

# RestoScraper

**Presented by:**

**Group- F**

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# Introduction

- Reviews are scattered across various websites
- User visits more than two websites - on and average
- Spends a considerable amount of time
  - To get an overall idea of the quality of the restaurant



# Introduction continued..

- Manually compares the reviews
- Not satisfied with the quality of the reviews
- Often misled by the ratings



# Proposed Solution

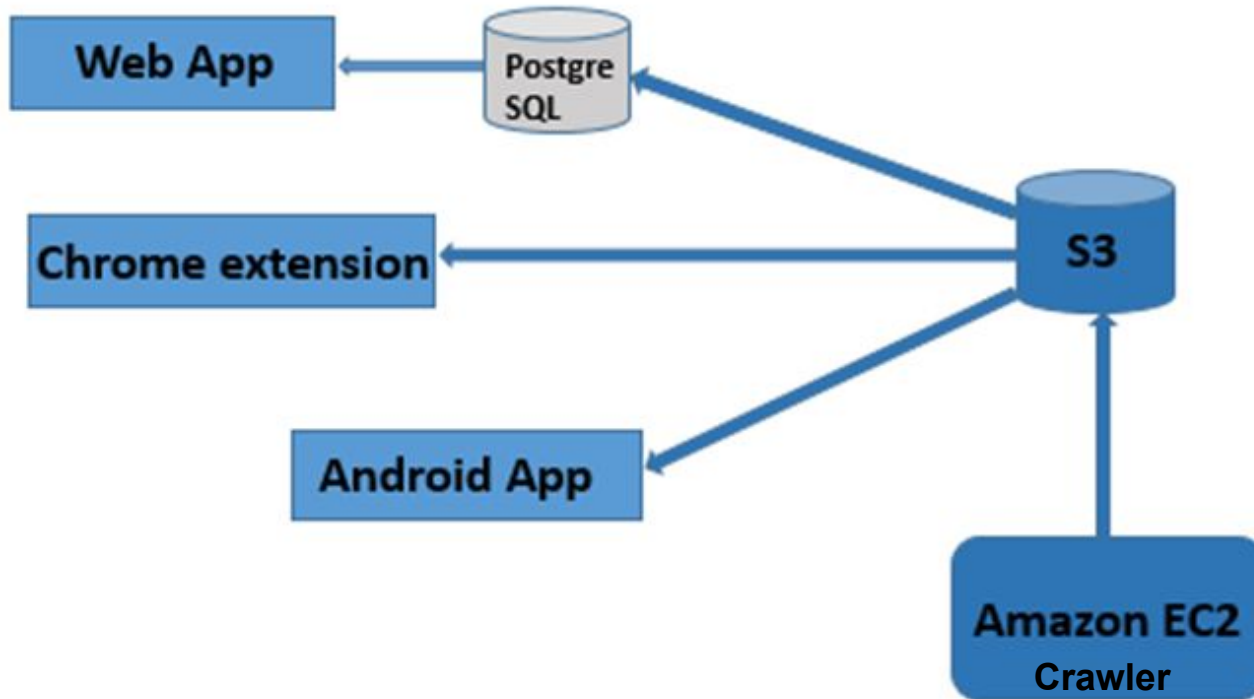
- Identifying the top websites for restaurant reviews
  - Yelp
  - TripAdvisor
  - FourSquare
- Aggregation of the positive and negative reviews
- Providing weighted average of ratings.
- Displaying top rated reviews for a restaurant.

# Three Solutions

- Solution 1: Web App
- Solution 2: Android app
- Solution 3: Chrome Extension



# System Architecture



# Crawler and Server

- Crawls the top three websites
  - Overall rating
  - Most popular and recent reviews
  - Negative reviews
  - Individual review rating
  - Location coordinates
- Data is converted into the JSON format and stored in S3 (AWS).



