Requirements Document

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November 2020

1. **Information**

   A. **Name, Place and Date:** ExplorePR, Online, November 13, 2020

   B. **Partners:** Daniel Alfaro, Angel Burgos, Carlos Martínez, Fabián Guzmán, Juan Ramos, Steven Ramírez, José Túa, Cristian Velez, Marko Schutz-Schmuck

   C. **Current Situation:** The context is that of internal tourism. The current situation, as perceived, is that (i) tourists do not know how to explore Puerto Rico, (ii) there is a lack of information about key places, and (iii) there is no platform for tourist to contact local tour guides.

   D. **Needs and Ideas:** There is therefore perceived a need for bringing order into this domain. The idea is to do so by developing a desktop/mobile application that provides users with up-to-date information of every activity relevant to tourism, routes to explore, and information about local tour guides.

   E. **Concepts and Facilities:** More specifically, the application will contain information about restaurants, hotels, beaches, monuments, rivers, lakes, forests, hiking, rappelling, zip line, kayaking, etc., and contact information about local tour guides. Also, it will provide predetermined and personalised routes made by local tour guides.

   F. **Scope and Span:** Thus the scope is that of Puerto Rico's internal tourism tours, while the span focuses on the web application support for informing about tourism activities and places, tours and local tour guides' contact information.

   G. **Assumptions and Constrains:** For the development of a domain description of internal tourism, it is assumed that the developers have access to a necessary and sufficient number of professionals possessing the necessary and sufficient knowledge about respective parts of their domain, and the quality of the resulting domain model also depends on fulfillment of the assumptions. For the development of a requirement prescription of Puerto Rico's internal tourism, 2 set of assumptions are expected to be fulfilled: that there is a mutually accepted domain description of the relevant parts of internal tourism and that the developers have access to a necessary and sufficient number of professionals possessing the necessary and sufficient knowledge about respective parts of their domain. One dependency is expected to be fulfilled: the quality of the resulting requirements model also depends on fulfillment of the assumptions.

   H. **Standards Compliance:**

      I. IEEE/ISO/IEC 24765-2017 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Vocabulary

      II. IEEE/ISO/IEC 16326-2019 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Life Cycle Processes - Project management

      III. IEEE/ISO/IEC 29148-2018 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Life Cycle Processes - Requirements engineering

      IV. IEEE/ISO/IEC 16085-2006 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Life Cycle Processes - Risk Management

      V. IEEE/ISO/IEC 14764-2006 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Software Life Cycle Processes - Maintenance

      VI. IEEE/ISO/IEC 12207-2017 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Software life Cycle Processes

      VII. IEEE/ISO/IEC 26511-2018 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Requirements for managers of information for users of systems, software, and services

      VIII. 15026-1 Revision-2019 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Systems and Software Assurance - Part 1: Concepts and vocabulary

      IX. IEEE 15026-2-2011 - IEEE Standard–Adoption of ISO/IEC 15026-2 2011 - Systems and Software Engineering - Systems and Software Assurance - Part 2: Assurance Case

X. IEEE 15026-3-2013 - IEEE Standard Adoption of ISO/IEC 15026-3 - Systems and Software Engineering - Systems and Software Assurance - Part 3: System Integrity Levels

XI. IEEE 15026-4-2013 - IEEE Standard Adoption of ISO/IEC 15026-4 - Systems and Software Engineering - Systems and Software Assurance - Part 4: Assurance in the Life Cycle

XII. IEEE 24774-2012 - IEEE Guide - Adoption of ISO/IEC TR 24474:2010 - Systems and Software Engineering - Life Cycle Management - Guidelines for Process Description

XIII. IEEE/ISO/IEC 24748-1-2018 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Life Cycle Management - Part 1: Guidelines for life cycle management

XIV. IEEE/ISO/IEC 24748-4-2016 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Life Cycle Management - Part 4: Systems Engineering Planning

XV. IEEE/ISO/IEC 24748-5-2017 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Life Cycle Management - Part 5: Software Development Planning

XVI. IEEE/ISO/IEC 29119-1-2013 - ISO/IEC/IEEE International Standard - Software and systems engineering - Software Testing - Part 1: Concepts and definitions

XVII. IEEE/ISO/IEC 29119-2-2013 - ISO/IEC/IEEE International Standard - Software and systems engineering - Software Testing - Part 2: Test processes

XVIII. IEEE/ISO/IEC 29119-3-2013 - ISO/IEC/IEEE International Standard - Software and systems engineering - Software Testing - Part 3: Test documentation

XIX. IEEE/ISO/IEC 29119-4-2015 - ISO/IEC/IEEE International Standard - Software and systems engineering - Software Testing - Part 4: Test techniques

