Talent Exchange & Meet-up

Requirements and Specification Document

Charles Grosz, Hao Yuan, Jamie Lee, Sung Ho Youn, William Laine, Xiaochao Yan, Yong Jae Cho, Zihan Wang

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Abstract

We are constantly seeking opportunities to learn more things and expand our horizon. However, a lot of times the learning opportunities are limited by physical locations or availability of right resources. Our clients, a teacher at Northbridge International School and a ECE graduate student, are looking for a website where they can help to match students who have interests to learn and students who have the corresponding talents. Talent Exchange & Meet-up is a web-based application that helps its user to learn talents and skills from each other while making new friends and connections by learning together. We plan to build a talent learning online community in which people can host a workshop to teach what they are good at, and also a place where people can browse to see the workshops that interest them the most. Each user starts the application with some learning credits that they can use to attend learning sessions hosted by other users. Every user will also be able to use filters to look through all the workshops available to browse the ones that best match their interests. After a user runs out of their learning credits, they are able to earn more by hosting workshops in which they teach other attendees new skills. Our application will have built-in maps that show users the many talent learning opportunities that are available around them through an algorithm that helps people to find interesting learning sessions and suggest a hosting location for the workshop host. Furthermore, it will also have a learning credits tracking system so that the record of each user's learning credits is available. The application will be a great place for people with similar interests to learn and connect. The application will be a great place for people with similar interests to learn and connect by enabling people to learn new talents through an exchange of knowledge as currency in hopes to promote a collaborative community.

Document Revision History

Rev. 1.0 2018-09-28: initial version

Rev. 1.1 2018-10-12: resolved text content inconsistency; visuals for next version

Rev. 1.2 2018-11-2: minor changes to user reqs and use cases

Rev. 1.3 2018-11-30: removed unwanted features

Customer

The general customers of this website will be anyone who is interested in casually learning something new without spending money or having too much commitment. Many people have talents of their own, and are willing to share when they could learn something back. This web service will attract people who want to explore new areas of expertise.

The specific customers of this website are Yunjung Kim and Ji Hyun Nam. Yunjung Kim is a language teacher at an international school who has come up with the idea of a website that people can exchange talent and meet up. She does not have any computer science or software engineering background, but she is knowledgeable in design and therefore will be helpful to see what a team of developers may be lacking. Also, as a teacher who wanted to have this kind of service to use among her students to match them with language learning at an international school setting, she will be able to test the website during development with her students, who will be a very good set of prospective customers. Ji Hyun Nam is an electrical and computer engineering graduate student with a masters in computer science, and he will collaborate with Yunjung Kim to specify requirements and the vision for this web service. Since he has a lot of developing experience and expertise in the area, he will be a customer who can communicate with the developers more about what he needs and what can be added to the service.

Competitive Landscape

The application market related to this topic is far from saturated. There are limited numbers of web applications or mobile applications in this field. In addition, most of them are either under maintenance or in beta version. Listed below are pros and cons of three major competitors that are noteworthy.

- swapaskill
  - Pros
    - Pre-defined categories of skills/talents to choose from
    - User profile includes self-introduction and images
  - Cons
    - Website written in HTML, sketchy and not visually appealing, way more words than pictures
    - Not testable, cannot register now, under maintenance
- Tibba
  - Pros
    - Mobile application with appealing UI design
    - Explore nearby skills in a list but distance is labeled
    - User rating/review system
    - Chat functionality is supported
    - Sign agreement before the exchange
    - Advertised and fund-raised on kickstarter.com
  - Cons
    - Not testable, only accessible in Dubai, Bali and Chiang Mai
    - marketplace for barter
    - No workshop arrangement features
- skillhabour
  - Pros
    - Map is embedded
    - User profile includes ratings, skills, needs, skillhours (currency), history, wishlist
    - Similar skill recommendation
    - Pre-defined categories, keyword search and location search
  - Cons
    - Map is cumbersome to use
    - Post needs and skills separately, can be simplified
    - Establish communication by “request service”

- Little exposure in U.S and still Beta version.
- No chat functionality
- No workshop arrangement functionality

Although our competitors are not running at their full functionalities, there are things that we can learn from. For instance, we could use Tibba as a benchmark for the UI design. By adopting design principles like more graphics than text, we will be able to visually attract first-time users. On the other hand, the setup of user profile on skillhabour is inspiring. We may want to add ratings and reviews functionalities to encourage civilized behaviors on our website. In addition, a map view is better than a list view when users are interested in geographical locations of people with talent.

