

**University of Arizona, Eller College of Management**  
**Web Mining and Analytics**

**Business Proposal**



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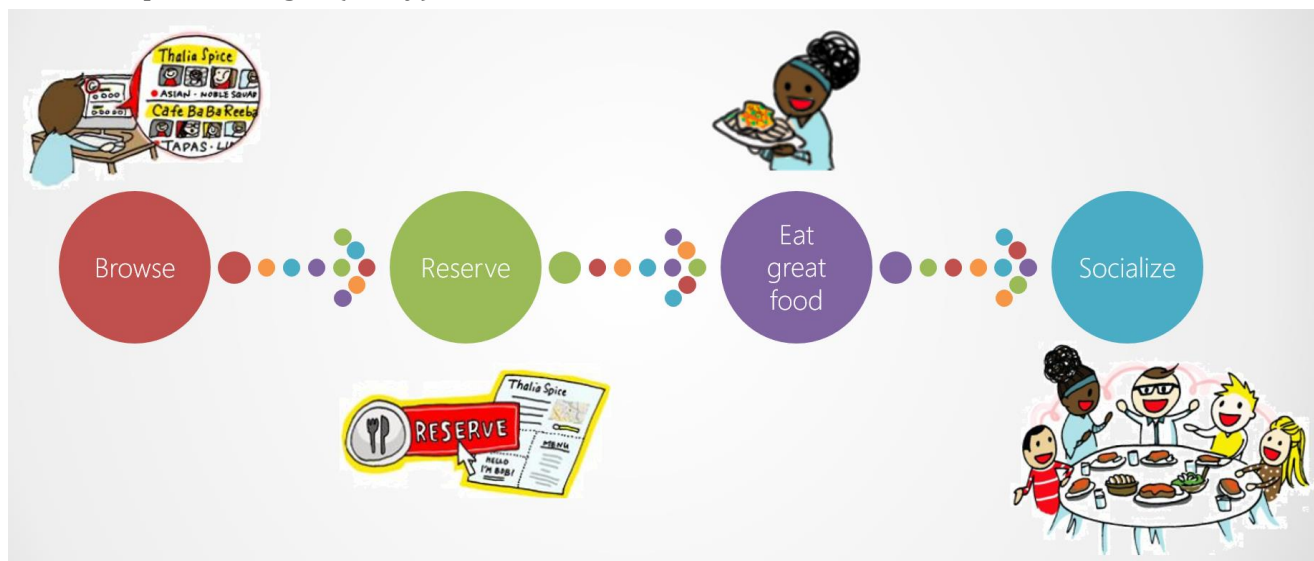
## 1.1. Background

*'Connecting people over food & to enjoy meals inside someone else's home - MeetYourFood.com'*

How many people around the world have a dream to open their own restaurant, a food joint or small snack shop? How many people love cooking, meeting new people and love talking about their tradition? How many people travelling, living or sometimes to distract themselves out of mundane routine want to enjoy food that isn't from a restaurant nor from their kitchen? We believe there are many people who want to be on either side and there aren't too many platforms for them to live their dream. Our business proposal is to make a marketplace for people who love food & meet people who love cooking and offering it at their home.

## 1.2. Objective

- 1) On MYF, people who love cooking (called as **HOST**); are available once a week, month or forever can post about their food OR What they can cook, what are they good at OR would they like to have a breakfast, lunch, dinner, supper or are they with happy packing OR are they offering free or do they want to trade?
- 2) People who are interested in eating (called as **Guest**) can look for available options, signup and book a deal, & enjoy authentic, sometimes quick, novel or who knows a healthy food.
- 3) Authenticity of Guest & Host can be confirmed by: Reviews, Feedbacks, Social Identity, Description, Images (if any)



## 1.3. Market Landscape

### 1.3.1. Competitors/existing players

- 1) **Epicurely**: UK based start-up acquired by Melba in year 2012
- 2) **EatWith**: Major competitor, started in 2010
- 3) **SideTour**: SideTour is an online marketplace for experiences (not just food) that help you explore your city, acquired by Groupon on Sep'13
- 4) **VoulezVousDiner**: It is a market place for eating with locals
- 5) **Feastly**: Launched in Jan 2012 and connects people over meals

### 1.3.2. Unique features/functionality

- 1) **Transportation** - After the user selects the meal, user will get the option to avail cab pickup and drop facility within the website
- 2) **User Profiling** - Generate detailed profile by harnessing data from social websites like Facebook, Google+, Twitter, Pinterest, Instagram and share with HOST & GUEST; helping in identity authentication
- 3) **Shopping** - Suggest items that guest would be interested in buying e.g. Recipe ingredients, utensils & traditional & cultural artefacts
- 4) **Suggestions** - Based on your past meals and your interest suggest people relevant deals
- 5) **Ubiquitous presence** - Our solution is a scalable platform, and is available on multiple devices and across all major platforms so that users get the same experience on any device.
- 6) **Health Conscious** - By using 'FatSecret' API, we are giving the users with the option to see the nutritional information for each ingredient that goes into making the dishes, so the users can not only know their calorie-intake, but can also plan their diet
- 7) **Guest Chefs** - The concept is very novel - inviting guest chef's to your restaurant and hosting on MYF by creating an event & inviting people to book the event. Restaurant owners can invite guest chefs to their restaurants, frequency as it suits them. Selection of Guest chefs will not be covered by our portal. The concept is similar to website selling tickets for a concert as artists are invited to perform in a concert similarly guest chefs will be invited to restaurants and people can book event via MYF

