IMPROVING THE CURRENT RESTAURANT BOOKING SYSTEM

Group 20

ASTON KATIE, CARTER DUNCAN, COXSHALL ADAM
Contents

1 Introduction ......................................................................................................................... 2
1.1 Definition of problem ........................................................................................................ 2

2 Review of related work ........................................................................................................ 3
2.1 Existing systems .................................................................................................................. 3-8
2.2 Related systems .................................................................................................................. 9-13
2.3 Analysis of research papers .............................................................................................. 14-15

3 Analysis of user requirements ........................................................................................... 16
3.1 First Persona: Mohammed Khan ....................................................................................... 16
3.2 Second Persona: Robert Henry .......................................................................................... 17
3.3 Third Persona: Sophie Barker ........................................................................................... 18

4 First generation prototypes ............................................................................................... 19
4.1 Prototype 1a – Tabler with an evaluation ........................................................................ 19-21
4.2 Prototype 1b – SmartEats with an evaluation .................................................................. 21-25
4.3 Prototype 1c – Your Table with an evaluation ................................................................. 26-29

5 Second generation prototype ............................................................................................. 30
5.1 Evaluation of tools for constructing the prototype ............................................................ 30
5.2. Description of prototype ................................................................................................. 31-39
5.3 Plan for evaluation ............................................................................................................ 40
5.4 Nielsen Heuristic evaluation ............................................................................................ 40-41
5.5 Evaluation by personas .................................................................................................... 42-44
5.6 System usability evaluation .............................................................................................. 45-47
5.7 Results and conclusions .................................................................................................. 48

6 References ......................................................................................................................... 49
1 Introduction

The purpose of this report is to provide insight into our attempt to improve upon the current system for booking a restaurant table. It will break down the problem by looking at current systems and potential users of a restaurant booking system before creating two generations of prototypes; a first generation where each member of the group seeks to improve aspects of the system and a second generation where ideas are joined together.

1.1 Definition of problem addressed

Don’t you just hate waiting in an endless queue for a table at a restaurant? Then when you finally get a table it’s in a poor location? Having to wait for you order seems like a lifetime? And when the bill comes you feel like you’ve been taken for a mug?

No more disappointing trips to the restaurant, no more waiting!

We are creating a new user interface for restaurant booking that is clear, efficient and easy to use. The design will be tailor made to individual restaurants where you have the ability to book not only your table in advance but if you wish you will be able to preselect your food where you can select the time you want to receive your order (courses) with an added promotional discount for ordering ahead of time. The new design will benefit the restaurant by cutting down complaints, potentially reducing the amount of waste and overall maximizing profits.

Online takeaway is becoming a fast growing industry and we hope to bring fine dining up to the same level. Our website won’t just be any old ordinary booking system but will allow you to read customer reviews as well as accessing priced menus, making selection of a restaurant much more suited to the user. The critical aim of our website is to get the customer the best deal out there. Our focus therefore will be on providing the user with just one website that contains all deals and promotions the restaurant has to offer, so no more time consuming hunting down vouchers, just simply click on the deal you want when booking with our website and the restaurant will be automatically notified. We live in economically aware society and being able to provide a service such as ours addresses the major problem of people feeling ripped off. Furthermore, our new system will be predominantly web based but for ease on smartphones an app will be created bringing ‘booking on the go’ into the 21st century.
2 Review of related Work

2.1 Existing systems

Research into similar systems currently in use yielded a number of results, but none that solved the proposed problem in its entirety. Current forms of online restaurant booking can be categorized into two main types of interface: Databases that allow the discovery and booking of local restaurants at a given time, and online forms for booking a table from the website of a pre-determined restaurant. The two types will be investigated here:

Bookatable:

![Bookatable Image](image)

This is the first type of interface mentioned, listing establishments nearby a chosen location. This method mostly solves both the issue of finding somewhere well-reviewed nearby and having to call them directly to arrange a booking. Tables can be booked for a given party size in any available slot on the day or often up to a month in advance. The system has not, however, been designed to help the user as much as it could.

There is no way of filtering to restaurants that have space at a specific time or even date, meaning that if a meal is being planned for a narrow window such as an hour on a certain day, the user has to manually check every result that appears to fit their other criteria. Additionally, there is no option to remove results that do not allow online booking, which could lead to some frustration.

The restaurant profiling and reviewing works relatively elegantly, managing to cover all the basic info required, plus any promotional offers that are currently available. The site does however, rely on info pages and reviews being uploaded directly, as opposed to embedding more popular reviewing and information services such as Reevoo and Tripadvisor. This requirement for newly uploaded content increases the risk of pages looking empty, which can reduce a brand’s perceived legitimacy. Overall, the site is quite effective, but while the main advantage it has over more popular databases of reviews is to allow online booking, this feature hasn’t been developed enough to steer users away from similar, more popular alternatives.
Figure 2: PizzaExpress

Figure 3: Booking times
**OpenTable: www.opentable.co.uk**

The second site in this category is OpenTable, which fits the same template as Bookatable, and a vast number of other websites for that matter. Notably, OpenTable’s homepage will redirect to a location based alternative where possible, which is a great feature to remove a step from the process and speed things up a little more.

![OpenTable](image)

**Figure 4: OpenTable**

Where Bookatable failed, OpenTable steps in. The user is asked where, when and for how many people they would like to book before any restaurants are displayed, vastly reducing the likelihood of disappointment later. Upon the retrieval of results, it is clear that issues of flexibility have definitely been considered, as rather than offering only free slots at the specified time, the availability of slots an hour in either direction is also displayed. Further flexibility is built in through the implementation of a simple drop-down box to adjust the time, date, or number of diners for all results as needed without returning to the start page; a simple feature that undoubtedly saves much time and frustration.
The individual profiles on the site are similar to Bookatable, but manage to simplify very effectively, with reviews showcased center stage below a very brief official description. This leaves plenty of space for a small map and still more easily accessed controls to allow more tinkering with final options. On this page, one last crucial feature appears; A menu tab, leading to a clean document with a standardized layout, is a final touch that could make the difference between a customer booking confidently and resorting to somewhere they have already visited.
Clearly, this website is a vast improvement on Bookatable, but it still doesn’t allow for orders to be placed when booking; tables to be selected with any precision; special requests for advanced bookings, or for any sort of discount based on combinations of these features.