However, there are also downsides of our competitors that make our application stand out from them. First of all, competitors like Tibba and skillharbour are building skill market for trading while we are building communities for people with skill to swap. The terminologies such as “request service” and “barter” used by our competitors shape their products to be profit-driven. This also explains why user profiles across the globe can be accessed. However, we are focusing on the people nearby. By connecting users nearby, we expect them to bond online and offline which may even foster communities. In addition, we are one step further compared to our competitors regarding services provided. The products of our competitors bridge the users who want to learn skills from each other and it is up to users to negotiate meeting details. Whereas our application will allow users to select workshops they are interested in from a fixed schedule provided by the workshop host. This will reduce lengthy conversation between users to decide skill swap details and ensure meaningful topics to be covered in conversations between users. This will promote user experience as a whole.

This web application will be built on open-source programming languages and APIs. One patent contains keyword “talent exchange” from a basic search. The patent is about the right to own system and method of skill-exchange platform where users submit and receive skill requests. Since users on our web application will schedule skill workshops instead of handling requests, the existing patent is not applicable. The ecosystem that our web application builds may be eligible for obtaining a patent in this field.

User Requirements

- Location-based Map Screen + toggle to list format

    - Pins on map that give limited details on upcoming workshops
    - Filters:
        - Date
        - Categories of workshops
        - Host rating
    - Sorting:
        - Date
        - Categories of workshops
        - Host rating
- User panels
    - Being able to switch to workshop discovery, workshop history and workshop wishlist easily
- Workshop Details
    - Location, Date & Time
    - User written description of the workshop
    - Current amount of people registered
    - Min/max amount of attendees set by host
    - Workshop host rating
    - The host has ability to cancel workshops
        - Users can also cancel their attendance
    - Ability to add to wishlist
    - Ability to register the workshop with learning credits
- Create Workshop Screen
    - Generated nearby, public location for workshop
        - Can be changed by workshop holder
    - Required date, time, location, and description
    - Category of workshop
- Review Workshop Screen
    - Star rating of workshop host
- Account Settings Screen
    - Learning Credits remaining
- Account Sign up
    - Email, password sign up
    - User_id
    - Gender, age, interests
- Account Login/Logout
    - User_id and password log in
    - One-click logout

Use Cases

Name	Account Sign up
Actor	New user
Triggers	“Sign up” button is selected
Events	The new user enters username, email address and password, and uploads profile picture, and clicks “Submit” button to complete account sign up
Exit Conditions	Once username, email address and password meet criteria, the new user will be able to click “Submit” button to finish sign up
Post-Conditions	The new user will see the last page visited earlier, and a confirmation email is sent to the email address registered
Acceptance Test	When “Sign up” button is clicked, a new page floats above the front page. Users can enter username, email address and password that meet criteria and upload profile pictures. Once “Submit” button is clicked, a confirmation email is sent to the registered email address.

Name	Account Login
Actor	Recurring user
Triggers	“Log in” button is selected
Events	The recurring user enters username/ registered email address and password to login the account created earlier
Exit Conditions	Once the entered username/ registered email address and password matches information stored in the system, the user can click on “Submit” to complete account login
Post-Conditions	The user will see the latest page visited before login and a mini profile picture at the upper right indicating logged-in status
Acceptance Test	The recurring user can type in username/registered email address and password. When information is correctly provided, the “Submit” button is clickable.