### 1.3.3. Existing gaps/opportunities

- 1) Lack of in-person interaction - With changing times and the online social world, people don't get the opportunity to meet each other in person, and mostly eat alone
- 2) Difficult to meet new people outside work
- 3) Very few places for authentic food
- 4) Limited interactions with chef
- 5) New Market and only few competitors, they aren't providing service throughout the world. Hence, an opportunity
- 6) Social Media not extensively used to fetch information and sharing detailed profile information
- 7) Shopping and Transportation services not provided by any competitor

### 1.3.4. Barriers to entry

- 1) SideTour.com is owned by Groupon who is a giant in the food industry, hence they are dominant
- 2) Awareness and establishing trust & authenticity with Guests & Hosts
- 3) Security concern in countries with dominance of cheating people & unethical behaviour
- 4) People might not be willing to share personal details and invite people at their home

## 1.4. System Design

### 1.4.1. System Components/Functionalities

Our solution provides interface for both Hosts, Guests and for the administrators too to effectively control the entire services hosted online. Each will have individual logins segregated according to respective account types.

- 1) **Hosts:** They can put their Menu of the day, special dishes, offers and about special festival food via their individual accounts. Making the data available to Guests.
- 2) **Guests:** Guests can connect with hosts, talk to them via email/phone, accept the deals, and post reviews/feedback on host's specific pages. These comments will allow our application to collect information and do analytics to make relevant decision for future suggestions.
- 3) **Admins:** Admins can control the entire content posted online to make it more streamlined and allowing providers and Guests to interact with each other.

#### Technical Specifications:

- 1) **Cloud Services:** Amazon EC2, Google App Engine
- 2) **Database:** Amazon RDS (Relational Database Service)
- 3) **Data Scrapping:** Mozenda Tool
- 4) **Web Components:** HTML5, CSS, JQuery/Javascript, APIs

### 1.4.2. API Integration

#### 1.4.2.1. Amazon



#### Product Search using Amazon API:

Amazon Product search is an important feature that Host can use on MeetYourFood website. Host can search for food related products that he wishes to buy online on Amazon. To make it more appropriate, search results are always narrowed to only grocery items. For example, search for Car always results in food products related to string "car" and not automobiles. This is considered as one of our novelty feature when compared to our competitors.

#### **Steps involved in implementing Amazon API:**

We have used Amazon - Product Advertising API to fulfil this functionality. Amazon provides lot of operations in this single API and we are specifically using ItemSearch for our functionality.

- **ItemSearch operation:**

The ItemSearch operation returns items that satisfy the search criteria, including one or more search indices. ItemSearch returns up to ten search results per page.

- **Input Parameters:**

Input Parameters	Description	Required	Example
Availability	Enables ItemSearch to return only those items that are available.	Yes	Available or New
SearchIndex	The product category to search.	Yes	Grocery

ResponseGroup	Specifies the types of values to return. You can specify multiple response groups in one request by separating them with commas.	No	Large, Images, Accessories
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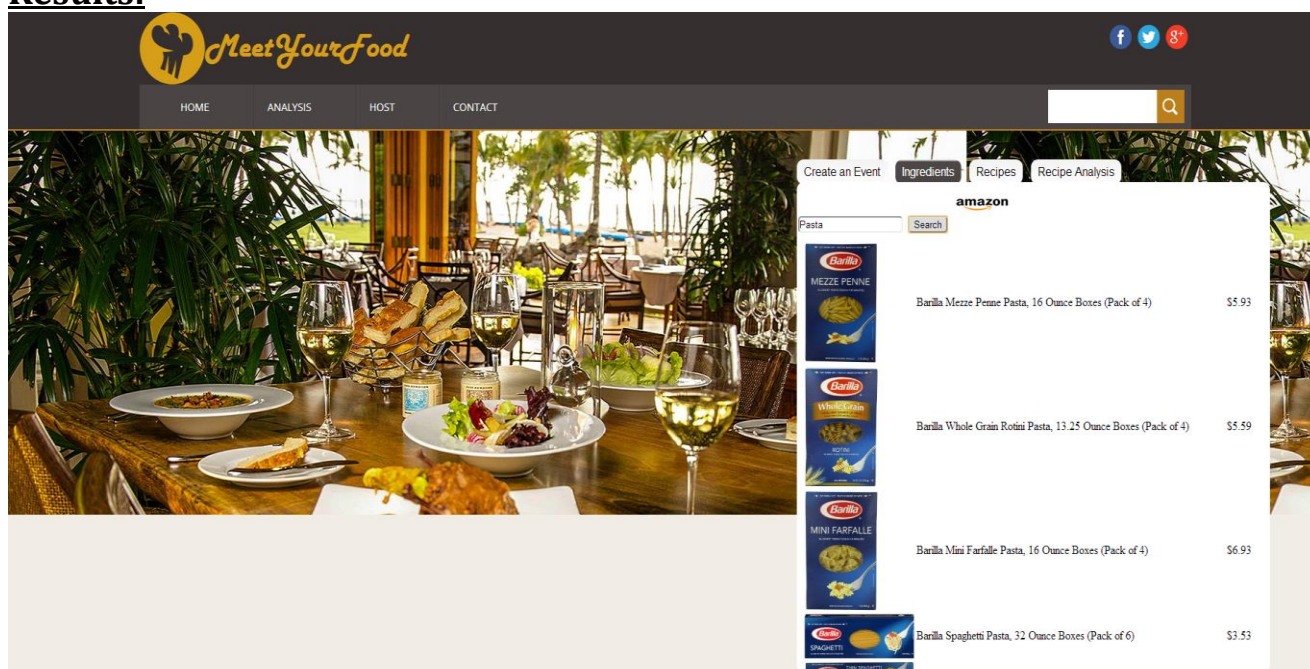
- **Sample output Response:**