**Bodega:** [www.bodegacantina.co.uk](http://www.bodegacantina.co.uk)

This example shows how online booking is usually approached by companies wishing to modernise their current system to include it. Here, Bodega allows the customer to choose between regular booking via the contact details provided, and online booking through their embedded program.
A calendar is provided, and a relatively simple interface guides the user through the necessary steps to book a table. A small amount of optimization has been missed by not allowing the user to change their date preferences from within the time preferences; many other booking systems allow the date to be nudged in one day increments from this screen in order to reduce the amount of backtracking required.

The final page really reveals the limitations of this method though, with the credential entry looking suspiciously like a web based email form. This implies that the process isn’t really automated at all, but instead mailed to the same people dealing with booking by phone, ready to be entered into a rudimentary database. While there is nothing inherently wrong with this, it is likely to introduce far more errors into proceedings, and causes more stress to everyone at the time the patrons arrive than a similar fully automated solution. This method obviously omits the functions of discovering new places to eat and reading reviews, in addition to missing a way of pre-selecting food or specific tables.
2.2 Related Systems

All online booking systems clearly share a number of similarities by nature, but there are a couple of types that are very relevant here: Train ticket booking, and theatre ticket booking.

Train booking system: redspottedhanky.com - [www.redspottedhanky.com](http://www.redspottedhanky.com)

Redspottedhanky.com’s main purpose is to minimise the cost of train tickets to consumers, but while doing this, it manages to reduce a lot of confusion and display a great range of flexibility in the way tickets are selected. A lot could be learnt here for online restaurant booking.

![Figure 12: Homepage](image-url)
In the screenshot to the left, passenger info has been entered; there is nothing initially notable about this page, but in relation to restaurants, it is important that the user can apply different modifiers to the selected time. Here, either ‘Arrive Before’, or ‘Depart After’ can be chosen, greatly reducing the required knowledge about train timetables and journey durations. In a restaurant scenario, this could be used for similar options such as ‘Leave before’ or ‘Receive food by’, along with the usual options related to distance from home / work. It is also important that railcards can be added at this stage as, again, there is one less variable for the user to bear in mind. This could be loaded with loyalty cards, student / Military / NHS discounts or promotional codes, and then applied to results upon

The next stage of booking retrieves a very useful grid of prices, which could be applied to restaurants in a variety of ways, such as average meal price, available discounts, and quality of reviews and required travelling time.
The ‘your booking’ page allows a degree of personalization that is standard among train ticket websites, but pretty unheard of amongst table bookers. By allowing a few preferences to be noted, not only can the customer have a more pleasant experience on the train, the seats can be allocated more easily, making use of the differences between individuals’. This is an elegant solution to the problem too, by reducing a whole carriage full of seats to a few check boxes. Finally, the bicycle registration section could be directly copied for pushchairs if the establishment in question has limited space.

![Image of the 'your booking' page](image1.png)

**Figure 15: Your booking**

**Theatre Ticket Booking:**

Birmingham Repertory Theatre - [www.birmingham-rep.co.uk](http://www.birmingham-rep.co.uk)

![Image of a theatre website](image2.png)

**Figure 16**
The Rep website serves quite a different purpose to the others investigated here, as it has to sell many relatively disparate products in the same location online and geographically. As a result, the front page displays the way all items are part of a whole, but do not necessarily have to be given equal advertising space or promotion. The first booking page shows how different the experience of choosing a date for tickets can be, as obviously unlike restaurants and trains, a particular service (in this case a play or show), will only be available for a predeterminded run of days. With this in mind, it does not make sense to produce a large calendar for tickets, as the amount of irrelevant information would outweigh the relevant by quite a significant proportion.

Figure 17: Show time booking
The seat selection page is where the really relevant information is here; theatres are some of the only businesses around that allow this level of personalisation with respect to tickets. From this page, a user can choose any available seat, easily visualise the position of the seat in the venue, and find the best locations for their price range, all while keeping their group together if necessary. While it isn’t clear if this results in large amounts of ‘wasted’ seats where customers have booked their groups in and left awkward single seats empty, it offers a feeling of power that online services rarely offer. A restaurant could almost certainly benefit in some way from this concept, even if the idea was largely simplified. Simplification could probably aid the functionality of this system too, as without any visual or verbal explanation of the way concession seats work and many price tiers, choosing correctly bracketed seats becomes very confusing.

![Figure 18: Seat Selection page](image)

Finally, the checkout process involves a 20 minute reserve period which, if specific seats were available for selection, would be a useful inclusion for restaurant bookings. This prevents sales being lost due to inactive users inadvertently taking up space, and encourage potential customers to follow through with their purchase by discouraging dawdling when it comes to payment.

![Figure 19: Final Stage](image)
2.3 Analysis of research papers

As the core project is looking at restaurant booking, the most logical assistance will come from the general approach with regards to online booking and customer satisfaction. One particular paper, Idyawati et al. (2010) delves into attitudes of consumers during the process of booking airline booking. A discovery of theirs was the impact of keywords. This is seen by the line "The label of well-recognized certification (e.g. “World’s Best Low Cost Airline” and “verified secured”) has a high impact on their impression and attitude to purchase online booking”. The impact of this statement infers that we can encourage newer participants to trust the system off the back of positive key words. A way to achieve is to highlight and put forward reviews of the online booking system near to the booking system itself in order to allow consumers to know that this is a trusted source.

Another issue discussed in Idyawati et al. was how poor use of language proved to be a hindrance. An example taken from the paper is:

![Figure 20: Options](image)

The problem here is that consumers are not faced with a simple Yes/No option leading to confusion. Ensuring that these inconsistencies are avoided will improve interaction with the system. For example in the context of restaurant booking, a better solution would be to ask in our situation "Do you want to select you meal now?" followed by a Yes/No option which will redirect the user to the appropriate stage in the booking process.