# Web Application

- Search a restaurant
- Displays overall ratings from Yelp, TripAdvisor and Foursquare
- Weighted average rating of all the three websites ratings
- Top 3 reviews from each of the 3 websites




## Web Application continued..

- Also displays negative reviews
- Location of the restaurant is displayed in google map view
  - based on the coordinates from JSON
- Links to visit the individual restaurant websites

# Web Application - User Interface

RestoScraper

## The Cowfish Sushi Burger Bar




**Yelp Rating:** 4.5 / 5 (612 ratings)  
★★★★★

**Trip Advisor Rating:** 4.5 / 5 (320 ratings)  
★★★★★

**Foursquare Rating:** 8.9 / 10 (459 ratings)  
★★★★★

**Average Rating:** 4.5 / 5  
★★★★★

[Book Now!](#)



# Web Application - Reviews

## Top Reviews

Source	Comments
Yelp	<ul style="list-style-type: none"><li>The mysterious cowfish was always ridiculously packed with people so I've stayed away until last night. Arrives around 630. As expected its packed. Wifey, who does not like to wait gives me the negative Nancy again after letting me choose tknights restaurant. ★★★★★</li><li>A friend and I dined there last night and sat at the bar. We were warmly greeted by the bartender Krystal and given drink menus. They specialize in craft cocktails so I ordered a Bullet and Bacon. It is a variation on an old fashioned and was quite tasty. We ordered sushi (tuna rolls and spider roll). I was a bit disappointed in the spider roll because it only had one crisp in the rolls otherwise it looked just like regular sushi. ★★★★★</li><li>Sweet potato fries here are on point!! Crunchy and crispy, yum! ★★★★★</li></ul>
Trip Advisor	<ul style="list-style-type: none"><li>The Cowfish Sushi Burger Bar truly has something for everybody. Their menu is like the Cliffs Notes edition of War and Peace. I recommend checking it out online and write down any questions before you come to the restaurant. Since Cow is the first part of the name of the place, I ordered a burger which was fantastic. Others in... ★★★★★</li><li>To this day, it is definitely a place you recommend to your friends. Amazing location and atmosphere and love the HUGE salt water tank. Finally tried a bento box lunch and it is my new favorite. You get to try a mini burger and sushi. YUM. (mini burger was cooked well, so I will ask them to adjust that next... ★★★★★</li></ul>

## Negative Reviews

Comments
<ul style="list-style-type: none"><li>I was there on the 22nd with my wife celebrating our anniversary. We ordered the Ahi Nachos for app. She ordered a avacado Turkey burger and I ordered the Bento "Brento" Box. That night everything was great. Service, atmosphere, etc... It wasnt until later that night I knew something was wrong. I got food poisoning from my Bento box which contained sushi and a burger. Although the place was awesome I will not be returning. After what I just went through I would advise all to steer clear! ★★★★★</li><li>If your in the mood for Sushi then let me suggest MURA right across Six Forks, the sashimi is poorly cut, usually over sized chunks of raw fish, nasty &amp; gross! As far as appetizers, the only one I could suggest is the Togarashi shrimp, beyond that your just wasting your money. The spiked shakes are a definite let down, just sugary concoctions that would kill a diabetic. The best reason to go here is to see the fish tank &amp; perhaps some of the burgers, beyond that not worth the wait or the cash! ★★★★★</li><li>Noisy,poor air quality,long wait in line for a 10 dollar burger that made my daughter very sick. I dont know anything positive to say about this place. ★★★★★</li></ul>

# Chrome Extension

- Displays ratings on top of webpage as plugin
- Implemented for the top three websites we considered
- Shows individual ratings from Yelp, TripAdvisor and Foursquare
- Displays Weighted average rating
- Links to visit the individual websites

