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## Web services

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### Web services Project overview

Version NEW

#### Members

Kyle Turchik	BA
Charles Jacobs	Dev
Aaron Gaut	QA
Kristopher Powers	PM

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Project overview	Date: <11-DEC-15>
CS-480-CPP	

## Revision History

Date	Version	Description	Author
<11/DEC/15>	NEW	New document illustrating the overview of all documents given	Kristopher Powers

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## 1. Project overview

<b>Project Name</b>	Database
<b>Executive Sponsor</b>	Student association of Cal Poly
<b>Project Manager</b>	Kristopher Powers
<b>Primary Stakeholder(s)</b>	Professor Hussain
<b>Project Description / Statement of Work</b>	
<p>This project will provide all other services with needed host for all processing. Web services will receive all data from our web servers and provide all received data to our User Interface clients (client) per request of the End User. The "End User" is described to be the logged in or logged out user to our Android, iOS, and web site. The web services will store all past user searches and provide instant feedback to the UI for the End User to see before the next search is performed. In addition Web services will host client code when requested by developers of particular groups.</p> <p>Current price point has yet to be determined but looking at similar apps all End User experience is free and add space is available for purchase to ensure app remains free.</p>	
<b>Business Case / Statement of Need (Why is this project important now?)</b>	
<p>Yolo presents a needed space in the current market. With websites like Kayak, hotels and the like there is a baseline for a new service to provide these kinds of services but for events. Event websites are beginning to show themselves all over the web. Yolo will go out to all these web pages and put all the results in one spot. Highlight what web page they come from, Users will be able to see the original post and get any other additional information they may need.</p>	
<b>Customers</b>	<b>Customer Needs / Requirements</b>
The general public	A clean and well organized interface that provides easy to read events in the local area. Results should quick and provide all data needed at a glance. Should be easy to use by the whole family and accessible on every device.
<b>Project Definition</b>	
<b>Project Goals</b>	Develop a web service that provides data aggregator and send data to an aggregator app
<b>Project Scope</b>	Provide a user database that includes preferred searches along with user long in when possible. Web services will provided up to 500 searches a second and provide results in less than 2 seconds.
<b>Project Deliverables</b>	<ul style="list-style-type: none"> <li>– Allow users to lookup events near given location</li> <li>– Events will be extracted from Yelp, Facebook, Eventbrite and StubHub.</li> <li>– Ability to add events to calendar on mobile device</li> <li>– Ability to view directions to the event location</li> <li>– Ability to add events</li> </ul>
<b>Project Constraints / Risks (Elements that may restrict a project, project team, or project action)</b>	
<p>Please see attached document "Risk assessment"</p> <p>Current project constrains are primarily with the parse database. Current free version of parse does not allow us to do more than 500 searches a second. In addition a limitation with the free version of pars is the number of codes that can be run, limited to 2.</p>	
<b>Implementation Plan / Milestones (Due dates and durations)</b>	
There will be 3 major mile stones first will be October 26, 2015, second will November 15, 2015 and the final	

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target date is to complete and demonstrate to our primary stakeholder on December 9, 2015. The first milestone will be to provide all requirements for all corresponding stakeholders in addition to providing a baseline for stakeholders to save data. Second milestone will be to provide user data in correct format to clients and scrapers. Final milestone is primary to assist take holders to ensure all data is sent and received correctly.

#### **Communication Plan** *(What needs to be communicated? When is communication needed? To who? How?)*

Communication will be as follows:

- Developer and QA will meet bi-weekly
- Dev and PM will meet weekly to go over progress
- On a needed bases PM and BA will meet
- BA will meet weekly with all the Stakeholders to go over any needed information

#### **Change Management / Issue Management** *(How decisions will be made? How changes will be made?)*

Changes will be discussed in the following order

1. Performance and use scenarios will be suggested to Dev
2. Dev will determine if scenario is back end or front end and need to be escalated
3. If an item needs to be escalated, Dev will inform the BA to get confirmation that the customer and stakeholder deem the implementation valuable.
4. If stake holders and customer deem necessary for the item to be implemented PM will arrange a meeting with BA and PM of applicable stake holder and customer to coordinate time frames and milestones and describe the impact that such implementation will have on the project.