Cyr et al (2006) tested a model to evaluate the key areas that improve consumer satisfaction. This can be seen below:

![Figure 21: Model](image)
This is a model used for design aesthetics and m-loyalty. M-loyalty being mobile loyalty which is the willingness to re-visit the site. The model was used to test whether a consumer requires usefulness, ease of use and enjoyment from a website, in combination in order to stay loyal to it. The result showed significantly that these variables are required from a website in order to stay loyal to that site. These conclusions can be applied to our context; discovering how to incorporate these three variables into our system are critical to making the restaurant booking system worthwhile.
3 Analysis of user requirements

3.1 First persona

<table>
<thead>
<tr>
<th>Name:</th>
<th>Mohammed Khan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Occupation:</strong></td>
<td>International Student</td>
</tr>
</tbody>
</table>

**Background:**

International Muslim student studying Computer Science at the University of Birmingham
21 years old
High level of computer and technological expertise
In his third year at university

**Goals:**

- Wants to try a range of new cuisines
- Join lots of societies to meet new friends and gain new experiences
- Eat out on a regular basis as he cannot cook, but he doesn’t want to spend too much money

**Frustrations and pain points:**

- English is his second language
- Not familiar with the area
- Restaurants aren't flexible enough when booking societal events
- Is fed up of going to restaurants that are fully booked and having to hunt down one that has tables left
- Fed up of getting ripped off in a restaurant and finding out later that he could have got his food at a cheaper price if only he took the time to search for a deal.

**Scenarios:**

1. Family are flying in from Pakistan for Mohammed’s birthday and are looking to treat him to an expensive meal in a top restaurant in the centre of town. They are inviting lots of Mohammed's new university friends so need a large table. They are strict Muslims so will only eat in places that serve halal food.
2. Mohammad wants to get a quick lunch and needs to be in and out of the restaurant as soon as possible. He can’t afford to have to wait for a table or for delays in his food coming out as he has to catch a train.
3. Mohammad is the Head of the society and needs to book a large table for upcoming Christmas event. He is very disorganised and hasn’t booked the table in advance and he has 20 people to cater for.
3.2 Second persona

<table>
<thead>
<tr>
<th>Name:</th>
<th>Robert Henry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation:</td>
<td>Bank executive</td>
</tr>
</tbody>
</table>

**Background:**
Wheelchair bound, high level executive at a top UK bank 44 years old
Good level of computer and technological expertise
Has a wife and two children

**Goals:**
- Wants to book a restaurant as efficiently as possible
- Wants to always be assured that his accessibility needs are catered for

**Frustrations and pain points:**
- No indications of disability access on restaurant websites or table layouts to know where access is.
- Long waiting lists due to high demand
- Struggles to make quick lunch appointments
- Can’t easily change bookings
- Hates waiting and wants everything to be as efficient as possible.

**Scenarios:**
1. A client is arriving from abroad. Robert wants to impress him by taking him to a local restaurant, however the planes are being delayed so Robert is nervous of what time the client will arrive and be able to go to eat, and therefore Robert requires an easy system to alter his chosen booking.
2. He and his co-workers want to go for a quick lunch, so Robert wants to quickly check local restaurants, especially ones with off-peak dining so he and his co-workers can easily go down to the restaurant and be assured of a seat.
3. He is taking his wife out for a romantic meal and wants to ensure that the meal is not rushed. To this end, he would like to pre-book their meals with a degree of estimation of when each course will arrive.
### 3.3 Third persona

<table>
<thead>
<tr>
<th>Name: Sophie Baker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation: Unemployed single mother</td>
</tr>
<tr>
<td><strong>Background:</strong></td>
</tr>
<tr>
<td>- Worked in catering industry but currently unemployed</td>
</tr>
<tr>
<td>- 26 years old</td>
</tr>
<tr>
<td>- Low technological and computer expertise.</td>
</tr>
<tr>
<td>- Ability affected by poor literacy and numeracy skills</td>
</tr>
<tr>
<td>- Primary carer of her children: 11 and 6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Goals:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- To book quickly on a budget</td>
</tr>
<tr>
<td>- To ensure that her children will be catered for</td>
</tr>
<tr>
<td>- To easily share restaurant bookings with friends</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Frustrations and pain points:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Often cannot find out about kids’ menu options without phoning a restaurant</td>
</tr>
<tr>
<td>- Struggles to pay for celebratory meals throughout the year</td>
</tr>
<tr>
<td>- Doesn’t have time to traipse around town to find a restaurant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Scenarios:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Organising a birthday party for one of her children. 8 other children and additional parents in attendance. Needs to be confident in the service of the restaurant, their ability to both cater for and cope with a large number of children. Must be able to easily share the details of the booking with the other parents, otherwise far more work will be required to ensure that everyone is informed.</td>
</tr>
<tr>
<td>2. Taking visiting grandparents out for a high quality meal. It should be possible to easily assess the restaurant’s quality through pictures, reviews and testimonials in order to reassure visitors. Accessibility information should be easily retrieved without having to phone the restaurant and bypass the system anyway.</td>
</tr>
</tbody>
</table>
| 3. Organising a Hen party with a dozen friends. There should be systems in place to allow for private room booking where available, or at least a large group booking request form within the confines of the website. There should be some way of easily finding restaurants that are of the right style for the occasion, i.e. able to accommodate a rowdy
4 First generation prototypes

4.1 Prototype 1a – Tabler

When option button is pressed, sub-menu pops out with further options.

Final button brings background into focus and scrolls the page down to restaurants.

Option buttons
Click to use current location
Pictorial slider simplifies travel distance selection
The main aim of this prototype was to experiment with different types of search menu. Through representing all the options on a sort of ‘card’, many selections could be made very quickly by someone familiar with the system, and hopefully the layout is simple enough that it would not impede progress for a first-time user. The search results are shown on the same page, but darkened and slightly blurred until the user ends the filtering. This is to allow the page to work on filtering results while the user is using the menu, hopefully reducing final wait time significantly; there is also an element of feedback, as the user will see various outlines of recommendations shifting around below where they are focussed.