We would be receiving details such as ASIN id (Amazon Standard Identification Number), Item Details, Product Group etc. The sample output that we received below is in JSON format

```
<TotalResults>372</TotalResults>
<TotalPages>38</TotalPages>
<Item>
<ASIN>B00021HBN6</ASIN>
<ItemAttributes>
<Manufacturer>Radio Flyer</Manufacturer>
<ProductGroup>Toy</ProductGroup>
<Title>Radio Flyer Retro Rocket</Title>
</ItemAttributes>
</Item>
<Item>
<ASIN>B0007MZV3C</ASIN>
<ItemAttributes>
<Manufacturer>Razor USA LLC</Manufacturer>
<ProductGroup>Toy</ProductGroup>
<Title>Razor Dirt Rocket MX350 Bike</Title>
</ItemAttributes>
</Item>
```

- These responses are cleaned and converted into Java Objects using JSON parsers.
- Data is then passed to JSP pages using Java Servlets.
- Formatted data is viewed on Web pages as product details along with images and price.

## Results:





#### 1.4.2.2. Twitter, Facebook, YouTube



Information on past reviews about locations, compiled videos, twitter comments on dishes and user experiences about their eating etc., can be provided through these APIs.

We used Facebook API in order to implement or give our users to login via social media. This helps us in order to authenticate a person and thus helps in improving the security of our guests and hosts data.

##### **Hosting Videos using YouTube API:**

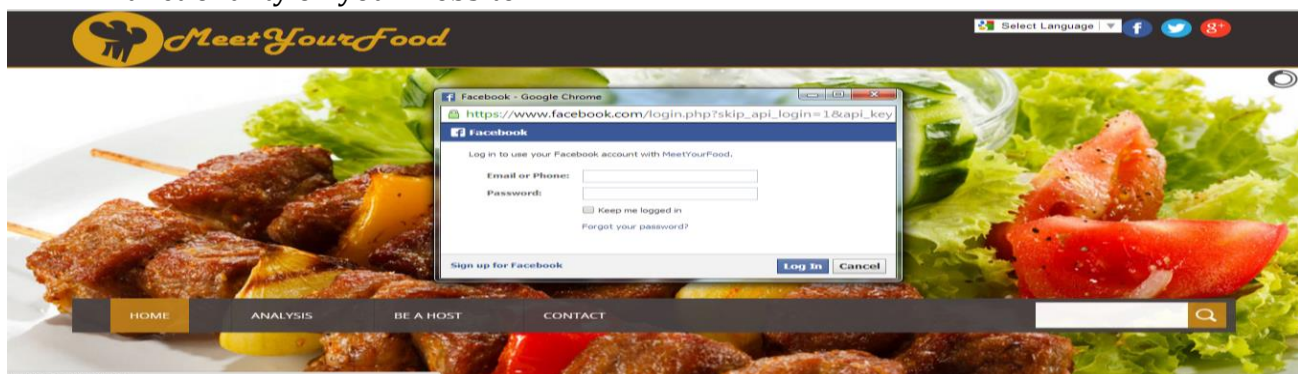
Showing the experiences of customers by hosting videos on website is a great idea. To give such a feeling to viewers, we have implemented YouTube API. We have recorded videos of the customers who had awesome experiences visiting host locations. These videos are hosted on YouTube and appropriate HTML5 viewable videos are passed to Webpages.

##### **Gathering customer feedback on MeetYourFood using Twitter API:**

Customers who visited MeetYourFood are free to visit our Twitter page and post few comments. Additionally, users can also have these comments posted on their twitter accounts by using hash tags such as #MeetYourFood.

##### **Steps taken to implement Facebook API:**

- Registered as Facebook developer
- Registered or created an Application account on your Facebook developer account
- Use Facebook Javascript SDK script in order to load facebook login redirection functionality on your website.



- On logging ask for user permission in order to get access to user data. Code for asking user permission is as follows:

```
function getUserInfo(){
    FB.api('/me/picture?width=64&height=64',function(response){
        document.getElementById("myimg").setAttribute("src", response.data.url);
        $('#myimg').css("display","block");
        $('#myimg_').css("display","block");
        $('#myimg').css("background",response.data.url);
    });

    FB.api('/me',function(response){
        document.getElementById("Username").innerHTML = "Welcome,"+response.name;
    });
}
```

e) After user permission we will be able to access user data and can be displayed as follows



### 1.4.2.3. Google Maps API:



We used Google Maps API in order to help our Guest to locate different events occurring in town or to be able to see location of different events occurring. This helps the host to reach to the event without any problem.