#### **Project Team Roles and Responsibilities**

Team members	Roles	Responsibilities
Kyle Turchik	BA	Provide in depth requirements and collaboration with other BA's
Charles Jacobs	Dev	Setup and program all needed algorithms for scrapers and UI
Aaron Gaut	QA	Ensure all scrapers and UI can receive and post all needed data
Kristopher Powers	PM	Ensure all projects requirements are on time and meet deadlines

#### **Stakeholder Roles and Responsibilities**

Stakeholders	Roles	Responsibilities
Android	Receive event data	Post user data and, post/ receive user searches
Website	Receive event data	Post user data and, post/ receive user searches
iOS	Receive event data	Post user data and, post/ receive user searches
Eventbrite	Send event data	Post scraped data and receive user data
Yelp	Send event data	Post scraped data and receive user data
Facebook	Send event data	Post scraped data and receive user data
StubHub	Send event data	Post scraped data and receive user data

#### **Sign-off**

**Sponsor :** \_\_\_\_\_ **Date:** \_\_\_\_\_

(Name)

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## 2. Test Case Spec

2.1 Test Strategy/Approach				
<p>The two major components of software to be tested were the cloud code web services and the database itself. A bottom-up approach was employed. Both components was tested for correctness individually, then integration testing was performed to ensure that the components work together correctly. Regression testing was also performed at regular intervals to ensure the continued integrity of the software.</p>				
2.2 Test Plan				
<p>Testing was performed using the black box technique. As parse itself is something of a black box, this was the natural choice. Testing mainly focused on the web services portion of the software. Some of the web scrapers ran into implementation or interfacing issues, so as of this point in time we were only able to integrate information from Eventbrite. The function at the heart of this process is called getEventbriteEvents. Input and output for this function is in the form of JSON objects. To test the validity of this function, various valid and invalid JSON objects were sent as input, and the results were verified for correctness.</p> <p>Since parse handles the back-end portion of the database, and since the database itself is somewhat basic, there was less potential for bugs in that component. Therefore, testing of the database integrity was more limited.</p>				
2.3 Traceability Matrix				
<p>Web services requirements are up as follows:</p> <p>R0: Accepts external search requests  R1: Queries Eventbrite scraper for event information  R2: Queries Facebook scraper for event information  R3: Queries Yelp scraper for event information  R4: Processes gathered event information  R5: Gracefully handles faulty search requests</p> <p>As previously stated, the Yelp and Facebook scrapers were not completely working, so R2 and R3 were not ready for testing.</p> <p>The traceability matrix for these requirements is below.</p>				
	R0	R1	R4	R5
Case 1	X	X	X	
Case 2	X			X
2.4 Test Cases				
<p>The two broad cases that were tested were valid and faulty requests. For each case, multiple inputs were tested with the goal of exercising all execution paths.</p> <p>Here is a sample input for Case 1:</p> <pre>{   "searchLocation": "Pomona, CA",   "searchStartDate": { "__type": "Date", "iso": "2015-11-01T00:00:00.00" },   "searchEndDate": { "__type": "Date", "iso": "2015-11-15T24:00:00.00" },</pre>				

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```
"searchDistance": 50,
"paidEvent": false
}
```

Here is the corresponding output (partially omitted):