![A brief example of the search results](image)

After the search has been completed, this list of restaurants will slide up into view. It should be simple to investigate one further by clicking anywhere on its info card. Below, the restaurant profile gives more detail about the establishment. It features a short description from the owners, a map, reviews, options for booking a table, and choosing from the menu.
Prototype 1 – Tabler Evaluation

Functionality Considerations

- Once the first stage of searching / filtering results has been passed, there is no way to change or adjust the type of cuisine that a customer is looking for. This would slow the use of the website significantly.

- Including special requirements on the front page of the website is a very useful addition, similar to the way train booking works, should save time.

- It is easy to change your preferences without taking a step backward during the filtering process, but after this, there is no other way than to take a step backward. There should be an options pane in the next section.

- The number of people booking, and a rough time selection should have been included in the initial options pane, although time may be a feature left to a later section if this system was focussed specifically on discounts.

- There should be a Search bar for specific restaurants embedded in the header of the page.

- A section for PDF vouchers could be included for users not wanting to book online.

- The inclusion of an average price note on profiles is more useful than having to scan the menu, although it may not be especially popular with the restaurants involved.

Aesthetic Considerations

- The colour scheme doesn’t feel especially related to restaurants; the main centre section should look more papery if it is supposed to appear similar to a menu.

- The owners’ description on the restaurant profile could be a drop down menu to save users having to read it if not required. This could also make the layout cleaner.

- A red background such as this could cause problems for users with colour blindness, but only if functional elements were shown contrasted against it.

- Having a map section on the profile page is helpful but this one could be a lot better; it could be larger and / or placed somewhere else to give a better view of where the user is really looking.
4.2 Prototype 1b SmartEats

Panel 1) Start Page

Welcome to SmartEats

Would you like to:
Check restaurants
Book a table
Go to homepage

The first panel shows the first page the user sees. It provides three options for the user to go to via links.

Panel 2) List of Restaurants

Panel two is what happens if the user decides to click on book a restaurant. It returns a list of all restaurants in the database. This has been created under the assumption the user knows the restaurant they want to book with.

Restaurants are listed with star ratings and an address as basic information.

Image 3) Selecting booking time

Panel three is a simple calendar and drop down menu to select preferred time and date of booking.

Disabled checkbox included to take account of those who will need a specific table

From this panel onwards, all webpages have a ‘Go Back’ button on the top left so users can rectify mistakes.
Panel 4) Options for booking screen

Panel gives the user an option based on their preferences with an option to proceed (Yes) or look at alternative times (No)

Panel 5) Confirmation booking screen

Panel gives user option to select menu now. This is one of the key features that the project aims to add to the current system

Panel 6) Menu selection screen

A person would be able to check boxes of their chosen meal and click save to confirm.

The drop down menu allows each person to select their own menu if they wish
Overall this prototype is a storyboard to demonstrate a streamlined booking system. This is the core part of the prototype and as such it lacks the more aesthetic elements that would be required of a booking system.
Prototype 1b – SmartEats Evaluation

Functionality Considerations

- Filtering stage missing, needed otherwise booking may be tedious
- Possible long loading times between selecting preferred times and a list of options appearing
- If a menu select is to be used, a timing select screen could be used
- No indication if large parties can easily book on this system

Aesthetic Considerations

- The minimalistic design allows users to understand the system but it is not appealing to revisit
- Could change on menu select screen person1 to actual names instead
- Not specific about types of seats or seating preferences
- No tabs to divide up menu
- Lack of involvement of discounts, a key issue the project seeks to tackle
- Quick search bar if the person wants to skip to booking for a restaurant
4.3 Prototype 1c - YourTable

Homepage

If the user is signed in this links to the favourites section of the profile page

The user’s chosen restaurant page

Change date/time/number of people quickly

Type of cuisine, price range and general information will be in this textbox

Map showing your location to the restaurant and shows table availability
Chosen restaurant page continued

Offers the restaurant has. It also has quick pdf links for vouchers

Selected person one (Change the name to make it more memorable)

Choose the delay time in courses i.e. I want my dessert 40mins after my main to make a more enjoyable night out

Tick box to select food

Can choose not to order in advance and skip to table selection
Chosen restaurant page continued

Select the general area you would like to sit and restaurant will try to accommodate.

Listed by quality or service ranking etc. 5 stars to poor, the user has choice of how they order reviews.

Profile page

These will be linked to restaurant pages on this site

See your previous likes and dislikes, as if a notepad is jotting down your food choices.

What range of restaurants you are looking to dine at
**Prototype 1c – Your Table Evaluation**

**Functionality Considerations**

- The inclusion of a bar to skip certain sections. An example would be if they don’t want to select food now
- The ability to go straight to booking needs to be clearer
- The website seemed geared towards having an account, it would be helpful if a person could book without registration
- Difficult to change your restaurant once you reach the menu area. A back button must be included
- Quick search bar if the person knows where they want to book

**Aesthetic Considerations**

- Overwhelming homepage, too many boxes, more links to separate pages would clean up the homepage dramatically
- Confusion between current time and booking. Showing the time they have selected would be simpler
- More information on how to use the system is needed
- Link the menu section and the table availability section together so booking confirmation is easier for the user
- Include a price range on food for users with a budget
- Inclusion of accessibility section
5 Second generation prototype

5.1 Evaluation of tools used for constructing the prototype

Initially, Powerpoint was used for prototype two to approximate the functionality of a web based system. This was a relatively straight-forward choice, as it progressed directly from the tools used for prototype one; ideas could easily be imported from publishing programs.

Powerpoint obviously allowed us to include movement from page to page that was indicative of the way in which the final product would work, rather than the storyboarding style used previously. The ‘website’ however, is limited by the graphic tools available within the program, and also by the basic linking and animation systems implemented. The feel of the slideshow will never be just right, but is certainly useful for planning the way the system will look.

After a lot of struggling with repetitive alteration tasks in Powerpoint, we decided to try to use a simple web design tool instead. Using the basic functions offered by Wix, we could provide a more believable demonstration of our design than previously, and alterations did not require us to edit large numbers of slides. Our central concept of a ‘wheel’ of options however, could not be replicate, and now other features took a long time to implement. With lessons learnt from seeing our prototype as a ‘real’ web page, we returned to Powerpoint, where technical expertise wasn’t needed, to finish off the prototype.
5.2 Description of prototype

1. Website homepage
Menu bar for quick access to the most popular restaurants ‘Trending’ tab, as well as deals ‘Deals’ tab and helpful information that the user may require.

