Car Rental System

Principles of Design

The user must be able to simply navigate the application and reach the users' goal. A customer is more likely to return to the service if they have had an enjoyable experience.

As Abba (2020a) describes in his lecture, there are six design principles known as 'Norman's Fundamental Principles'. These consist of visibility, feedback, constraints, mapping, consistency, and affordance. In addition to this, Abba (2020b) further explains an additional eight rules, known as Schneiderman principles. These include consistency, shortcuts, feedback, design dialogue to yield closure, error handling, permit easy reversal of actions, support internal locus of control, and reduce short-term memory load.

Visibility is a key principle when designing any interface, whether that is a website or a mobile application. For example, each button is a bright and contrasting colour to the background and is independent of other features. This enables the user to find and use the functionality of the buttons, compared to that if the button was greyed out.

Feedback is applied to certain situations such as the log in page. If a user enters the incorrect login details, they are notified that their attempt to log in has failed. This allows the user to check their username and password before retrying; therefore, avoiding the user becoming frustrated. A user may also be changing their refreshments choices, both adding and removing items. The system would then provide feedback by updating the running total, notifying the user how much they are spending. The benefit of providing feedback here is to reduce the number of errors when a customer pays for their refreshments. A customer may accidentally tell the system they want 10 cokes, although they only want one. The total would show a higher amount and the user would be able to rectify their error.

The next principle, constraints, is applied to the raffle. A user will not be able to pay or continue until they have pressed the button to play the raffle and apply the discount. This logical restriction avoids the user skipping the raffle and missing out on the discount.

Consistency is enforced throughout the application to ensure the application is easier to understand and that the functionality does not change throughout. All text fields and buttons consist of one design so that the user can quickly identify the purpose of that element.

Continuing to Schneiderman's principles, informative feedback is provided with the actions. For example, when paying the cost of the service, the user is required to enter the amount they wish to pay. If the box is left empty and the user attempts to pay, they are provided feedback asking them to

enter a valid amount. As an extension of feedback, the user is also given closure at the end of the timer, asking them to return the vehicle.

One of the last principles, simplicity is seen throughout the design, allowing an aesthetic and consistent look throughout without any unnecessary elements.

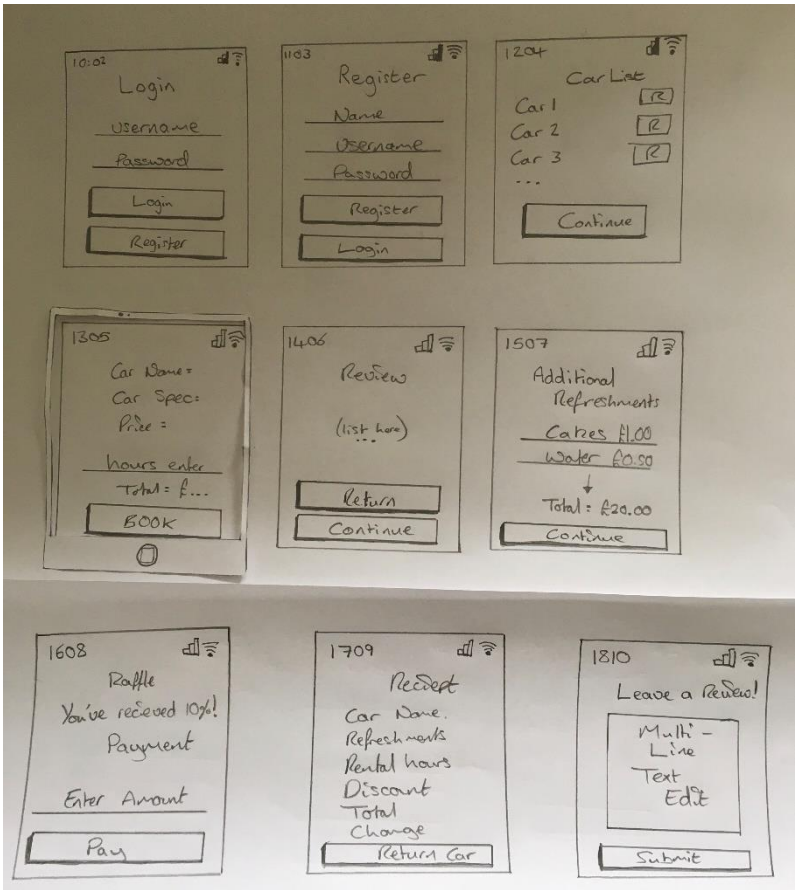
User Concerns

The stakeholders, in this case, consist of the customer and the car hire company. The main persona to focus on is the customer. This customer is highly likely to be a tourist travelling to the country and requires a temporary hire car for the duration of their stay. This may provide a language barrier between the user and the application, which leads to a significant problem in the usability of the application. If a user cannot read the buttons, text, and more importantly the price, they will not use the service; therefore, the business will receive lower profits.