#### Steps taken to implement Google Maps API

- Create an account or sign in on Google API Console
- Use the following code in order to create a call to the Google Maps api, also used Google Maps Api key as follows:

```
<script type="text/javascript"
```

```
src="https://maps.googleapis.com/maps/api/js?key=AlzaSyB9x6T4twyQpLLivvNdHN4m_41FmatEH8U&sensor=false">
```

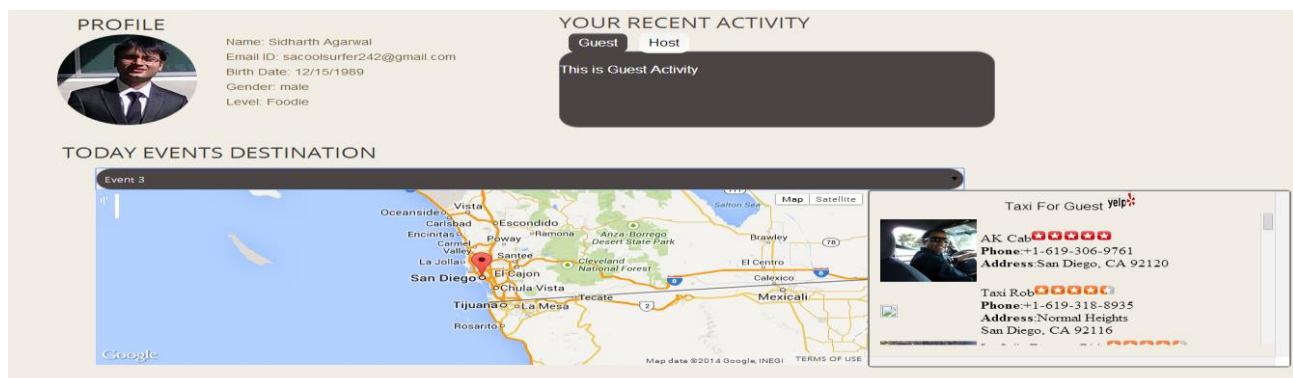
```
</script>
```

```
<script type="text/javascript">
var geocoder;
var map;
function initialize() {
  geocoder = new google.maps.Geocoder();
  var latlng = new google.maps.LatLng(-34.397, 150.644);
  var mapOptions = {
    zoom: 8,
    center: latlng
  }
  map = new google.maps.Map(document.getElementById("map-canvas"), mapOptions);
}

$(document).ready(function(){
  initialize();
});

function codeAddress(address) {
  //var address = document.getElementById("address").value;
  $('#yelp').attr('src',"Yelp?loc="+address);
  geocoder.geocode( { 'address': address}, function(results, status) {
    if (status == google.maps.GeocoderStatus.OK) {
      map.setCenter(results[0].geometry.location);
      var marker = new google.maps.Marker({
        map: map,
        position: results[0].geometry.location
      });
    } else {
      alert("Geocode was not successful for the following reason: " + status);
    }
  });
}
</script>
```

- c) We used the above code in order to create Google Maps, the implementation of Google Maps on the website is as follows:



#### 1.4.2.4. Grocery Server API:



Users can search grocery items by location, and results include local ads, circulars, and coupons for groceries by location and stores. We implemented Yummly API in order to help hosts to search different dishes and to see the quantity or the name of the ingredients. The hosts can search different dishes by name by category and also by dish type such as Main Course and other type of dish courses. This API will help hosts to create events by using dish name and ingredients listed in this API.