2. Website homepage
The user has clicked onto the main search bar ‘search dial’ and selected the time option. Here a clock dial pops out and the user picks the hour (large dial) and the minutes( smaller dial) this box then closes to reveal the time selected.

3. Website homepage
The time 12:30 has been selected and to change this the user will just need to click back onto the time symbol and reselect a new time.

4. Website homepage
The user has the option to select as many or as little options as the wish, obviously the more they select the narrower the search results will be.

5. Website homepage
For the calendar tab a calendar pops out in the middle and the user just selects a date by clicking on that particular box.

6. Website homepage
For the person selection tab a drop down box appears with the option to select up to 20 people allocating for larger parties without the hassle of having to book directly through a restaurant's website.
7. Website homepage
The user has the option for example of just ending the search query here and clicking on the central button to filter results from this particular search.

8. Website homepage
To select distance that the user wishes to travel the user must use the slider to move the plate symbol along to the particular distance they want.

9. Website homepage
The user can change the distance by just clicking back on the car symbol and again using the symbol to move to the preferred distance.

10. Website homepage
For price range a drop down box appears with the price intervals in £5 for the main meal price per head average. i.e. in this case we have selected £20-£25 category.

11. Website homepage
The user may not wish to go through all of these options and may know where they want to go straight away so in that case they can type the restaurant name in the top search bar which will automatically fill in the restaurant.

12. Website homepage
This tab is the review tab do the user can select restaurants for example that are the most popular. A drop down with the star ratings appear.
13. Website homepage

Other tabs include a search by discount percentage as well as by dietary requirement i.e. vegan, halal and vegetarian restaurants. In this example though we have only selected the 6 options above.

Search results

This is the search results for the categories that were selected. The search is located at the top, if the user has changed their mind on a particular option they do not need to restart the search put click on the drop down box and change their choice i.e. if 3 people are now going the user would just click on the people tab and click on 3 people and the search results would automatically update.

The restaurants appear in alphabetical order as all results are specific to the users requirements. In the case where there isn’t that exact time the user has chosen then the search would be ordered by the closest time to the originally selected time.

In order to view the restaurants page to find out about the restaurant the user can click on its logo or restaurant name. And they can then book from that page.

The most easy option to book a particular restaurant is to just click on the ‘Book Now’ button for a chosen restaurant.
Booking page
The users search details have been auto filled such as the restaurant name, guests, date and time. Now the user has the option of signing in where the booking details such as phone number, name and email will be auto filled making the booking a quick and efficient process. Other users will have to fill their details in manually. Here the user has the option to select the deal they want that restaurant has any deals (once clicked on the deal a terms and conditions box will appear to see if its applicable for the users requirements. The user can also type in a special request option if they wish we added this so those who have physical disabilities of dietary needs can notify the restaurant in advance so suitable requirements can be made.

Booking confirmation
In this case the user did not wish to select their food in advance and filled their details in straight away. Once the ‘Complete Booking’ button has been pressed the user can not alter any details, the user will receive an email and or text as well as the option to sign up for a much quicker booking next time.
The user can alter their booking details by signing in and going onto their profile page and clicking on ‘edit’.
Booking

Reservation Details

Guests: 2 people
Date: Monday 17th November 2014
Time: 12.30
Restaurant: Andersons

Already a member? Sign in

☐ 50% Off Main Courses
☐ Student 10% Discount
☐ None

Would you like to select your food?

☐ Yes
☐ No

Insert Name (Person 1) Insert Name (Person 2)

Flatlets Starters Sides Main Course Desserts
Whisky Wood Hot Smoked Salmon Bourgignon, Poi Shoots and Pancetta £6.95
Chicken Liver Brulee with Fig Chutney, Sage and Onion Bread, Truffle Oil Dressing £3.95
Classical Mussels Mariniere/Mussels with Wholegrain Mustard, Cream and Tarragon £6.50
Soup of the Moment £4.95
Cawl, Boul and Salmon Terrilli with Bouillabaisse Sauce, Basel Air and Baby Etoche £7.95

Starter Main Course Sides

12.30 ✗ 15.00 ✗ 13.00 ✗

Booking page

The users search details have been auto filled such as the restaurant name, guests, date and time. Now the user has the option of signing in where the booking details such as phone number, name and email will be auto filled making the booking a quick and efficient process. Other users will have to fill their details in manually. Here the user has selected the option to choice food in advance, in this case the menu box appears underneath where the user can simply click on a person ‘type in a name to make it more remember able’ and click on the different tabs to select their food. Once completed the user clicks on the ‘Confirm food selection’ which takes them to the booking page.

Booking confirmation

In this case the user chose to select their food in advance. Because they choose their food in advance they will receive a 10% discount on their food if they stick to the same options when they get to the restaurant. This works as an incentive to get people to pre-order.

Once the ‘Complete Booking’ button has been pressed the user can not alter any details, the user will receive an email and or text as well as the option to sign up for a much quicker booking next time.

The user can alter their booking details by signing in and going onto their profile page and clicking on ‘edit’.
1. Food selection
The user just clicks on the tabs in this case the user has decided not to type in their names so the default is person 1 and person 2

2. Food selection
To select an option the user clicks on the box next to the food they wish to purchase.

3. Food selection
The user does not have to go through all the tabs they can just select one course and pick the rest at the restaurant.

4. Food selection
Switching people is easy just click on the person 2 tab, when there are 10 or more people going the names must be inputted for ease

5. Food selection
The user has the additional option of selecting the timing of their courses this will however, be the same for all members attending

6. Food selection
To cancel food selection the user just needs to click ‘No’ instead of ‘Yes’ on the select a food tab and this box will close automatically
**Trending tab**
Lists the websites current most popular restaurants sorted by review ratings as well as displaying the most current review, where the user has the option of reading more reviews.

