# Relevant Implications

## Privacy

A picture containing drawing

Description automatically generatedPrivacy addresses security of information when transferred to the server and making sure any personal information cannot be accessed by unauthorized sources. I have addressed this in my project by using form methods and admin permissions. In HTML/PHP there are two different submit methods for forms. The method GET retrieves the form data and displays the information in the address bar while POST retrieves the form data securely and privately, a user cannot see or access the data submitted from a POST form. Due to this I have used the POST method for all forms that require privacy such as login to keep the password secure and all forms editing the database as that information should be secure and not just available for anyone to retrieve. It means that information in the database can only be accessed through my custom defined queries which can only retrieve property information assigned to listings. This is important since the database of all properties should only be accessible to the company and if this information is accessible to users then that is a massive breach of privacy. To help prevent this I have also created a secure function to strip any code tags and escape other malicious character sequences to help protect my database from SQL Injection and stop unauthorized access. Another way I have ensured privacy is using password encryption for my users. This means that when their password is created instead of the plain text being stored, I pass the password through a hashing function with a special constant that returns a one way encrypted equivalent of their password. Then to validate my passwords on login I use the PHP password\_verify function which takes a plain text string and a hash value and determines whether they are equivalent. This is a much more secure way of storing the user information as the database administrator, if they looked, would only see ‘nonsense’ characters for a user’s password due to the encryption and if a hacker managed to bypass my injection protection, they would see the same thing. This hashing one-way encryption method is extremely secure and effective in ensuring user privacy as it is nearly impossible to retrieve their password, it remains confidential only to them.

## Functionality

The functionality of my database refers to the capabilities and ease of use of the database, how easy is it to use and how well has it done its job. To address functionality, I have included a number of features into my website. The primary purpose of my database is to have information on active listings which a user can access. To do this I have included a listings page which displays all of the information in the listings table as well as associated data. These listings have the ability to be filtered or sorted by a range of criteria making it very efficient for a user to find specific listings. I have included the ability to search title, suburb, and address by keywords as well as narrow down price, bedrooms, and bathrooms to a range of values. They also have the option to sort all of the listings in any order by any field. This makes it incredibly more useful to a user because instead of manually sifting through a random jumble of listings they can order it in a specific way to make it more efficient for themselves, or they can filter down the results so they are only looking at listings relevant to them. Another way a listing can be viewed is on individual agent profiles where a user has the ability to see both active and sold listings that agent has dealt with. I added this because stakeholders reported it useful to see properties an agent is selling and has sold to get a gauge of their ability and skill as an agent before trusting them to handle an incredibly important financial decision. The layout of this is clear and very easy to follow, displaying clearly which listings are active and sold as well as displaying accurately the listings associated with only that agent. In my forms I have also added a large amount of functionality. I have incorporated the ability to add an unassigned property to a listing so that a user doesn’t have to fill in unnecessary information as well as forms to edit listing and agent information so that if something changes or there is a typo in the original it is possible to go back and edit the data without going into the database. Navigation to these pages is incredibly intuitive with simple, descriptive navigation items in the nav bar. Overall it thoroughly meets the criteria the client has provided, giving all of the functionality required A screenshot of a cell phone

Description automatically generatedA close up of a sign

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Description automatically generatedand more to deliver an elaborate, yet simple and easy to use outcome.

## Usability

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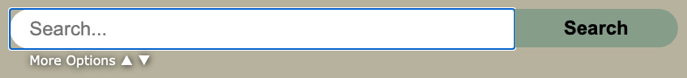
Description automatically generatedA screenshot of a social media post

Description automatically generatedNeilson’s Usability Heuristics are 10 criteria all programs should meet in order to be consistent and easy for a user to intuitively operate. This is incredibly important as users get used to the consistency across all websites and programs so when something doesn’t follow these principles a user does not have the patience to sit around and figure out, often leading to them clicking off your website. The first heuristic Visibility of System Status isn’t particularly relevant to this outcome so I will leave it out for now. For Match Between System and the Real World I have ensured that I use simple terms that are in the user’s language (English) and nothing complicated or ‘computer system’ terms that could be unfamiliar. For User Control and Freedom all of my forms are static and able to be navigated out of through the nav bar. This means that at any time a user is able to exit or reload a form even if they are halfway through filling a form out, so for example they are not trapped until the form is submitted. For Consistency and Standards I have ensured that they page and form layouts match a standard layout as well as all of my forms are laid out identically. I have the submit buttons at the bottom of forms as well as the Update button on the left and the Delete button on the right because it is common practice and if these were to be switched around it would increase the likeliness of someone accidentally deleting when they intended to update. For Error A screenshot of a cell phone

Description automatically generatedPrevention I have used HTML patterns on most fields to ensure the data is valid before it can be submitted and if a user tries to submit invalid data the form won’t let A screenshot of a cell phone

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Description automatically generatedthem until it meets the required criteria. For Recognition Rather than Recall I have partially achieved this through consistency across all forms and informative placeholders however once my fields are populated with data these disappear so in order to improve this I could add permanent labels to my fields in order to ensure it is always known what A screenshot of a cell phone

Description automatically generatedthe fields are rather than relying on a user to remember. For Flexibility and A screenshot of a cell phone

Description automatically generatedEfficiency of Use my search bar is incredibly for a ‘novice’ to just use and even more basically the Listings page which just displays all listings without any other requirements. Then for more for experienced users there is the ability for them to further refine a search with the additional options section as well as reorder the Listings through another sort form. For Aesthetic and Minimalistic Design I have made A screenshot of a cell phone

Description automatically generatedthe additional criteria of my search forms a drop down which is minimalistic as it is optional criteria and would just clog up the screen with unnecessary information for most users. I have also staggered the boxes of my forms into several lines down the page to help break up the information and make it easier to see and understand what needs to be done. I have also applied basic elements of CRAP (Contrast Repetition Alignment Proximity) to all forms, ensuring that they are consistent, aligned, and all of the related fields are A screenshot of a cell phone

Description automatically generatedclose together. Finally for Help Users Recognize Diagnose and Recover from errors, if a user manages to submit and invalid form or if it contains invalid data then relevant error messages are shown at the top of the form and in red text (standard for errors) detailing the error message an example of this is ‘Invalid Username or Password’ for my login form.