To combat this, the application will use the minimal amount of English required to understand the functionality of the system. For instance, to pay the user will simply see the button ‘Pay’ instead of ‘Press here to pay for the car rental’. In addition to this, the simplistic design of the application will benefit and help the user reach their goal. Contrasting the button to the background information can benefit the visibility and functionality of the system.

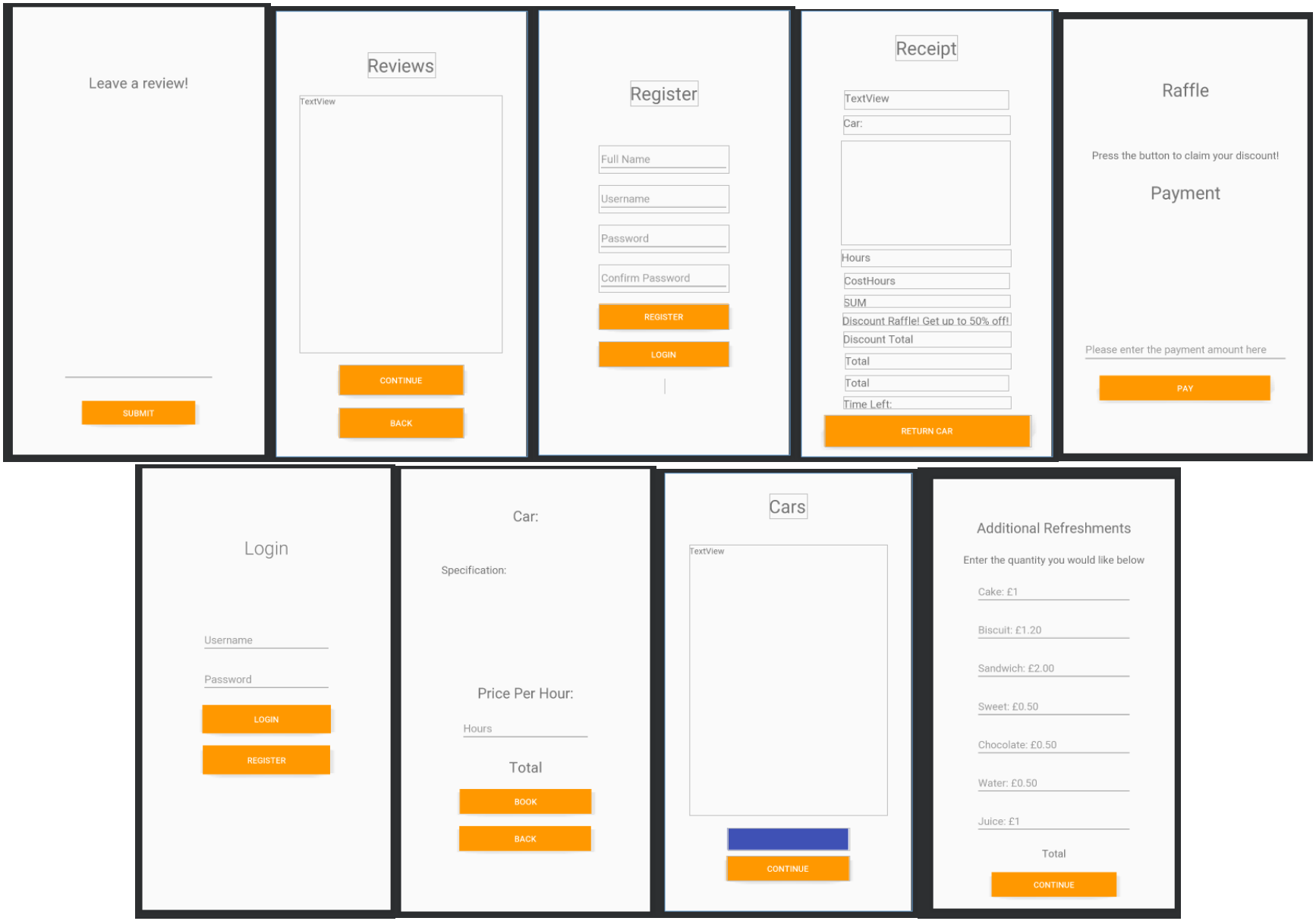
Appendix

Appendix A – Paper Prototype Design



Name: Ben Coxford Student Number: 189006196

Appendix B – Application Final Design



References

Abdulrazaq, A. (2020a) *Principle of Design (Part One).* Presented at Mobile Application Lecture. York St John University [4th February 2020].

Abdulrazaq, A. (2020b) *Principle of Design (Part Two).* Presented at Mobile Application Lecture. York St John University [11th February 2020].