**1. Deals**
Student deals all put onto one page with the most popular used at the top, the user can use the search bar for a specific restaurant. There is no need to sign up to multiple websites and the user can click om the discount in the booking page if they didn’t go on this page.

**2. Deals**
Similar to the student deals however this can be used by all audiences and the person can book from just clicking on the logo as well as through the booking page.

**3. Deals**
The user just clicks on the time buttons to go straight into booking. The user is told what discount they will receive from the information onto of the times that can be selected.
1. Profile page
Here are the users details for a quicker booking. Also shown are current and previous restaurants so the user can go straight to the restaurant they’ve been to before by clicking on the name.

2. Profile page
The user has clicked on the ‘edit’ button for the current booking and has the option to change their requirements by typing or selecting new choices.

3. Profile page
The user has clicked on the ‘Cancel Booking’ button on their profile which automatically cancels the booking and again confirmation is sent.

4. Profile page
The user has selected to save the changes on the edit booking page and confirmation has been sent with the new booking details.
Helpful information page

Just some general information for users on how to use our booking system, as well as information on how to edit their booking.

They can use the menu bar on the side to go to another page.

The user can sign in by typing in their mobile number or email in the top bar in the appropriate locations. As well as the option to sign up to our website.

Quick search is located at the top so that the user doesn’t have to return to the homepage if they have a restaurant in mind which saves time.
5.3 Plan for evaluation

Firstly we will conduct a Nielsen’s Heuristic evaluation of our prototype to identify any underlying errors we may not have noticed on first glance, once that is completed we will move onto walkthrough the website as the persona’s we created seeing if it completes the scenario’s we set out to accomplish. From this we will ask 10 users to analysis and use our system to get their general feedback and highlight any errors we may have missed. Lastly we will sum up our findings from the three evaluation methods, suggesting corrections that need to be made to make an improved restaurant booking system.

5.4 Nielsen’s Heuristics evaluation

<table>
<thead>
<tr>
<th>1. Visibility of system status</th>
<th>Minimised loading screens the search bar automatically makes the selected changes and is a good indication of how far along the user is in the search process. The booking page has all the information present on one page so loading time is kept to a minimum. Although there are no loading screens, getting the search results (list format) is potentially slow.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Match between system and real world</td>
<td>The process of searching feels natural choosing them from appropriate pictures that are easy to read. Simple menu bar similar to what is on virtual every other site. Easy selection tools for even the basic users to understand i.e. the calendar you just click on a date which is fairly obvious. Information appears in a logical order with the searched results ordered by the user’s requests. As well as this the booking page is presented in a natural order with the users details towards the bottom of the page.</td>
</tr>
<tr>
<td>3. User control and freedom</td>
<td>Users are not forced to go down a particular path and are given many options to choose i.e. with the search bar they can select as many or as little options as they like and with the booking system that are prompted to sign in or select food etc. Users can go back to the previous screen by selecting the back button. Quick link to the home page through the menu bar where they can then change their search immediately. The user is able to edit at three separate points: 1. Change decision on the search dial 2. Drop down menu on the restaurant list 3. After booking confirmation on the profile page</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4. Consistency and standards</td>
<td>The website does not employ any uncommon design elements. Experienced internet users should be familiar with the layout and the design elements. Use of sign in and sign up convention as not to confuse the users—sticking to the same standards. Consistent font and color scheme used throughout—nothing too distracting. The sign in button is blue which sticks to the convention.</td>
</tr>
<tr>
<td>5. Error prevention</td>
<td>There is a confirmation option before they commit to the action. Need to have an error message for when the person selects a date that has already passed, or if there are no search’s to be found.</td>
</tr>
<tr>
<td>6. Recognition rather than recall</td>
<td>The user does not need to remember information when moving through the pages as the searched requests are present on all the booking pages. The information selected stays on the screen while using the search dial and can easily be changed. Instructions in the booking part of the system are visible.</td>
</tr>
<tr>
<td>7. Flexibility and efficiency of use</td>
<td>Very efficient, step by step instructions. The user can end the booking any time they want up until the confirmation page. The user can also change their search results at any point up until the booking confirmation page. And instructions on how to change a booking are very simple.</td>
</tr>
<tr>
<td>8. Minimalist design</td>
<td>Minimalistic information on the home screen and booking system without food selected. Too much information on one screen where food has been selected and booking has been confirmed.</td>
</tr>
<tr>
<td>9. Help error recovery</td>
<td>No technical error recovery but ability to change booking afterwards can fix real world errors.</td>
</tr>
<tr>
<td>10. Help and documentation</td>
<td>Helpful information section is very informative and gives the user a walkthrough of our site.</td>
</tr>
</tbody>
</table>
5.5 Evaluation by persona’s

Persona 1: Mohammed Khan

As a user with a high level of technological skill and computer expertise, Mohammed should have absolutely no issue with using this system. The system is more designed for general computer users to use so he should not be in any difficult position using the system. The bigger issue for Mohammed approaching this system is that English is his second language. The system itself does not have a function to switch languages, though this is more to do with the fact that this site is built for users in the United Kingdom. Looking at the language used in the prototype, it is generally simple so Mohammed should be able to comfortably use this system and the use of images rather than words in the search dial would be a help to Mohammed.

Booking for the first scenario (a family visit), Mohammed will be helped by the dietary requirements filter on the search dial, it will allow him to instantly ignore all non-halal restaurants so he can fulfill his family’s strict Muslim customs. In terms of finding a top restaurant, Mohammed will have two options here to finding his family’s desired restaurant. Firstly on the search dial, there are two filters that will assist Mohammed: a tab for filtering by price range and a tab for filtering by a restaurant star rating. There is also the trending restaurant section; this shows the most popular restaurants in the area. Mohammed can use this to cross reference the static ratings of restaurants and the general public ratings of restaurants.

Mohammed second scenario however, booking for a quick lunch, is not as catered for on the initial search dial i.e. there is no indication of what restaurants are best for a quick lunch without traversing reviews. On the more positive side, when booking the restaurant, Mohammed is providing with an option to select his food in advance and what time he wants each course to arrive. Such a feature is incredibly useful for Mohammed if the restaurant can provide such service as it will allow Mohammed to select a single course to be at his table by a specific time so he can eat and leave easily for his train.