XX. IEEE/ISO/IEC 15939-2017 - ISO/IEC/IEEE International Standard - Systems and Software Engineering - Measurement process

I. **The Teams:**

I. **Managements:** Marko Schutz-Schmuck, Juan Ramos

II. **Developers:** Daniel Alfaro, Angel Burgos, Carlos Martínez, Fabián Guzmán, Juan Ramos, Steven Ramírez, José Túa

III. **Client Staff:** Cristian Velez

IV. **Consultants:** Cristian Velez, Marko Schutz-Schmuck

2. **Prescription**

A. **Stakeholders:**

I. **Tourists**

(a) *Description:* Within this category, you can find the regular users of the page, those who just book flights, hotel stays, and participate in tour guides.

(b) *Perspective:* These users will be able to view prices and tours available to them.

(c) *Access Plan:* We have access to their regular information, like first name, last name, date of birth, and other relevant information. These can be accessed by contacting them through email or with the information they provide on their profile.

II. **Tour Guides**

(a) *Description:* You can users who have been approved as tour guides for the page following the standard approval procedures stated further below this document.

(b) *Perspective:* They will be able to see just like regular tourists but they can host tour expeditions with the information of what locations they will be visiting as well as see who joins this event. They are capable of also removing/updating the roster of participating tourists from the expedition.

(c) *Access Plan:* These can be accessed by contacting them through email or with the information they provide on their profile.

III. **Attraction Employees**

(a) *Description:* These include anybody relevant to a certain location to bring attention to said location. They work somewhat with the tour guides providing useful and adequate information as well as other necessities they would like to give, such as souvenirs.

(b) *Perspective:* The employees can validate whether or not rules for the location are being followed.

(c) *Access Plan:* These can be accessed by contacting them through email or with the information they provide on their profile.

IV. **Drivers**

(a) *Description:* These include the drivers to a vehicle provided that the tour guide needs one.

(b) *Perspective:* The drivers will be able to view tours just like any other user and provide vehicular transport if they wish to after contacting a tour guide. Otherwise, they have the perspective of a regular user.

(c) *Access Plan:* We have access to these users' information because they require signing up like others so that they can provide the tour guide vehicular transportation. This is necessary to keep track of who is actually providing the transportation and what vehicle. These can be accessed by contacting them through email or with the information they provide on their profile.

V. **Business Partners**

(a) *Description:* Within this category, you will see users who own a business or represent a business with the adequate information of said business in the relevant information about them. They work similar with tour guides that want to direct the expedition in their direction to boost all kinds of sales and tourists' attraction to this location.

(b) *Perspective:* These users have different windows that can tell them whether or not the tour guide is about to arrive with the group. If they are not working at this time in respect to that, then they have the regular perspective of a tourist.

VI. **Developers**

(a) *Description:* Administrators of the page that regulate and ensure that the page is working just as expected and give regular updates to it.

(b) *Perspective:* They have all perspectives from all points of view to be able to perform tests if necessary.

(c) *Access Plan:* These are not contacted by others regularly as the developers would already have contact with each other via any provided means. It would default to either email, phone number, or other platform they specify.

B. **Rough Sketches:** By internal tourism we mean a structure of entities, of functions, events and behaviours that include:

I. **People:** tourist, tour guides, employees, etc.

II. **Attractions:** restaurants, beaches, rivers, lakes, monuments, parks, etc.

III. **Transportation:** car, walk, bus.

IV. **Events:** games, holidays, etc.

C. **Terminology**

I. **Accessible:** Usable by all people. Whether a hotel, restaurant, or attraction can by enjoyed by people of all ages and abilities, regardless of physical or other limitations.

II. **Assets:** The attractions, hotels and restaurants within a given region. Assets are what that area has to offer guests who visit.

III. **Buyers:** Travel Trade professionals who sell to consumers. They are tour operators, receptive operators, travel agents and OTAs (online travel agents). They look for destinations and attractions to package and sell to their customers.

IV. **FIT:** Foreign Independent Traveller. An international family or small group travelling to the country. They arrive by airplane or cruise and usually rent cars for transportation.

V. **Front-line staff:** People who interact with and give service to customers, guests and visitors. For example, front desk staff at a hotel or a cashier at an attraction.

VI. **Group Leader:** The person who accompanies and/or leads the people on a group tour. They work for the Group Tour Operator who sells the tour.

VII. **Group Tour Operator:** A person who puts together vacation packages for groups. They sell these packages as products to consumers. They also fit into the category of Buyers.