Name	Account Logout
Actor	Logged-in user
Triggers	When the “Log out” button is selected
Events	Log out the user from the current account
Exit Conditions	“Log out” button is selected
Post-Conditions	The user will see the front page and there is no mini profile picture at the upper right corner of the page; the user can browse workshops listed but cannot register.
Acceptance Test	“Log out” button is clickable; No mini profile picture; workshop browsing functionality is intact

Name	Workshop Creation
Actor	Logged-in user
Triggers	When “Create” button is selected by the logged-in user
Events	Logged-in user creates a new workshop and fill in related information include name, description, location, time, and minimum number of attendees.
Exit Conditions	The user clicks “Complete” button
Post-Conditions	A message box appears and informs the host that the workshop is created; workshop host will see an email confirmation in registered email inbox
Acceptance Test	“Create” button is clickable; text fields for workshop details are fillable; upon “Complete”, the workshop is searchable by any users, and it appears in “My Workshop” tab of the workshop creator; email confirmation is sent to the registered email address of workshop creator

Name	Workshop Deletion
Actor	Logged-in user who created workshops previously
Triggers	When the “Delete” button is clicked
Events	The creator deletes an workshop

Exit Conditions	The delete confirmation button is triggered
Post-Conditions	The workshop is not searchable
Acceptance Test	The “Delete” button is clickable; the delete confirmation button is clickable; once deleted, the workshop is removed from the database and cannot be searched using filters

Name	Workshop Filtering
Actor	Logged-in User
Triggers	When filter conditions are selected
Events	Users use filters to refine workshop searches
Exit Conditions	Once filter conditions are selected, they will be in effect immediately
Post-Conditions	The user will see refined search based on refinement conditions applied
Acceptance Test	Search results are narrowed as filters are applied

Name	Workshop View Toggle
Actor	Logged-in user
Triggers	When the view toggle is switched
Events	The user can switch the mode of view: list view or map view
Exit Conditions	Toggle is switched to desired state
Post-Conditions	The workshops are displayed in corresponding layout, either in list or map
Acceptance Test	The toggle can be switched to either state; workshops are displayed as toggle does

Name	Switch Panel
Actor	Logged-in user
Triggers	When the panel button is clicked on the front page

Events	The user can switch panels to discover surrounding workshops, wishlist, or created/registered workshops
Exit Conditions	Desired panel is displayed when the corresponding panel button is selected
Post-Conditions	The user will see workshops of selected panel and filters applied earlier remain in effect
Acceptance Test	Panel button are clickable and display correct content; filters stay in effect

Name	Workshop Detail
Actor	Logged-in user
Triggers	Workshop name is clicked when workshops are displayed in a list; the pin representing a workshop on the map is clicked
Events	The user wants to learn more about the workshop so he/her click on the icon to see detailed page
Exit Conditions	Workshop name or map pin is selected indicating information request
Post-Conditions	Workshop detail page will float above the list/map
Acceptance Test	Workshop detail page shows up once name/icon is selected

Name	Workshop Registration
Actor	Logged-in user
Triggers	Once the “Register” button on the workshop detail page is selected
Events	The logged-in user registers one workshop as a participant from the workshop detail page
Exit Conditions	The user clicks the “Register” button to complete workshop registration
Post-Conditions	A registration confirmation message box appears
Acceptance Test	The “+” button is clickable; message box appears once the button is clicked; registered workshop is searchable in the “My Workshop” panel

Name	Workshop Registration Cancellation
Actor	Logged-in user
Triggers	Once the “Cancel” button on the registered workshop detail page is selected
Events	The logged-in user cancels registration of one workshop on the workshop detail page
Exit Conditions	The user clicks the “Cancel” button to complete workshop registration cancellation
Post-Conditions	A registration confirmation saation message box appears
Acceptance Test	The “Cancel” button is clickable; message box appears once the button is clicked; canceled workshop registration is removed from the database and not searchable

Name	Workshop Review
Actor	Workshop creator and participants (logged-in users)
Triggers	The system notifies workshop creator and participants to review each other after scheduled workshops happen via email
Events	Both creator and participants are notified to write reviews regarding the people (star rating) by following the link contained in the email
Exit Conditions	Once “Submit” button is clicked, users will see the workshop detail page that they attended
Post-Conditions	User star rating will be recalculated; comments will be added to the bottom of workshop detail page
Acceptance Test	User star rating updates to reflect newly added rating; new comment is added to the corresponding workshop detail page

User Interface Requirements

Since the service “Talent Exchange and Meet-up” has 2 types of users

① Workshop Attendee : people who will attend a workshop in a list

② Workshop Host: people who will host a workshop and decide the time, location and theme of the workshop.