Mohammed final scenario, booking for a Christmas party for his society, finding a large table won’t be the problem, as the search dial can be filtered for a larger group. The problem will be the time constraints. This isn’t sufficiently dealt with in the prototype as it will give times but it is still restricted by the constraints of the restaurant.
Persona 2: Robert Henry

As a user with a good level of technological skill and computer expertise, Robert shouldn’t have a problem using this system on a functional basis. The system is more designed for general computer users to use so he should not be in any difficult position using the system.

For the scenario where Robert is dealing with a client from abroad. The function that on his profile page that allow him to modify booking is key for him. By being able to adjust his booking when he knows that the client will be delayed gives Robert more freedom in the booking to impress his client. He can also easily filter restaurants by star ratings to choose the best restaurant to impress his client.

For his second scenario, the inclusion of an off-peak dining section gives Robert a better indication of restaurants he will have more success going to on the ad hoc without booking with his co-workers. But in a more general sense when booking for the same day, it isn’t indicated if Robert can use the booking system for this same day quick lunch, he is more relying on the restaurant than the system

Robert’s final scenario is taking his wife out for a romantic meal. He have a few parts of the system to help him. Firstly, the layout of the restaurant page not having an accessibility section is a problem for Robert being a wheelchair user; he has to rely on the restaurants having one rather than the booking site telling him which ones do. However being able to pre-book his meal is useful. He can discuss what he and his wife want, book in advance and choose times where the courses are not rushed out or take forever to arrive.
Persona 3: Sophie Baker (Page 18)

Sophie’s issues regarding technology should, with any luck, be addressed by the main restaurant searching system here, as the large amount of graphical content should make things more intuitive than most systems. The interface should, in fact, guide her through the whole booking process with relative ease; there are options throughout to opt out of using certain features, which allow those people less confident with technology to stay within their comfort zone where possible. The options to book food online, or even specify a time when you would like food to be ready are quite advanced and potentially objectionable for example. The user can essentially ignore these parts of the process, hopefully boosting confidence.

If booking for her first scenario (a children’s birthday party), finding a restaurant with good reviews and that can accommodate the large party shouldn’t be a problem. Things start to go awry however, when she tries to ensure that the restaurant will be happy and able to host a children’s party, or even any children at all. There is no option within our requirements sections to note this, so it would only become clear if the restaurant mentioned their stance on children within their description. There is also no way of sharing booking details with other parents without manually copying out the information and sending it to them. This would be easy to implement in further prototypes though, as identifying this as a problem is the main part of the solution.

In the second scenario (taking grandparents out for a meal), it would be relatively easy to be sure of the quality of any given establishment through the use of the reviewing system and flicking through included photos. It would also be easy to check other credentials such as being in a reputable location, and that the food is deemed ‘classy’ if the object of the meal is to impress the other participants. Something that may not be covered in this situation though, is that if the website itself is to be used as a tool of reassurance, it may fall short of grandparents’ expectations of what a high-class system would look like. The styling of the prototype is very much functional; the lack of white-space and minimalist styling may reduce the chances of impressing. Accessibility could be checked easily from the profile pages of a chosen restaurant. This isn’t the easiest solution if users find themselves searching through multiple restaurants that do not fit the access criteria, but it is difficult to find guidelines general enough to use as a filter for the entire restaurant search.

Finally, if Sophie was using the system to organise a Hen party with a dozen friends, she would find herself using the website in much the same way as she did with the children’s party. There would be no requirements for a children’s menu, but a private room could potentially be needed, and the restaurant would need to know that they were expecting a large and rowdy party. Sophie could likely determine whether the restaurant would have an appropriate atmosphere or not by reading through a profile, but she would have to do this manually; a last resort for a system that is trying to alleviate the need for phone calls to restaurants. There is no way of determining if the restaurant will be accommodating to a rowdy group using this system, but aside from listing it in the description, It isn’t something that owners would be especially keen to promote, as it would inevitably put off other potential diners.
5.6 System Usability Scores

We allowed 10 people to use our system where there were ages ranging from 17 to 58 and the level of computer abilities varied greatly. We interviewed each user separately, first demonstrating how the website works, then allowing them to go through it themselves. We informed them they could ask questions about what certain features did. However, in general very few questions were asked as the general consensus was that the system was pretty basic to follow.

1. I think that I would like to use this system frequently
   The general consensus was that our booking system would appeal more to people between the ages of 20 – 35 as this was the most likely category to use a computer in order to actually book a table regardless of our website. Although we did find when we explained how restaurant deals and promotions worked slightly different on our website being that they are totally open to anyone who visits the site with no signing up required, as well as the fact that they didn’t even have to go on the deals page and that the deals for that particular restaurant would be automatically located on the booking page we had more of peak in interest with the general consensus believing that we had fixed a major problem reducing the hassle a person has to go through in order to get a deal.

2. I found the system unnecessarily complex
   One major flaw of our website was that people wanted a better quick search bar, suggesting it to be located central near or within the search dial, if they have a restaurant in mind. As this was not included in our dial but on the top of the website in the corner most people didn’t seem to notice it and thought it was a bit of a hassle if they knew already exactly where they wanted to go.
   The overall conclusion was that the website was generally not very complex, the pictures in the dial were pretty easy to understand what they were referring to, and the boxes that popped out were very basic and required no further notes to point the user into what to do next.

3. I thought the system was easy to use
   The overall opinion on the ease of use of our website was very good with most users strongly agreeing that it wasn’t very difficult to navigate.
   The main drawback was the profile page. Here the users found it difficult in actually editing a booking and were unaware if an actual change in booking could be implemented. For example if the user on short notice wished to change the restaurant they booked with there was no indication on the availability of that restaurant on whether they could cater on not, well not until a confirmation was sent, but there was no direction on what to do if this was not the case.
   The majority of the users found the website very easy to navigate through the various pages and everything that had the ability to take you to a new page ‘button’ was clearly indicated. The search dial had the greatest feedback with users preferring it to other websites saying that it was easy to understand off the pictures what you were selecting and loved the idea you could select as many or as little options as you liked.
4. I think that I would need the support of a technical person to be able to use this system
Every user we asked strongly disagreed with this question. The website in general is put in layman’s terminology, so even those with poor English skills or a lack of a computer science background can easily use it. The selected food option is relatively easy with very users getting the general idea that you click on the course you want and click the box to select an item, there was no issues at this phase. Although, again people were against the layout of the profile page opting for a different and much simpler way to alter a booking.