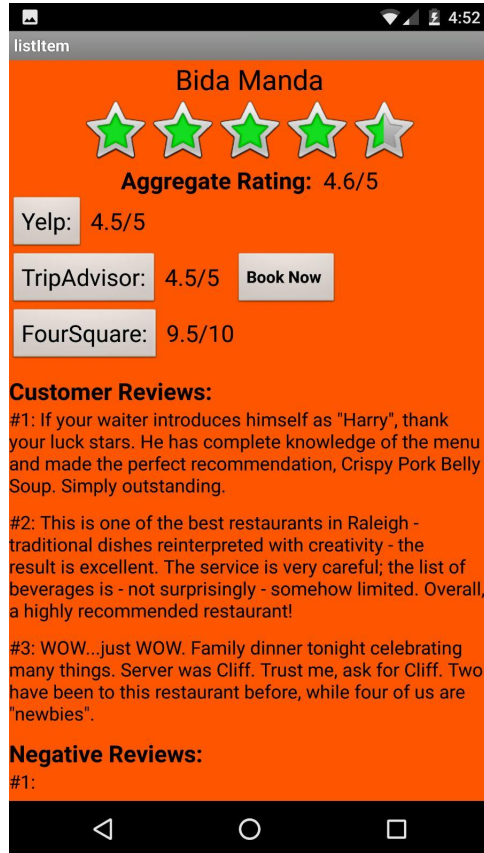
# Chrome Extension - User Interface



# Android Mobile Application

- Restaurant selection made handy with Resto-Scraper app
- Shows the list of restaurants to select from
- Displays Weighted average rating from top three websites
- Top 3 reviews from each of the 3 websites
- Also shows negative reviews
- Option to book a table using "**Book Now**" button
- Links to visit the individual websites

# Android Mobile Application - User Interface



# Evaluation Plan

- User Survey
- Telemetry Analysis



# User Survey

- Two iterations of the user survey
- Observed the users as they were using the three solutions
- At the end we asked them to fill in an online survey consisting of a set of relevant question



# User Survey- Iteration1

- How much time you spent to get the reviews using any of the above solution?
- Which of the additional feature would you like us to implement?

## Results:

- Negative Reviews
- Time spent in searching reviews considerably reduced

# Web Application - Negative Reviews

## Top Reviews

Source	Comments
Yelp	<ul style="list-style-type: none"> <li>The mysterious cowfish was always ridiculously packed with people so I've stayed away until last night. Arrives around 630. As expected its packed. Wifey, who does not like to wait gives me the negative Nancy again after letting me choose tknights restaurant. ★★★★★</li> <li>A friend and I dined there last night and sat at the bar. We were warmly greeted by the bartender Krystal and given drink menus. They specialize in craft cocktails so I ordered a Bullet and Bacon. It is a variation on an old fashioned and was quite tasty. We ordered sushi (tuna rolls and spider roll). I was a bit disappointed in the spider roll because it only had one crisp in the rolls otherwise it looked just like regular sushi. ★★★★★</li> <li>Sweet potato fries here are on point!! Crunchy and crispy, yum! ★★★★★</li> </ul>
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## User Survey- Iteration2

- Which solution do you prefer the most?
- Which is the most time taking task in the entire process of dining at a restaurant?
- What change you didn't like in the application?

### Results:

- Webapp is the most preferred solution
- Book Now button addition
- UI changes

# Web Application - Book Now

## The Cowfish Sushi Burger Bar



**Yelp Rating:** 4.5 / 5 (612 ratings)



**Trip Advisor Rating:** 4.5 / 5 (320 ratings)



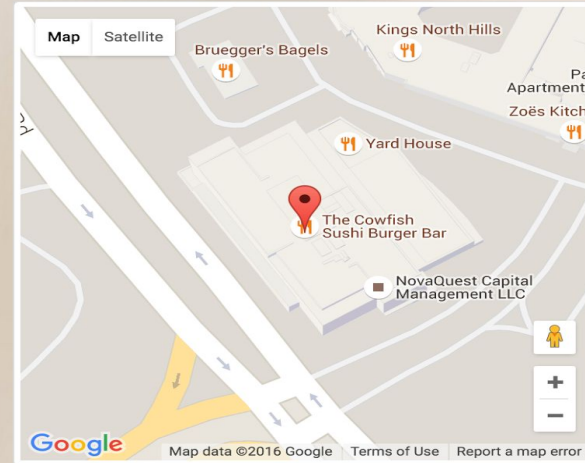
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**Average Rating:** 4.5 / 5



[Book Now!](#)