#### Yummly API Implementation Walk through

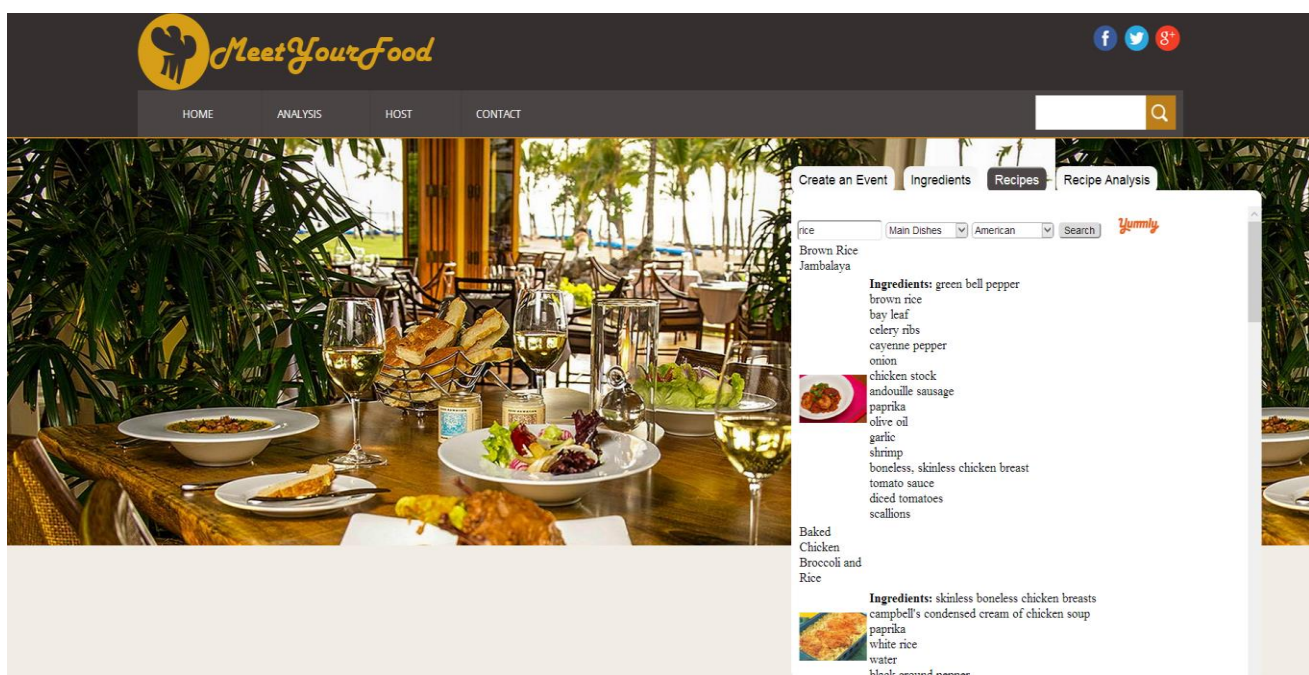
- a) Register on the Yummly site



- b) Obtain API key from Yummly site by registering the name of the site
- c) Use **app\_id** and **app\_key**, user selected category and dish type in order to create a request url to the Yummly server
- d) Create a request to the Yummly server using ajax call of jqeury
- e) Response is received in JSONP format, below is an image of the JSONP format of data

```
{
  "attribution": {
    "html": "Recipe search powered by <a href='http://www.yummly.com/recipes'><img alt='Yummly'</a>",
    "url": "http://www.yummly.com/recipes/",
    "text": "Recipe search powered by Yummly",
    "logo": "http://static.yummly.com/images/logo.png"
  },
  "totalMatchCount": 2998,
  "facetCounts": {},
  "matches": [
    {
      "smallImageUrls": [
        "http://lh4.ggpht.com/yDr4CwX5sVcPs6xSteHVuwaSGGsX1j4KWLe77vpouKVmr3NXBhTQUhY2z3HiBmeXypBPQ2PjvNvnszmmTEF:compressed.s3.amazonaws.com/Edamame-soup-308789-342804.s.jpg",
        "http://yummly-recipeimages-compressed.s3.amazonaws.com/272963.s.jpg"
      ],
      "ingredients": [
        "edamame beans",
        "onion",
        "olive oil",
        "potatoes",
        "salt",
        "freshly ground pepper",
        "fraise"
      ],
      "flavors": null,
      "imageUrlsBySize": {
        "90": "http://lh4.ggpht.com/ABQ59x4S1UoomDBY4M3_x_bdG7NGeorhY3S"
      }
    }
  ]
}
```

- f) Parse JSONP data in order to write it in HTML format , below is an image on the way the data looks on an HTML page



#### 1.4.2.5. Google Translator:



#### **Internationalization using Google Translate API:**

MeetYourFood is a global platform and customers from different parts of world may use this to meet their favourite food at Host's location. So, we are expecting customers from different

countries to visit our website and user our services. To make this happen, we have integrated Google Translate API to translate entire page from English to any other language and vice versa.

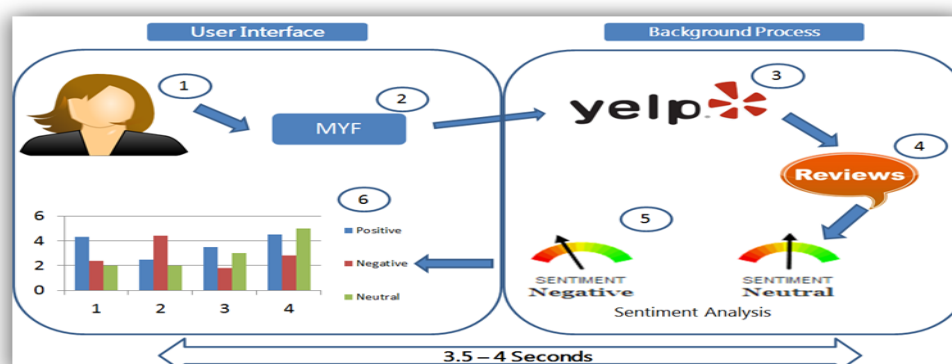
#### 1.4.2.6. Sentiment Analysis using Stanford NLP libraries and Yelp API:



Understanding the opinion of customers about the products that they are purchasing is very important. We have considered taking help of Yelp API in this context. Yelp provides some great reviews on almost every product. So, to find opinion of related products, we have implemented Yelp API to gather all those reviews and then used Stanford Natural Language Processing (NLP) - Sentiment Analysis algorithm to find the average opinion of users on a given product.

#### Steps to implement Sentiment Analysis:

1. User searches for particular product in Analysis section to see the product reviews.
  2. These details passed to Yelp API to collect review comments
  3. Comments received in JSON format are parsed using un-marshalling libraries Ex: **rt.jar**
  4. Obtained reviews are passed to Stanford Sentiment Analysis class files available in Libraries (**stanford-corenlp-3.3.1-models.jar**) to get overall sentiment of the reviews. To implement this, we have used below classes and dictionaries.
    - a. Sentiment Pipeline Classes – General Public License
    - b. Annotators – tokenize, ssplit, parse
    - c. Lexical Parse – englishPCFG.ser.gz (Factored Grammars)
    - d. Sentiment Model – sentiment.ser.gz
  5. Charts.js to compare average ratings of reviews against bar charts on HTML5 pages.
- API – Mashup with Yelp API, Stanford NLP and Charts.js*



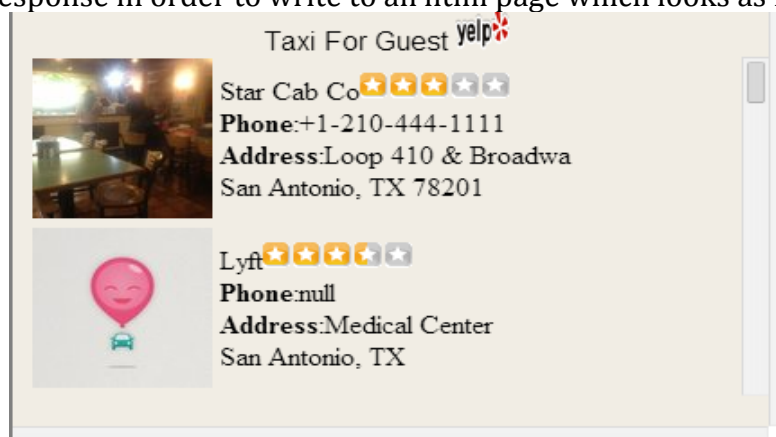
## Yelp API Implementation Walk through

We followed several steps in order to implement Yelp API. I am hereby listing all the steps used.