5. I found the various functions in this system were well integrated
All users agreed with this statement, feeling the website flowed very well, with just about the right amount of information on each page. As we opted for the boxes to appear on the same page rather than loading up new pages for each stage of the booking system, it added to the general feel that the website functioned well, cutting down massively on loading times that appear across other example websites we showed them from our prior research.

6. I thought there was too much inconsistency in this system
They strongly disagreed with this statement, stating that the fact that the same colour scheme throughout added to the clarity of the system. Those that were more tech savvy liked the fact that the way words were phased was consistent throughout and in general we stuck to the typical layout of a booking system. They however felt that the profile page let the website down a little and that it would have been nice to have a recommended restaurant list potentially in there to make it more focused to the user’s requirements. As well as the potential ability to incorporate an option where they can rebook a previous restaurant they have been to before without having to research for it but just quickly select it from their ‘previous restaurants’ box on their own profile page.

7. I would imagine that most people would learn to use this system very quickly
The overall opinion on the this question was ‘agree’ with there being a slight issue that the older generation may get confused with the actual booking part with there being several options to choose from which is a completely new concept. However, the general ease of this website with the choice of simple terminology opens it up to a range of people.

8. I found the system very cumbersome to use
The system was believed to be very fast and not very cumbersome at all. Although the select a food and time option which is a factor that makes our website unique was believed to be in general focused to those that had tie to go through all the options. Although others did believe that for people in a rush to get a table, eat and leave would enjoy this option as there would be no hanging around. The overall consensus was that the idea of booking food in advance was lovely but maybe impractical although this did not make the website was not overly complicated.
9. I felt very confident using the system
All of the users felt very confident in using our system. They agreed that the design of the website was practical and easy to follow and that there wasn’t actually anything really technical occurring par the profile page when 2 out of the 10 users didn’t fully understand how they would go about changing a booking although could see how easy it was to cancel a booking as we stuck to website normalities.

10. I needed to learn a lot of things before I could get going with this system
No one felt that they need to do any further research in order to use our booking system as we stuck to the general norms of a booking system, but added a few touches that addressed the problem our new system was tackling (getting deals easily and the ability to preselect food and timings of your order).

The overall feedback we received from the users we had use our system was that they liked the fact that everything was in layman’s terms, and that it was a very interactive process making booking a table. They also felt that one of the best aspects of our website was making all deals accessibly to every user from just one single page, saving countless hours searching for deals and overall making booking a restaurant a much more enjoyable process. They liked the idea of off-peak dining and thought it was a great concept, and that clicking on the time slot automatically took you to booking that table, they believed was very efficient and easy.

The criticisms we did receive were that the profile page needed to be more user focused rather than generic, as well as quick search options on the menu page being focused more central, similarly with the deals page with the idea to search by restaurant. They also stated that when clicking on the deals in the booking stage, there needed to be an indication or even just a few sentences on how it is redeemed, and what you need to purchase if anything in order to get that specific deal, although this information is found on the deal page, the users agreed it is clearly a good idea to have during the booking so the user doesn’t have to hunt the offer down, which is the main problem our booking system is looking to fix. Lastly we didn’t actually include the promotional offer that discount would be given if booked in advance but stated it verbally to the user, so this would be just a minor correction we would need to make on the next prototype.
5.7 Results and conclusions

Overall we have created a very easy system to use, although not without flaws we did create a website that achieved the main goals set out in the definition of the problem we were addressing, which in short was to create a new booking system that catered to the growing economically conscious society we have today, by making deals accessible on just one single website. As well as potentially cutting down the amount of time taken to receive your order with the option to book your food in advance which not only benefits those on a busy schedule, but also the restaurant in knowing rough numbers of products to order in potentially reducing the restaurants costs. Additional the major bane in people lives when going to a restaurant is the waiting time we look to remove this completely with the user controlling when they want their food. Therefore our main objective was to create a more interactive and enjoyable booking system encouraging people to book in advance, bringing restaurants up to the same efficiency of fast food establishments.

When running our prototype as our users through their scenarios we found similar errors to those that were found when conducting the system user ability scores. As we went through our prototypes we did find that the only scenario’s that were difficult to achieve were the ones where they opted for a quick booking, in this case as we created the website we went straight to the search bar at the top subconsciously, however, it wasn’t until testing it with ‘real’ users we found the true error in that it wasn’t exactly easy to find.

The fact that we incorporated a range of options in the search bar made completing the scenarios we outlined relatively easy as the layout is pretty basic and easy to follow. A further downside was that the search results were in alphabetical order, the users we tested our system on felt that maybe they can also change this to maybe a bar that can organise it by current top rating if that tab wasn’t selected, price if that wasn’t selected as well as newly added restaurants. We felt this was a very important aspect and would include it in any future prototypes we would make.

Overall we need to make some slight adjustments on our website, such as making it more user focused, e.g. if signed in they could see recommended restaurants or deals for them making it more personal to the user. Additionally the layout of the booking system when ordering food needs to change slightly so that it can cater for larger parties, we found when going through our scenarios it would be pretty hard to book on the spot, so potentially there could be an option which allows you to add food on after the booking has been made so that orders can be submitted when all members of the party have decided, as it is very unlikely that they would all be on the website at the same time. We even had an idea that when making a booking, to appeal more into the new social networking age that everyone on the booking i.e. insert more than one email address/ phone number can be notified of the booking rather than just the sole user that made the booking, as well as them personally being able to change or add food onto the booking at a later stage without the sole user having to intervene.
6 References


Websites used:

www.bookatable.co.uk
www.opentable.co.uk
www.bodegacantina.co.uk
www.redspottedhanky.com
www.birmingham-rep.co.uk