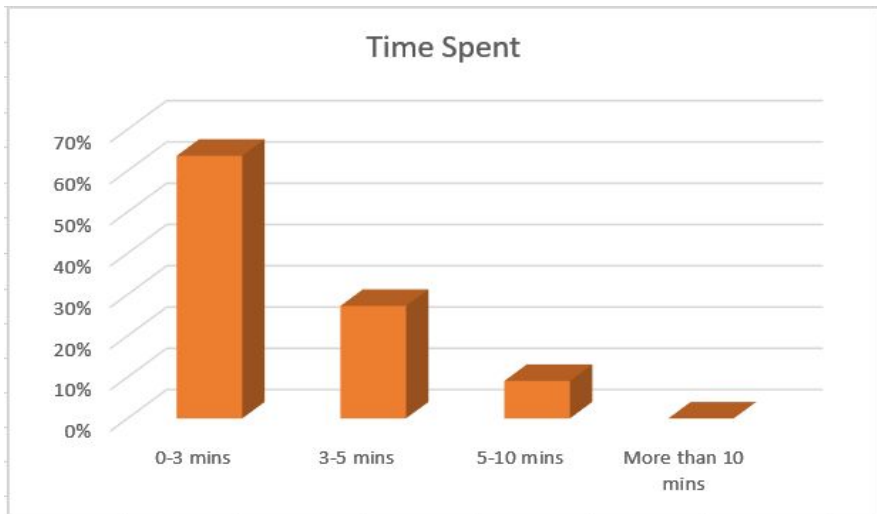
# Telemetry Analysis

- Code to track user activity behind the scenes
- Implemented the logic that keeps track
  - user clicks
  - patterns of usage
- Navigating to the main websites
- Clicks on Book Now button