- Create an Account on Yelp.com
- Register for an API key on Yelp.com using the below link  
[http://www.yelp.com/developers/getting\\_started/api\\_access](http://www.yelp.com/developers/getting_started/api_access)
- Using four different keys such as Consumerkey, ConsumerSecret, token and tokenSecret.
- Two different Jar files and one Java Class needs to be added in order to be able to use Yelp API that are as follows:
  - Yelp2.java
  - Scribe.jar
  - JSON.jar
- Write a code in order to create an OAuth request to the API set category and get locations dynamically from the user
- We receive a Json response from the Yelp server and thus after using a JSON parser we are able to see the output as follows:

```
{ "region": { "span": { "latitude_delta": 0.0921928700000052, "longitude_delta": 0.091105378444837015 }, "center": { "latitude":  
Grand Marlin; address::http://s3-media4.ak.yelpcdn.com/bphoto/00Nw6YquE12UFY0uPIMf8Q/ms.jpg  
400 Pensacola Beach BlvdGulf Breeze, FL 32561  
Aegean Breeze; address::http://s3-media4.ak.yelpcdn.com/bphoto/_tyBy7PFR_kWexlWBmND6Q/ms.jpg  
913 Gulf Breeze PkwySte 20Gulf Breeze, FL 32561  
Hemingway's Restaurant; address::http://s3-media3.ak.yelpcdn.com/bphoto/fcds3v0YMYznrZ7FamtoQ/ms.jpg  
400 Quietwater BoardwalkPensacola Beach, FL 32561  
Peg Leg Pete's; address::http://s3-media1.ak.yelpcdn.com/bphoto/t72uHqSYptDoy9-vb5lqTA/ms.jpg  
1010 Fort Pickens RdPensacola Beach, FL 32561  
Flounder's Chowder House; address::http://s3-media2.ak.yelpcdn.com/bphoto/VYR4XB7zVPc9VpxZvsivfQ/ms.jpg  
800 Quietwater Beach RdGulf Breeze, FL 32561  
Fuji Steakhouse & Sushi Bar; address::http://s3-media3.ak.yelpcdn.com/bphoto/IrDV9rSNHOB0YXC2mV2ahQ/ms.jpg  
1385 Shoreline DrGulf Breeze, FL 32561  
La Brisa; address::null
```

- Use the above response in order to write to an html page which looks as follows:



### 1.4.2.7. Fat Secret API



**Overview:** We have tried to provide a unique functionality to our users regarding searching Recipe's calorie content and also helped them to know the nutrition percentage. It also provide



hosts with suggestion as to which dishes go best with which dish. This helps users to create a more successful event.

### Fat Secret Implementation Walk Through

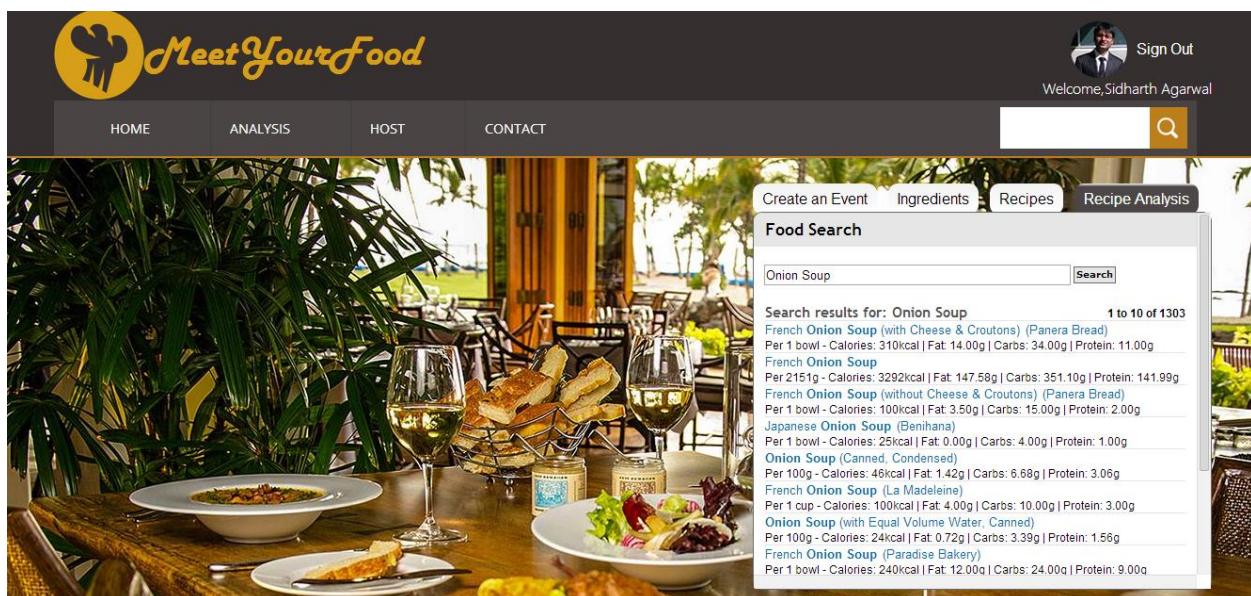
- Create an account on Fat Secret website
- Register the domain and name of your website on Fat Secret API
- Obtain the API key in order to implement the API
- Use the code and Api key within the code to create a Fat Secret Api widget within your website, the code is as follows:

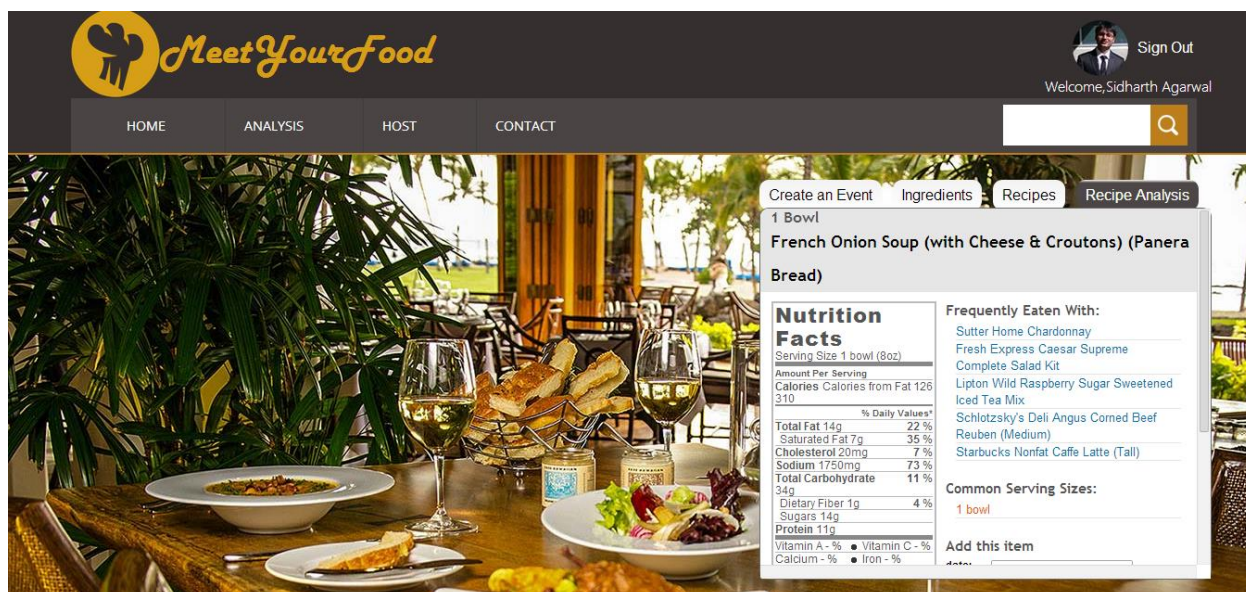
```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
<script src="http://platform.fatsecret.com/js?key=783510b2f98c46f9abefa3fca16797e2&theme=grey&auto_nav=false"></script>
</script>
fatsecret.setContainer("my_container");
fatsecret.setCanvas("home");
</script>
</head>
<body>

<div id="my_container" class="fatsecret_container"></div>

</body>
</html>
```

- Use the above code and thus get the functionality similar to as follows





### 1.4.3. Cloud/ Mobile/ Social Implementations

Proposed solution will be provided as a Cloud based service through Amazon Web Services. System interacts with users to get variables, does search through APIs, scraps through web for relevant information and then interacts with Amazon RDS (Relational Database System) to save/retrieve all the details. Trade rules, analysis and algorithms will be part of system.

### 1.5. Business Model

As mentioned previously we have a very simple business model. Hosts will create the events – at no cost and guests those are interested in the event will choose and book the event. There will be fee associated with all the confirmed events for both – Guest & Host.



#### 1.5.1. Revenue Plan

- Earnings from Hosts:** As the event created by the host will be booked we will charge 10% of the total meal value or \$5 whichever is highest. Guest will pay into MYF account and 50% of money will be held with MYF until meal event has occurred. 50% of the money will be released to host 3 days before the event or immediately whichever is lesser.

