understanding of the website and grab the user’s attention, whilst giving the user an idea of where to go next to achieve their own objectives.

Level 1 Subtask 1’s Ideation (fig 1.1), the opening page grabs the attention of the users with a changing slider and a bold title on the front page a common Design pattern used to convey information with the use of promoting clarity and interaction among the users.

Whilst Sub Task 2 Ideation (fig 1.2) features a spacious middle design with a Large Title Header, with two different subheadings representing different sections of information on the page. Among one of these sub sections uses hyperlinks of other webpages on the website of which information that the website is designed for.

Among all the ideas is a sidebar linking different webpages together.

For both subtasks one & two, although these ideas do not fully reflect the wants and needs of the personas of the website. It does though give an idea of how these needs and wants will be better explored later in the report, as reference to fig 1.1 the use of four Slides dedicated to key facts illustrate the use of data one of the wants and needs of those at risks giving them detailed information on support and advice given. Fig 1.2 also supports for those at Risk by linking the users to other webpages and solutions which could prove helpful to those “at risk.”

Some of the key Nielsen Heuristics within Level 1. Would be the use of a slider in fig 1.1 which creates space and clarity for the user among all slides and can be noted as “consistency and stay to standards” & “Aesthetic and minimalistic design” of Nielsen’s Heuristics, “visibility of status” is used by

knowing what slide is on by the small dots at bottom of fig 1.1. And the use of user control and freedom among all webpages on the site using a sidebar connecting all the sites together.

Sub Tasks 2 choice of a minimalistic and spacious design enveloped “Aesthetic and minimalistic design” giving the user pleasant experience of the web space by leading them to where to read by keeping it simple. The design also promotes “user control and freedom” by giving the user choices of where to go next that might be related to the wants of that user that can be seen at the bottom of fig 1.2.

Level 2 – “Shallow Glance”

Fig 2.1, Ideation for Level 2 subtask 1

Fig 2.2, ideation for level 2 subtask two

The goal of level 2 was to present a shallow look at how the website would deal with managing the social challenge in a more data quantitative way.

both ideation’s figs 2.1 & 2.2 deal with the functionality and UI design around input and output of different data, respectively. respectively both sub tasks feature data result fields to the right of the ideation along with Descriptions of how the respective sub tasks work, both subtasks use common UI patterns of Field boxes, Drop down boxes, check boxes and Buttons in respect to the functionality of the ideation / subtask.

Both Subtasks are able to take input and search for data although shallow in its depth due to limited filters. This checks the criteria of the needs of one of the personas to “accumulate data” and “to present data for a presentation.” The advantage of the data not being as in depth as later ideations is that it still will cater to both sets of personas as it is only a glance at the data which anyone can interpret.

Nielsen Heuristics used within both Ideations:

- “Consistency and stay to standards,” both subtasks are complementary to each other in regard to their layout and design following the header in top directs down to the instructions / documentation of the functionality then to the input of the data and finally leading to the results (search) button.
- “Help and Documentation,” in reference to both fig 2.1 & 2.2 both ideations use documentation in the form of paragraphs to describe the functionality of its respective ideation / subtask.
- “Aesthetic and minimalistic design,” the result of careful planning and certain Common Ui Design patterns such as drop-down box or result based drop downs and by focusing on the essential tasks given. both ideations / subtasks give a sense of clarity and understanding when being used
- Visibility of system status, regarding fig 2.1 & 2.2 when the “search” button is clicked the system will show a loading icon representative of a small rotating circle to show that the function is working

Level 3 – “Deep Dive Data”

This wireframe shows a complex interface for 'Advanced LGA SEARCH'. It features a top navigation bar with 'Home clickable' and 'ZZZ' links. The main content area is divided into a left sidebar and a right panel. The sidebar contains a 'Sub Heading How to use' section with a paragraph, followed by 'LGA FIELD SEARCH BAR - Drop down box' and 'ADVANCED SETTINGS - drop down'. Below these are two range filters: 'Lowest LGA, based on Stat' and 'Highest LGA, based on Stat', each with a slider and a 'range filter (pay)' input. At the bottom of the sidebar are 'Search Button - button' and 'Exit - button'. The right panel contains 'LGA DATA QUERY Result Field - title', 'lga basic Information text', 'LGA Raw total Values text Box', a 'loading' spinner, 'Resulted Information From filters chosen - text box', and a 'Download Data Report-button'.

Fig 3.1, level 3 subtask one

This wireframe shows a simplified version of the 'Advanced LGA SEARCH' interface. It has a top navigation bar with 'Home-button' and 'ZZZ' links. The main content area is divided into a left sidebar and a right panel. The sidebar contains a 'Sub Heading How to use' section with a paragraph, followed by 'LGA FIELD SEARCH BAR - Drop down box' and 'ADVANCED SETTINGS - drop down'. Below these are two range filters: 'Proportional Drop Down' and 'Range: Age DropDown', each with a slider and a 'range filter (pay)' input. At the bottom of the sidebar is a 'Search Button'. The right panel contains 'LGA DATA QUERY Result Field - title', 'lga basic Information text', 'LGA Raw total Values text Box', 'Resulted Information From filters chosen - text box', and a 'Download Data Report-button'.