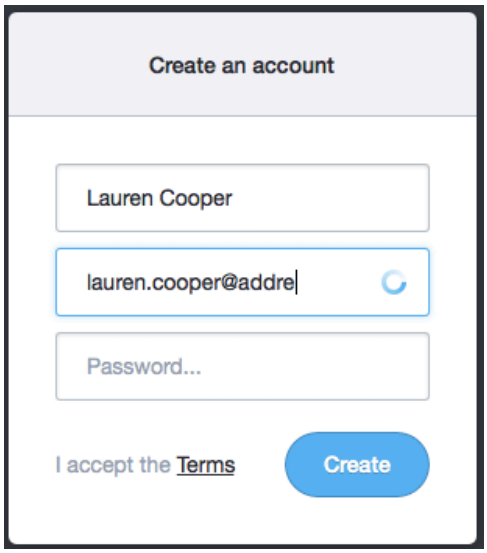
Thus, in order to ensure the whole service cycle can run smoothly, every web page will have equal priority during the initial phase of development, which will help building a skeleton for those webpage. Such skeleton should be able to display information from server at least in text.

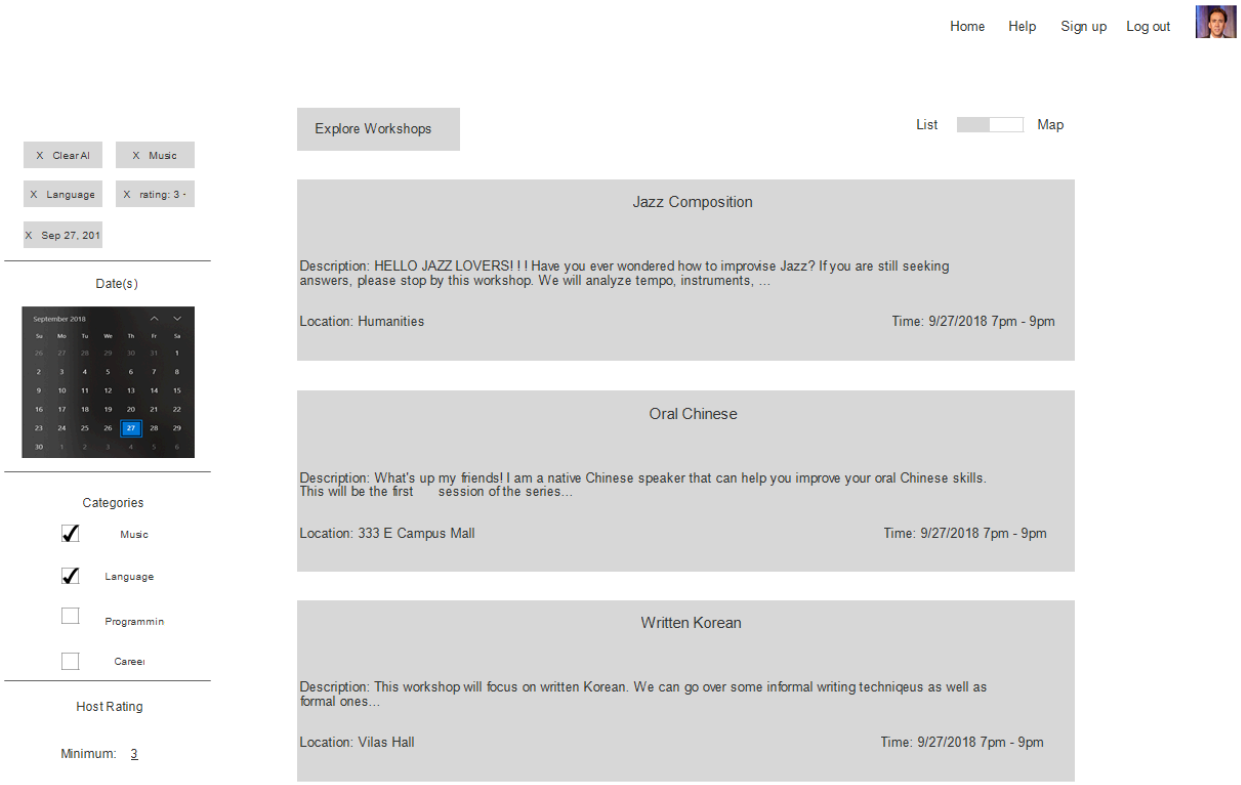
After the skeleton of the website is built, then the database and back-end program will be testable. The development of the website (UI for our program) will shift focus to visualising the data in the form of a map and make the page more user-friendly.