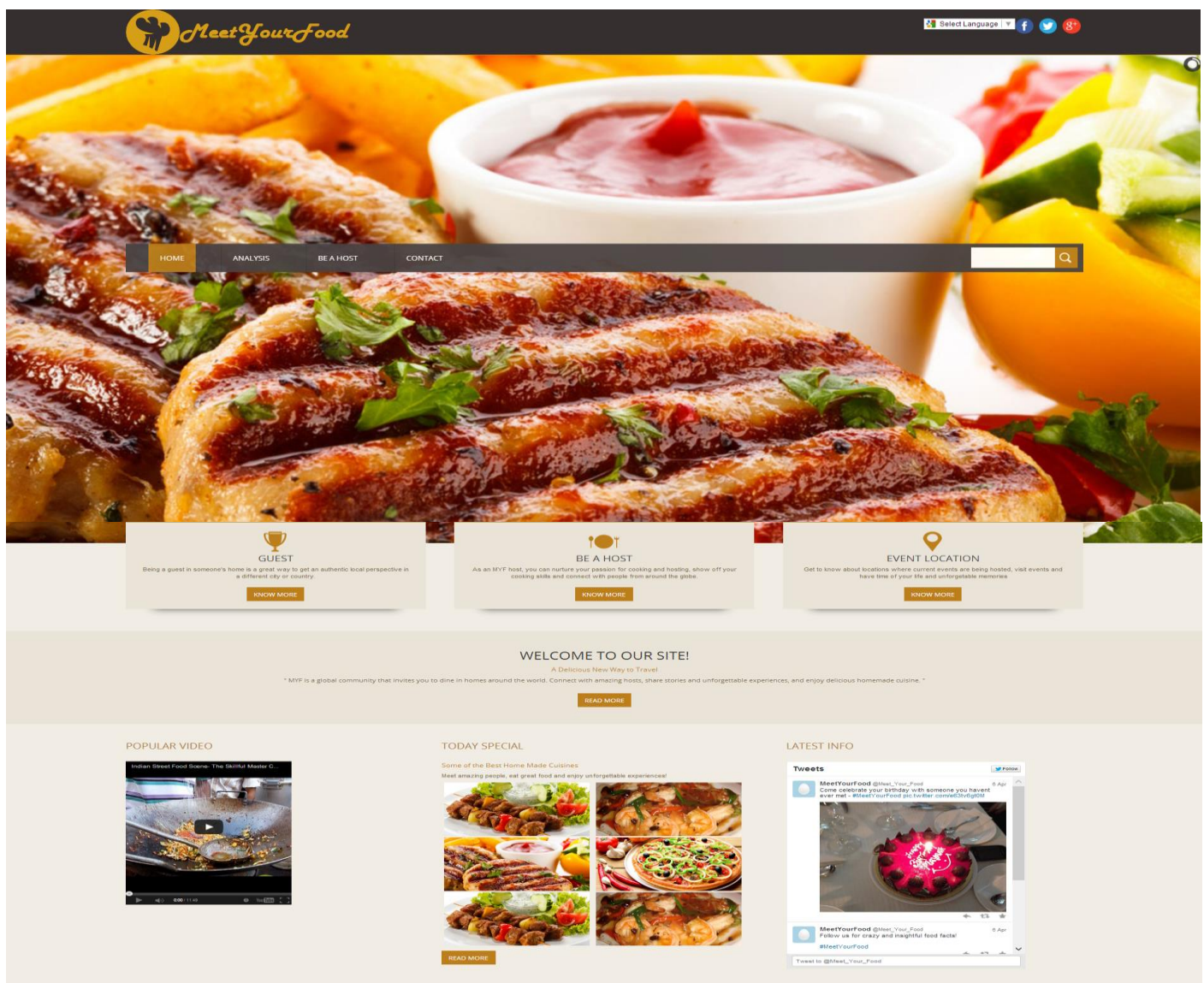


- 2) **Earning from Guests:** Guests will be charged booking fee immediately they book the event. Booking fee will 10% of the total amount or \$5 whichever is highest. As mentioned above amount will kept with MYF.
- 3) **Advertisements:** As MYF is unique we believe there will be high revenue from advertisements. Food markets and grocery stores those are new and recent can help us in generating advertisement revenues.

### 1.5.2. Promotion & Marketing Plan

- News Paper Advertisement
- Food Blogs
- Extensive use of Social Media
- Food Communities

### 1.6. Screenshots



## 1.7. Future Directions

MYF can be a big success from here. We were not able to implement it really well technically but if the events and analytics are implemented well, we make millions. It is very unique concept and quite a novel.

The first thing that we would work from here is to implement the functionalities that have been discussed above and roll out in a Tucson area only. It can be customized with the target audience – as we believe Tucson has a lot of students.

Offers and promotional events can be planned here at the UOA and special discounts can be offered. Another direction could be to implement the website in economies that are growing like – India. From our experience we have observed mothers and growing adults are a lot interested in selling their food or hosting events without taking overhead of operations – i.e. complete running restaurant.

## 1.8. Member notes and Role/ Responsibilities

In this section, we have distributed different tasks recognized among different team members based on their skill set and area of interest.

1. **Ankur Solanki:** Requirement gathering; UI Designing; DLD; Database Design; API's Implementation; Project Paper
2. **Anshul Jain:** HLD; Wireframes Design; Database Implementation; Data Analytics; Unit Testing; Project Paper
3. **Sharan Babu K:** Requirement Gathering; API's Implementation; Database Implementation; User acceptance testing; Unit testing; Project Paper
4. **Sidharth Agarwal:** HLD; Database Design; Data Analytics; User acceptance testing; Support and Maintenance; Project Paper

## 1.9. References:

1. "ItemSearch." - Product Advertising API. N.p., n.d. Web. 14 May 2014.  
<http://docs.aws.amazon.com/AWSECommerceService/latest/DG/ItemSearch.html>
2. SearchIndex-ItemSearch Parameter Combinations for US. (n.d.). - *Product Advertising API*. Retrieved May 14, 2014, from
3. <http://docs.aws.amazon.com/AWSECommerceService/latest/DG/USSearchIndexParamForItemsearch.html>
4. Deeply Moving: Deep Learning for Sentiment Analysis. (n.d.). *Deeply Moving: Deep Learning for Sentiment Analysis*. Retrieved May 14, 2014, from <http://nlp.stanford.edu/sentiment/>
5. Google Translate API. (n.d.). — *Google Developers*. Retrieved May 14, 2014, from <https://developers.google.com/translate/>
6. Twitter Developers. (n.d.). *Twitter Developers*. Retrieved May 14, 2014, from <https://dev.twitter.com/>
7. YouTube. (n.d.). — *Google Developers*. Retrieved May 14, 2014, from <https://developers.google.com/youtube/>