Assignment Report

Rich Web Applications

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Abstract

This paper describes the technologies and approach that can be used to create and maintain a food app website. The paper will discuss the design of our application, going into detail about why we chose certain styles and layouts. It will go into detail about how the application works, using various AngularJS techniques, mainly the use of Angular routing and the ngModel, a brief breakdown of what each of the functions in our website do and how we went about doing them, where we used typescript components, what each of the components contains, HTML pages and CSS styling. This paper will also feature various screenshots from the final design of the website, with a brief program walkthrough to show what does what and which parts of the site it takes you too, as well as showing the required features that are in this application. Finally, there will be a brief overview of what we learned from doing this project and how it was a good learning experience.

Design of Application

The design of the application was based around the concept of a single page website. This is done through the use of routing in AngularJS. By having the content change in one main area it appears as though the pages do not need to completely load each time the user navigates to another page.

While keeping this concept of a single page website in mind, we had to plan how the content was to be organised so that the single page concept could be implemented as seamlessly as possible. We decided to have the homepage contain all the restaurants available to the user on one page. We added an area within this page for the user to filter the results based on what the user was looking for in regards to the location of the restaurant or the type of cuisine or rating the restaurant has received from other users.

This filtering process is achieved by allowing the user to select the options from a drop down list which is populated with data from the restaurants on the website. The content within the main content area updates according to what the user has chosen.

The user also has the option, with every restaurant that appears on the website, to go to a page which contains more details on the restaurant. This is also achieved through the use of routing by passing the restaurants id number to the /details routerLink.

The menu bar on the top of the page allows the user to navigate to an About page, Services page and a Contact page. These pages, once selected from the menu bar will load in the main content area, removing the restaurants and replacing them with the content of their respective pages.

The contents of all of these pages (restaurants, restaurant details, about, services, contact) are all stored within components which are activated when routed to from the menu bar or other navigational components such as drop down menu’s or buttons.

The restaurants themselves are stored in a restaurant-service. This restaurant service is then used in other parts of the website as a provider, which allows these pages to access the data held within the service. An example of this functionality is within the details pages for the restaurants. The details pages take a parameter of the id of the restaurant. Then this id number is used to call for the data held within the restaurant service. Once this data is received a restaurant image, map image and menu image are initialised on the page loading using ngOnInit(). All this data is then passed to a detail component html file which lays out the page with the details gathered from the service and ngOnInit().

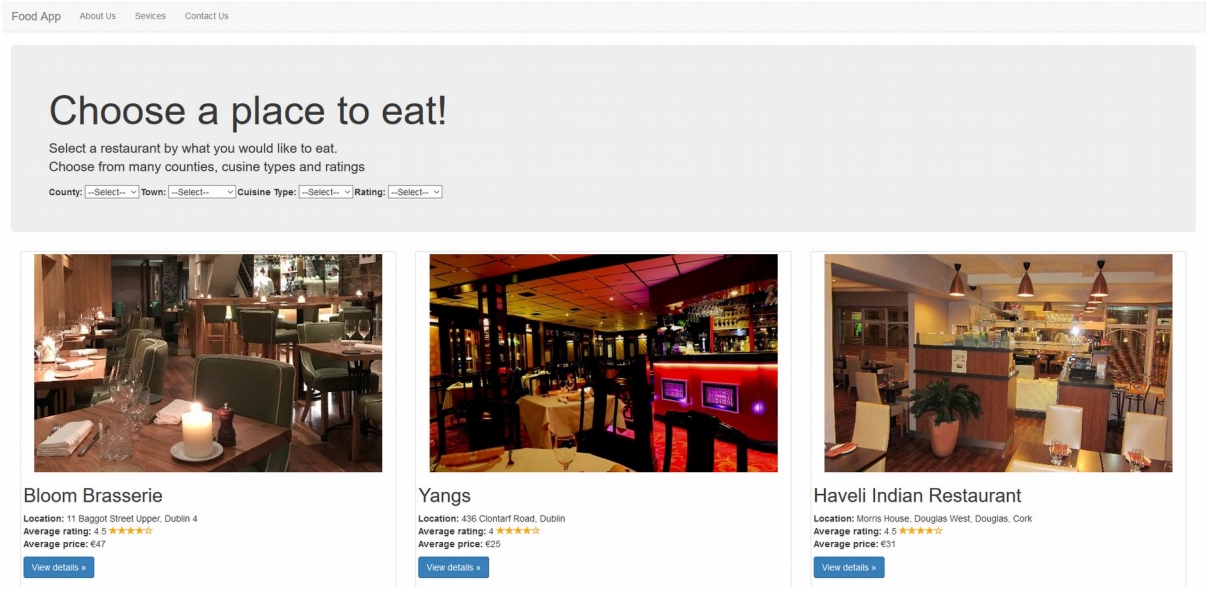
We also implemented the use of Bootstrap in order to organise the pages easily and to speed up the process of developing the website by using Bootstrap to speed up the design of things such as buttons etc. By using Bootstrap we achieved a responsive website design which allows this website to be viewed on smaller handheld devices.