```
[
{
"eventName":"Fall Career Fair",
"eventDescription":"Students don't wait, get a jump start on finding the employer of your dreams!Your attendance to the
Fall General Career Fair will provide you the opportunity to meet over 150 employers from various industries. These
employers will be providing information about career opportunities, gathering resumes, and networking to find their next
top recruits. Employer booths will be categorized by their industry or industry they are recruiting for. Each section is color
coded and students are provided with a map which helps to navigate the event.",
"eventAddress":"3801 W Temple Ave, Pomona, CA, 91768",
"eventLocation":{"__type":"GeoPoint", "latitude":34.056917, "longitude":-117.821749},
"eventStartDate":{"__type":"Date", "iso":"2015-10-29T10:30:00.00"},
"eventEndDate":{"__type":"Date", "iso":"2015-10-29T14:30:00.00"},
"eventOrigin":"Yolo",
"eventWebsite":"http://www.cpp.edu/events",
"eventImage":"http://www.cpp.edu/events/_files/img/events/billy_bronco_default.jpg",
"paidEvent":false
},
{
"eventName":"Knott's Scary Farm Returns September 24 - October 31!",
"eventDescription":"NEW EVIL RISES AT KNOTT'S SCARY FARM THIS HALLOWEEN SEASON
Whatever You're Imagining, It's Here...Including All-New Mazes And The Return Of Elvira
[omitted]
For more information on Knott's Berry Farm, including admission, park hours and events, visitknottsscaryfarm.com or
download the Knott's Berry Farm app for your smart phone. Join the scary conversation by using #ScaryFarm on
Facebook, Twitter or Instagram.",
"eventAddress":"8039 Beach Blvd, Buena Park, CA 90620",
"eventLocation":{"__type":"GeoPoint", "latitude":33.844304, "longitude":-118.000227},
"eventStartDate":{"__type":"Date", "iso":"2015-10-01T19:00:00.00"},
"eventEndDate":{"__type":"Date", "iso":"2015-10-31T13:00:00.00"},
"eventOrigin":"Yelp",
"eventWebsite":"https://www.knotts.com/scaryfarm/",
"eventImage":"http://s3-media3.fl.yelpcdn.com/ephoto/-kjds6zrLmrFcVJt7RGutA/ml.jpg",
"paidEvent":true
},
{
"eventName":"An Evening with Bill Nye",
"eventDescription":"Bill Nye is a scientist, engineer, comedian, and inventor, as well as the New York
Times bestselling author of Undeniable: Evolution and the Science of Creation. He holds a BS in Mechanical
Engineering from Cornell University, where he studied under Carl Sagan, and worked as an engineer at
Boeing on the 747, before
[omitted]
of the energy you put into your car is immediately thrown away out the tailpipe. We need not accept that
dangerous emissions are the price we must pay for a vibrant economy and a comfortable life. Above all, we
need not accept that we will leave our children a planet that is dirty, overheated, and depleted of resources.",
"eventAddress":"Crest Theatre, Westwood 1262 Westwood Blvd, Los Angeles, CA 90024",
"eventLocation":{"__type":"GeoPoint", "latitude":34.0577088, "longitude":-118.4428522},
"eventStartDate":{"__type":"Date", "iso":"2015-12-14T20:00:00.00"},
"eventEndDate":{"__type":"Date", "iso":"2015-12-14T20:00:00.00"},
"eventOrigin":"Eventbrite",

```

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```
"eventImage": "https://img.evbug.com/https%3A%2F%2Fcdn.evbugstatic.com%2Fs3-
build%2Fperm_001%2Fbf4bd0%2Fdjango%2Fimages%2Fdiscovery%2Fdefault_logos%2F3.png?h=230&w=460&s=27c
9bbf77e3ecb394a126fdb4729276",
"paidEvent": true
}
]
```

Multiple queries of this nature were made with varying input parameters, and their outputs were manually checked for correctness in both formatting and appropriate content.

For Case 2 invalid JSON inputs were tested. The individual tests were an empty JSON object, JSON objects with missing required parameters, and JSON objects with required parameters of the wrong type or format. In all cases, the software detected the erroneous input or the API call failed. In either case, the web services gracefully returned an error code to be handled by the client software.

## 2.5 Test Result Summary

Test results were largely unsurprising. The database and web services software is relatively simple in implementation, so there was not much room for bugs to appear. The difficult part of event gathering was handled by the web scraping teams, and Parse made hosting the database mostly painless. That being said, Case1 and Case2 both returned the expected results in all tests. Case1 returned only results that fit within the search specifications. For Case2, the request always failed gracefully.

## 3. Use Cases

UseCases

## 4. Activity Diagrams

Activity Diagrams

## 5. Domain Object Model

Domain Object Model

## 6. Context Diagram

ContextDiagram

## 7. Architecture Layout

## 8. Component Diagram

## 9. Class Hierarchy & Relationship Diagrams

DatabaseClassHierarchy

## 10. Sequence Diagrams

SequenceDiagram