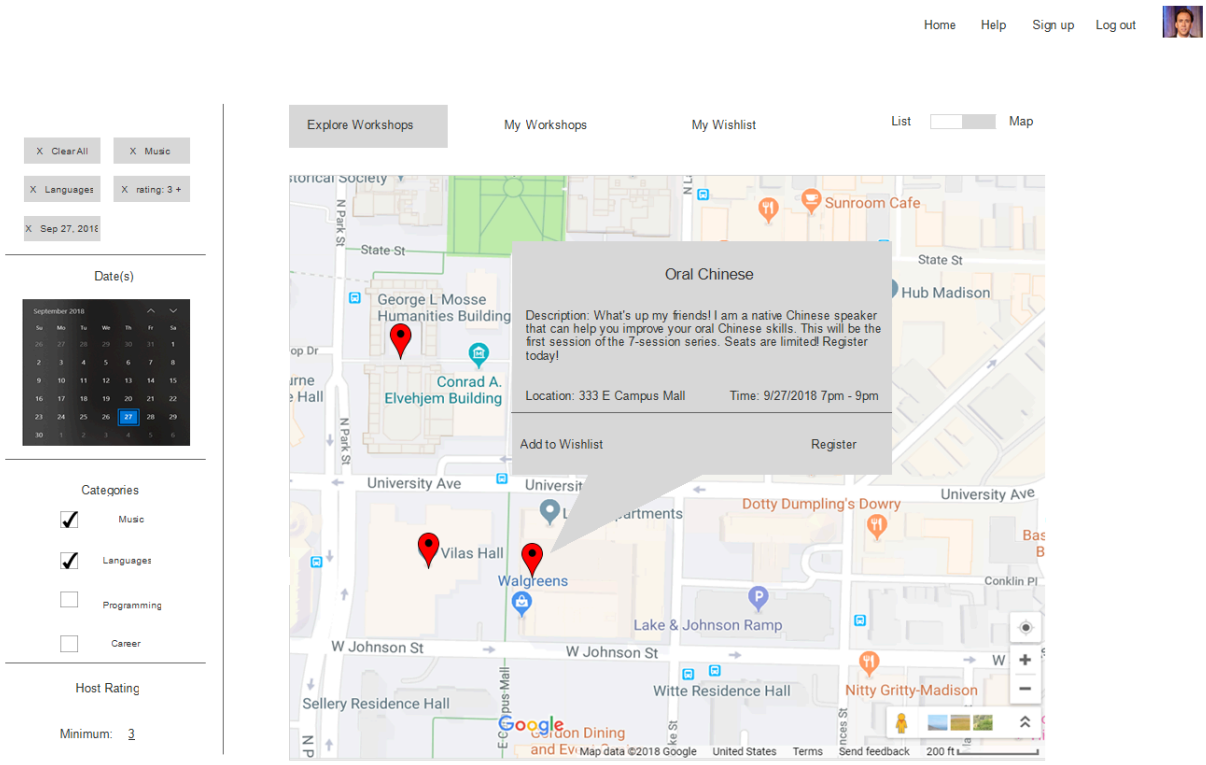
Table : UI requirement and priority level, organized in the order of time. The lower the priority level is, the more important it is. 1 is the highest priority.

Category	Test Standard	Priority Level
Core Function	Displaying the date from server side successfully in text.	1
	Using ***Google Maps*** extension to display workshop information on the map successfully.	2
User Friendly	Setting up basic website structure, skeleton of UI is built and working	2
	Adding placeholder art resource, such as background, icon for website	3
	Created a consistent art style for website, including text format, theme color etc...	4
	Using the art style created as guideline to build	6 (optional)

	art-resource for website.	
	Putting High-quality art resource (preferably specifically built for website) into website	6
	Final tweak and testing of the overall UI before submission	1