How it works

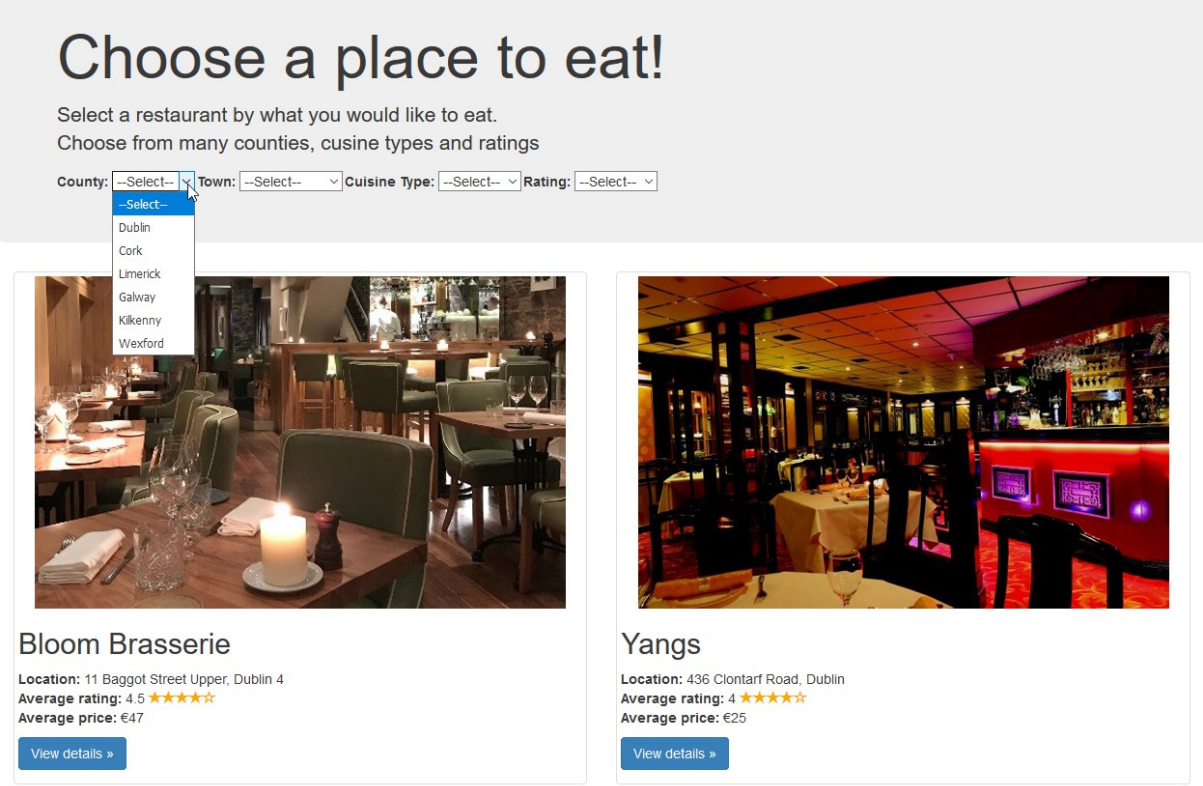
This application uses various technologies within web development, mainly AngularJS2, JSON, TypeScript and HTML. The app makes use of routing, allowing the user to click on various links with the page refreshing instantly to show a new display, with options to go back to the main page or any other pages on the site still present. The user is able to select a county via drop down menu, and will be able to see the various restaurants within that county – this will be achieved through the use of ngModel. The user will also be able to filter through the website, using various options like Town, Cuisine Type and Rating. This makes use of the ngModel, calling the selected counties ID, displaying the certain restaurants that contain the matching county.

The home page of the website features a brief summary of the current restaurants available for viewing. In this summary, the user will see a picture of the restaurant, the name and address, the average star rating, the average price and a view details button. These features are handled through Typescript components, each with their own unique functionality. The average star rating is handled through ngOnInit, with multiple if statements determining the rating of the restaurant, while the name, address and picture are handled through an array found in the restaurant-service component, and make use of the Injectable feature. The details button makes use of angular routing, taking the user to the details page of the restaurant based on the ID. This page contains the main profile for the restaurant, featuring name, address, a picture of the restaurant, opening hours, cuisines, menus, map location and facilities, again, all handled within the restaurant service component using the Injectable feature. Also found on this page are the reviews left by past customers, these reviews are stored in an array found in the restaurant service component and are called on based on which restaurant the user is viewing. Users are also able to leave their own review, which makes use of the ngModel, storing their review in the array and displaying it in the console.