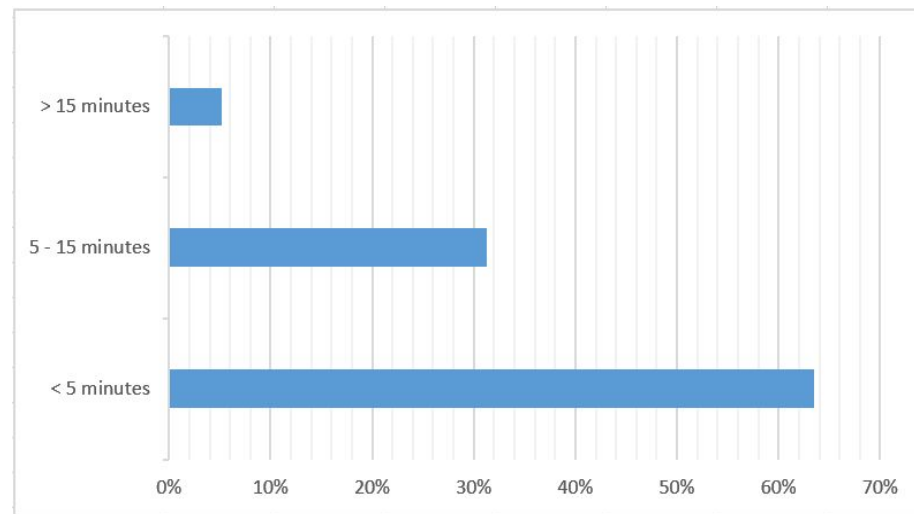
# Negative Reviews



# Time Spent - Comparison



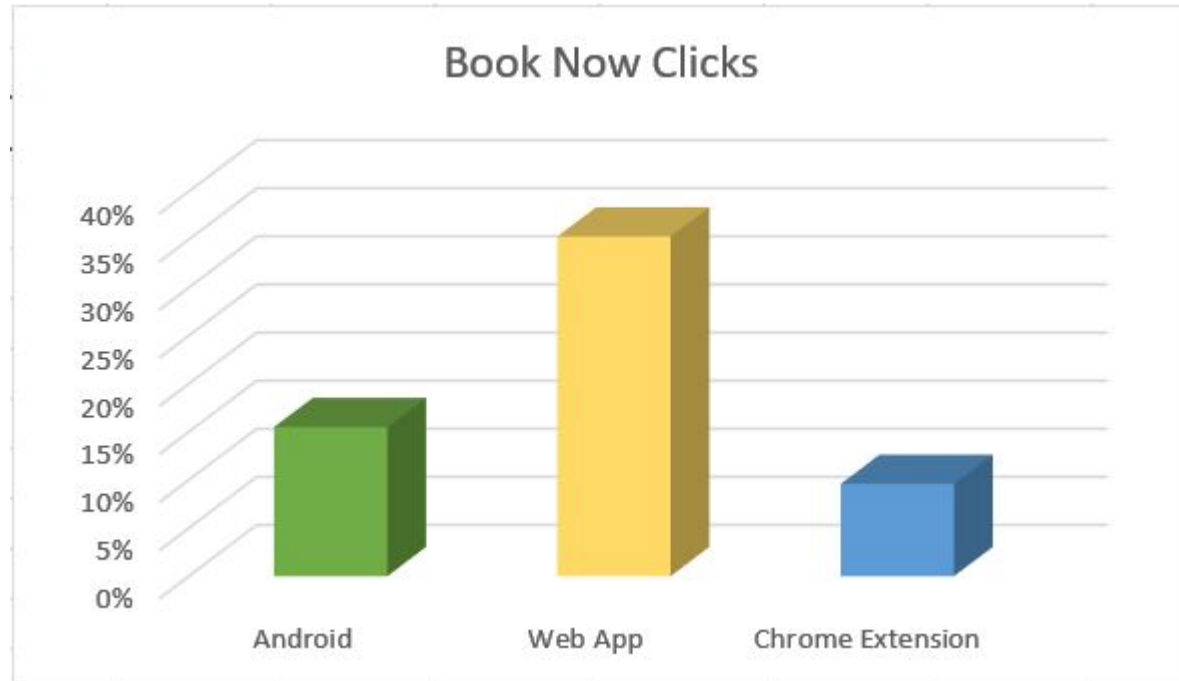
**Current Results**



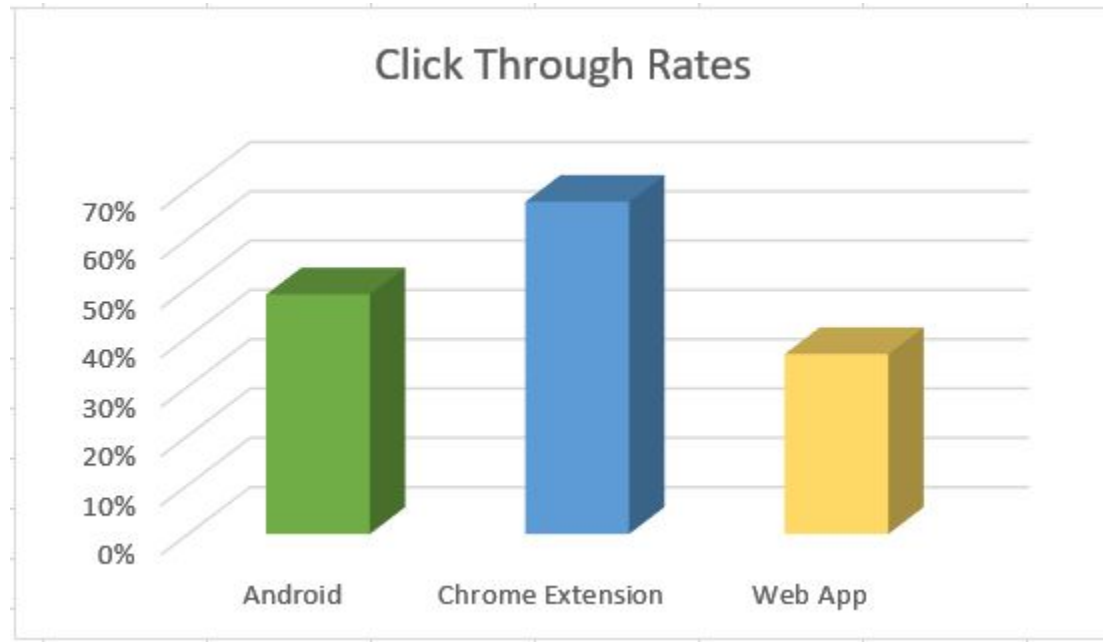
**January Results**



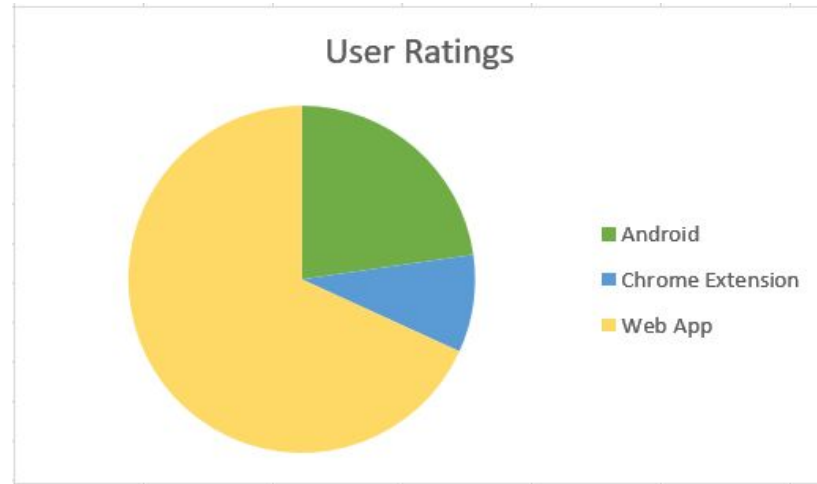
# Book Now Clicks



# Hyperlink Click Rate



# Best solution - User Ratings



# Web Application - Telemetry

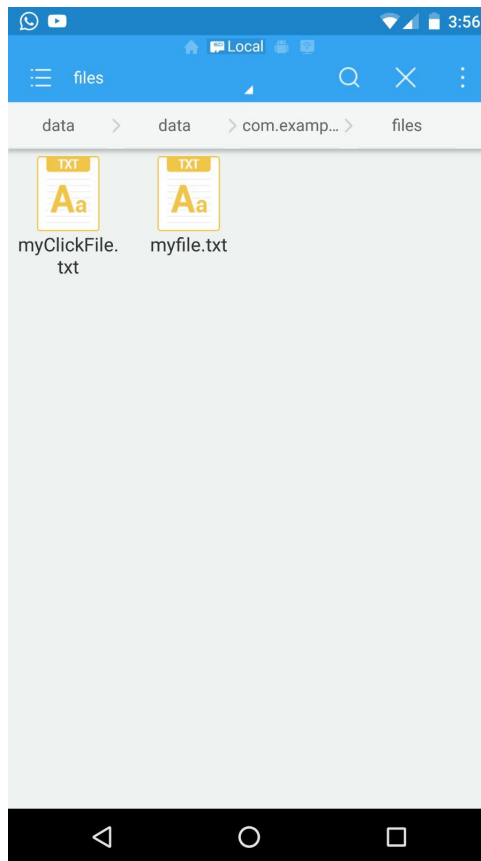
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## Website usage history

Restaurant Name	Hit Count	Yelp Redirect Count	Trip Advisor Redirect Count	Foursquare Redirect Count	Booking Count
Bida Manda	21	5	3	4	9
Glenwood Grill	13	1	2	4	4
The Cowfish Sushi Burger Bar	17	2	1	0	7
Red Pepper Asian	9	1	3	1	3
Tazza Kitchen Cameron Village	19	3	0	1	9
Kamado Grille	3	0	1	0	0
J Betskis	5	0	0	0	1
Beasleys Chicken & Honey	11	0	0	2	3
18 Seaboard	0	0	0	0	0
Kabab and Curry	5	2	0	1	0
Gonza Tacos y Tequila	0	0	0	0	0
Bad Daddys Burger Bar - Seaboard	0	0	0	0	0
Second Empire Restaurant And Tavern	12	3	1	1	5
The Pit	0	0	0	0	0

**Total hit count: 115****Total redirect count: 42****Total booking count: 41****Total redirect percentage: 36.52****Total booking percentage: 35.65**

# Android App - Telemetry



# Conclusion

- The three solutions have been implemented and user surveys and telemetry analysis has been carried out
- The results prove that the best solution among the three is Solution 1 - Web Application