Fig 3.2 Level 3 subtask two

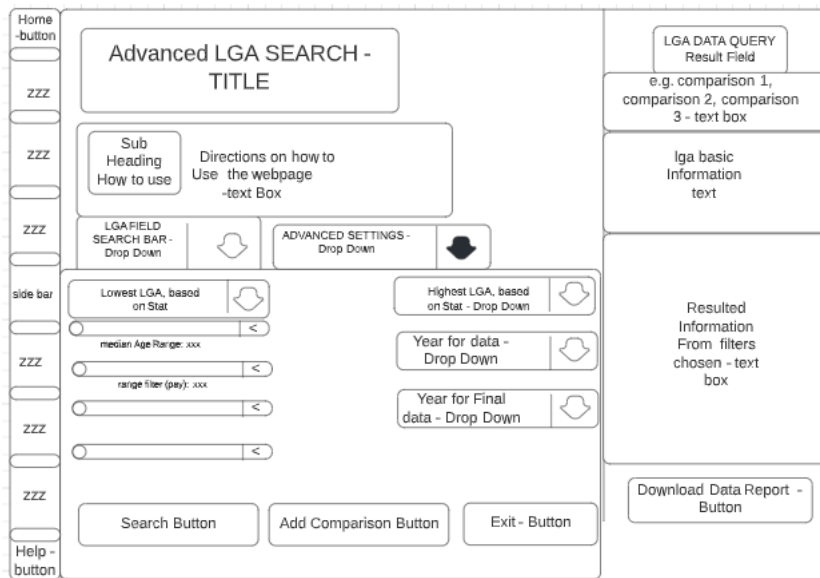


Fig 3.3, level 3 subtask two

The goal of level 3 was to establish a deeper dive of the data of certain and specific trends of points over time with filters on data. Specifically, subtask one objective was to find correlations of homelessness to other factors whilst subtask two objective was to compare the change in homelessness with respect to other factors over periods of time.

Level 3 Subtask 1 design is similar to that of level 2 subtask due to the fact that the use of LGA's is very prominent between the two's objectives and will find its self-similar again in Level 3 subtask two. As can be seen in fig 3.1 & 3.2 a couple new common design patterns / UI choices. This includes scrolling bars for filters which have specific range in this case being weekly pay or Age of a user with conditional operators attached (able to be changed).

A pop out User interface for these additional filters as it promotes clarity and space by creating additional space. In accordance with the new interface the user can select dropdown boxes with filters such as money, age, homeless to find a LGA with regards to the filter chosen with respect to most and least as can be seen in fig 3.1 & 3.3 near the middle of the page.

Subtask 2 is practically the same design as Subtask 1 but with the additions of comparison of different filters represented as a button in fig 3.3, but most notably the addition to be able to choose a period of time to record and output data this in the form of drop-down boxes and still being choose over all periods of time by selecting the '-' option on the design.

Regarding the level 3 subtasks in reference to objective to meet the needs and wants of the personas. Level 3 allows for personas to gain an in depth look at data to accumulate knowledge on the subject to a greater degree.

Other functionality within the ideation such the use of downloading a report of the data fulfills the want of "downloading that of data**" to great extent by making the data more accessible and portable within the solution. The design also allows for the wants and needs of those "at risk" & looking for help

by use of data the user can infer results and cater to his own problems e.g., data suggest there is a similar LGA, where the general LGA information is similar to his own LGA but better tends to be economic prospects and less homeless thus making the decision to look in other area within that LGA.

Nielsen Heuristics used within both Ideations:

- “Consistency and stay to standards,” both subtasks are complementary to each other in regard to their layout and design following the header in top directs down to the instructions / documentation of the functionality then to the input of the data and finally leading to the results (search) button and the use of a pop out layout uses a symmetrical design to it.
- “Help and Documentation,” in reference to both fig 3.1 & 3.3 both ideations use documentation in the form of paragraphs to describe the functionality of its respective ideation / subtask, within the sidebar at the bottom introduces a help option which helps the user with the overall functions of the website.
- “Aesthetic and minimalistic design,” the result of careful planning and certain Common UI Design patterns such as drop-down box or result based drop downs and by focusing on the essential tasks given. both ideations / subtasks give a sense of clarity and understanding when being used, this is evident by fig 3.1. and 3.3 such as a clean spacing and spreading of the result field against that of the input easily distinguishes the two functions and focuses on the essentials by leading the user’s eyes towards the input and flow of the page by use of different size heading and normal conventions such as reading left and right from the page with the input being on the left side of the page
- Visibility of system status, regarding fig 3.1 & 3.3 when the “search” button is clicked the system will show a loading icon representative of a small rotating circle to show that the function is working
- The use of a sidebar within the ideation promotes that of “global navigation” heuristics through the website, the use of arrows on general purpose search engines will be integrated with the website.

https://lucid.app/lucidchart/8d81510e-50bf-4594-98e4-0d996cc3f60a/edit?invitationId=inv_71d4365d-a5c8-46ea-8940-31cd7622a56f

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