Program walk through



When the user loads the homepage they are presented with a list of all the available restaurants on the website. There is a menu bar at the top of the page where the user can navigate through the pages About Us / Services / Contact Us. These pages are loaded using angular routing which prevents the entire page being reloaded on each navigational change. In essence this creates a one page website where all the content is loaded into one part of the webpage without having to load the entire webpage all over again. On the homepage there is also a drop-down navigation area where the user can choose to filter the restaurants based on the County / Town / Cuisine type / rating.



As you can see in this screenshot the user can select from a list of counties. Once one of these options is selected the main content are of the webpage will reload with the new content inserted. By using angular routing this process occurs very quickly leading to a more enjoyable experience for the user while using the website.

The user can also select a particular town from within the county they have chosen.

Food App About Us Sevices Contact Us

Yangs

A classic style chinese experience

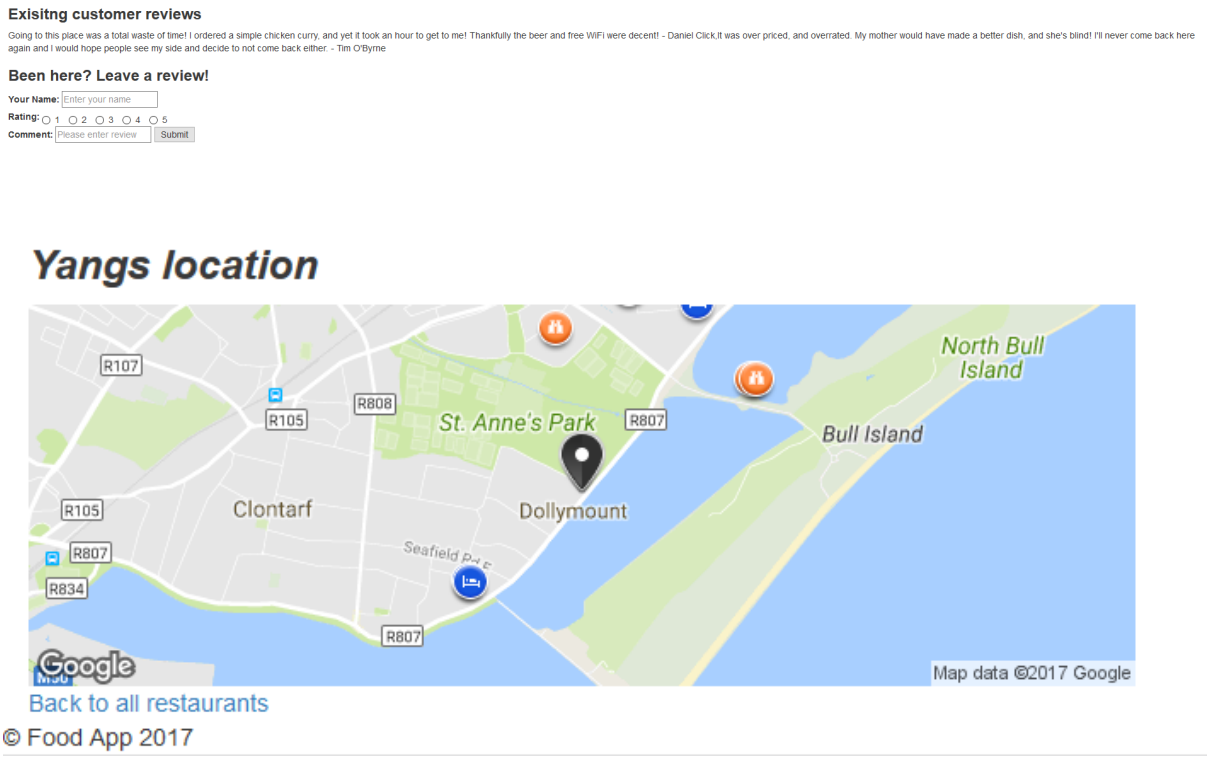
Location: 436 Clontarf Road, Dublin
Opening hours: 5pm-10pm
Cuisines: Chinese
Facilities available: Takeout, Reservations, Wheelchair accessible