Home
Help
Sign up
Log out
X Clear Al
X Music
X Language
X rating: 3 -
X Sep 27, 201
Date(s)
Categories
Music
Language
Programmin
Career
Host Rating
Minimum: 3
Explore Workshops
List
Map
Jazz Composition
Description: HELLO JAZZ LOVERS! ! ! Have you ever wondered how to improvise Jazz? If you are still seeking answers, please stop by this workshop. We will analyze tempo, instruments, ...
Location: Humanities
Time: 9/27/2018 7pm - 9pm
Oral Chinese
Description: What's up my friends! I am a native Chinese speaker that can help you improve your oral Chinese skills. This will be the first session of the series...
Location: 333 E Campus Mall
Time: 9/27/2018 7pm - 9pm
Written Korean
Description: This workshop will focus on written Korean. We can go over some informal writing techniqeus as well as formal ones...
Location: Vilas Hall
Time: 9/27/2018 7pm - 9pm


Home
Help
Sign up
Log out
X Clear All
X Music
X Languages
X rating: 3 +
X Sep 27, 2018
Date(s)
Categories
Music
Languages
Programming
Career
Host Rating
Minimum: 3
Explore Workshops
My Workshops
My Wishlist
List
Map
Oral Chinese
Description: What's up my friends! I am a native Chinese speaker that can help you improve your oral Chinese skills. This will be the first session of the 7-session series. Seats are limited! Register today!
Location: 333 E Campus Mall
Time: 9/27/2018 7pm - 9pm
Add to Wishlist
Register
Sunroom Cafe
State St
Hub Madison
George L Mosse Humanities Building
Conrad A. Elvehjem Building
University Ave
Dotty Dumpling's Dowry
Vilas Hall
Walgreens
Lake & Johnson Ramp
W Johnson St
Witte Residence Hall
Nitty Gritty-Madison
Sellery Residence Hall
Conklin Pl
Google
Map data ©2018 Google
United States
Terms
Send feedback
200 ft

Summary:

A total of 3 types of web page skeleton will be needed

1. Page to interact with workshop related information : large area are used to display visualized information.
2. Register / User setting page : Mainly displaying text-based information about user.
3. Homepage : 2-3 key function button, attractive to users.

A total of 9-11 picture will be needed

1. 3x1 background for each type of webpage skeleton.
2. 1 for website icon
3. 2x3 for UI element such as banners, buttons will be needed.

Security Requirements

As with any application that organizes people to meet up together in real life there are concerns about the safety of each user. Our biggest priority is to keep the GPS location of each user private and invisible to other users. In addition to this, workshop holders will be strongly encouraged to host in public spaces to promote attendance while minimizing any other concerns users may have.

Denial of Service wouldn't be a big security problem for our application as there are limits to users' inputs. The users for this application could only select subjects that interest them from drop down menu, instead them typing their own subjects to the system. This way the server would be safer to those who try to inject commands or to overflow the data in our system. Still, we should be extra careful about coding by using Prepared Statements when we are working with SQLite. Lastly, we could always use SWAMP tool to check if our programming is safe.

Account authorization is a crucial component of site security. We will monitor irregular logins and respond accordingly to ensure a safe environment for our users. If a users tries to log in frequently and with wrong passwords, we will freeze the account temporarily and recommends the user change to a new password. Or if a user tries to log in from a new ip, we will ask the user to confirm identity via email. These basic measures are necessary to prevent low-level account hacking.

System Requirement

- Front-end
    - JavaScript
        - React
            - Takes care of compatibility problems
            - Antd (UI)
            - Axios (easy HTTP Client)
            - Redux
            - Router (multi-paged web application)
    - HTML & CSS
    - Google Maps API
    - Node.js
- Back-end
    - PostgreSQL - Database
        - Unlimited database size & table size 32 TB
    - Node.js
    - Django
        - Django REST (server-side web API builder)
- Clients
    - Web Browser
    - Internet Connection
- Web Deployment
    - HerokuApp

Most of the web browsers use websockets nowadays, so that as long as the client has a device that could open up a web browser with an internet connection, this web application could be run without serious problems. Also React is a great library for mobile application, so when the user tries to access the app with mobile, it would work as well as web.

Specification

The service cycle of our website begins with the login of users. If a user is not registered, he or she will be prompted for registration. After successful registration, the user will be able to login with their account. After login, the user can access any service, including workshop hosting and attending. Finally, a single service cycle will end with a

specific workshop being successfully finished after both host and attendee review each other. The overall process will look like what is shown in the graph below.