Menu

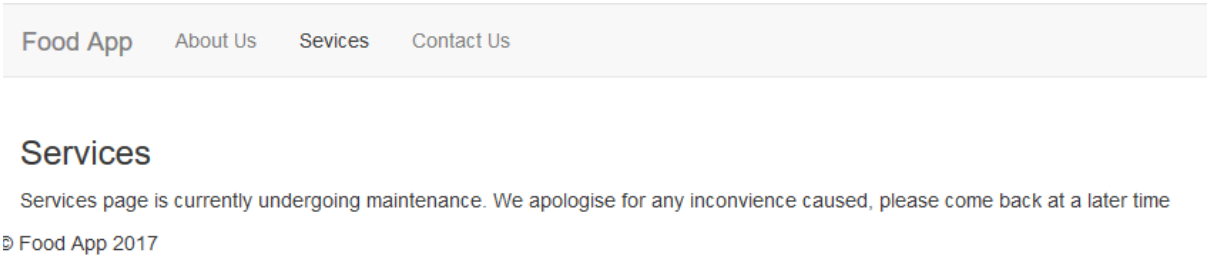
头盘 Appetizers

锅贴 *8 *11	€6.90
"Waltip" Dumplings Pan Fried Chicken Dumplings	
香酥羊 *7 *8	€8.90
Crispy Aromatic Lamb with homemade sauce	
海鲜松 (Two Person Or More)	€16.90
Seafood Sung serve on fresh Lettuce for Two	
肉松生菜包 (Two Person Or More) *6 *7 *8	€15.90
Meat Sung with peanut serve on fresh Lettuce for two	
[illegible] *7 *8	€7.90

When the user selects the option “View details >>” on the homepage they navigate to the page which contains more details information based on the restaurant chosen by the user. This page includes details such as location, opening hours, cuisines, facilities available in the restaurant, a menu, reviews from previous customers, an option to leave your own review and an image of the location of the restaurant from google maps.

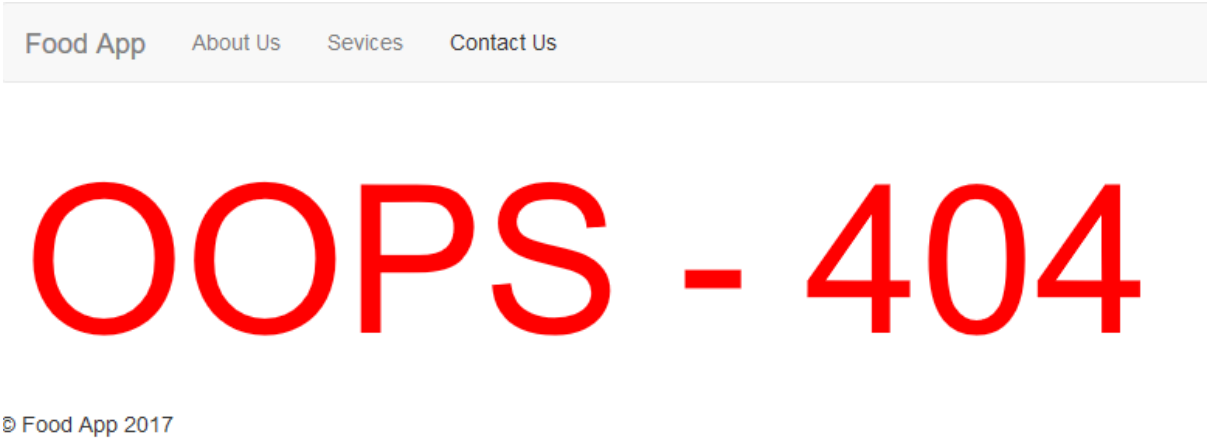


If the user chooses to navigate to the services page from the menu bar they are directed to a page containing information on the services that can be provided by Food App.



If the user selects the navigation item to the contact us page they will be directed to a webpage that does not currently exist. This page will show a default 404 message page. We

did this to show that this capability is achievable using angular. This webpage will be presented anytime a user tries to navigate to a webpage that does not currently exist or is otherwise not available at that moment in time.



What we learned

During the process of developing this website, we learned a lot about how routing is implemented in a larger website than we were used to developing. This allows us to gain a deeper understanding of how routing is accomplished. We also learned how useful using AngularJS is when developing websites, as it acts as a single page application, whereas previously when developing websites, we would use multiple HTML and Javascript files with no routing, two-way binding or injectables, making the page constantly refresh when clicking a new link on the website. Using AngularJS this way is more user efficient than we previously thought.

References

W3schools.com. (2017). *Angular Routing*. [online] Available at: https://www.w3schools.com/angular/angular_routing.asp [Accessed 24 Nov. 2017].

Mark Otto, a. (2017). *Bootstrap*. [online] Getbootstrap.com. Available at: https://getbootstrap.com/ [Accessed 30 Nov. 2017].