VIII. **Inbound operators:** Agencies that specialize in providing tour packages to international travellers visiting the country. Also known as Receptive Operators. Travel agents from foreign countries will work with an inbound receptive operator to find a travel package that suits their customers.

IX. **Inbound Tourism:** Tourism generated by visitors from foreign countries. This does not include domestic travel like visitors from drive markets and in-state visitors.

X. **Itinerary:** The planned route for a trip. This is what the travel trade professionals sell to their customers. It's a pre-planned experience with where to go, when, and what to expect when you get there.

XI. **Motorcoach:** Large passenger bus. This is the vehicle most often used for people travelling with group travel tours.

XII. **Partners:** The people who own or manage the assets of a region. These partners work closely with their region's DMO and benefit from tourism dollars spent at their establishments.

D. **Facets**

I. **BPR**

(a) **Sanctity of Intrinsics:**

(i) From the point of view of users, our web-app consists of a platform that allows them to find locations, tours, and events that they may wish to visit or take.

(ii) From the point of view of guides, our web-app consists of a platform in which they can offer their tours to users and in turn users can contact the guides with the information that is provided on the guide's account.

(b) **Support Technology:** At the moment there is no efficient way for tourists to search for tours, tourist spots and locations in one centralized webapp. A person can search for different tours using a variety of websites and pick the ones that they wish to take. A tourist may search the web for tourist spots that they may want to visit around the island and plan their visit around that, but our team believes that there is a way to facilitate this process for tourists. With our platform we will be able to simplify touring around the island by eliminating the need to browse a variety of websites and giving tourist an easy way to find tours/locations/tourist spots that they may wish to take or visit.

(c) **Management and Organization:**

(i) **Management:** The management part would oversee keeping the platform up to date, storing the user's data, making sure that the platform is safe to use, be aware of possible fraudulent cases or accounts and monitoring accounts that have suspicious behaviors.

(ii) **Organization:** The platform allows for users to be able to find or create the tours, locations, and events that they wish to take in an efficient manner.

(d) **Rules and Regulations:**

(i) ***Rule:*** Tour guides working for a company or for themselves must never make any tourist or visitor feel uncomfortable or unwelcome.

(ii) ***Regulation:*** Failing to comply with this rule can lead to a warning or potential termination of employment given the severity of the action.

(iii) ***Rule:*** Tourists or visitors partaking in a expedition led by a tour guide must not make other tourists or visitors feel uncomfortable or unwelcome.

(iv) ***Regulation:*** Failure to comply with this rule can lead to being removed from the expedition on the spot. Multiple offenses to this rule can lead to your account being removed from the platform.

(v) ***Rule:*** When out in an expedition, tourists must always follow the tour guide so as to not get lost. Tour guide can allow tourists to linger around to purchase souvenirs but only when specified.

(vi) ***Regulation:*** Failure to comply with this rule can lead to being removed from the expedition on the spot.

(vii) ***Rule:*** When group is currently using a vehicle for transportation, a bus for example, you must never exit the vehicle when it is motion nor stick your head out of the window.

(viii) ***Regulation:*** Failure to comply with this rule can lead to being removed from the expedition on the spot. Multiple offenses to this rule can lead to your account being removed from the platform.

(ix) ***Rule:*** Tourists that take part in an expedition must be punctual when they decide to join a group for a set date.

(x) ***Regulation:*** Failure to comply with this rule will lead to expulsion from the expedition.

(e) **Human Behaviour:**

(i) A tour guide is effective when they follow the rules set by the company and application. They arrive on time, guide the group around the areas specified, and tourists leave after the expedition concludes with some degree of satisfaction.

(ii) A tour guide is ineffective when they forget their locations and information about the places they visit. Arriving unprepared will cause tourists to be unsatisfied.

(iii) A tour guide is ineffective when they do not follow the rules set by the company or application.

(iv) A tourist is effective when they attend to events on time and choose to enjoy all information provided and behave respectfully towards others. This is exemplified when they ask questions about the place as this shows interest and interaction.

(v) A tourist is ineffective when they do not follow the rules set by the company and application.

(vi) A tourist is ineffective when they misbehave and perform disrespectful acts towards the people around them.

(f) **Scripting:**

(i) "All activities that have been solicited and confirmed that are not realized by the user, namely expeditions they have chosen to join, will result in a warning if a reasonable explanation is not given for their no-show at an event with a tour guide."

(ii) "All tour expeditions must finish at the specified time and must NOT allow any activities past 10:00PM. This is to ensure the safety of all involved.

II. **Domain Requirements**

(a) The Tour Guides must be certified according to Puerto Rico Tour Guide Regulations.

(b) The events must be carried out following the U.S. Travel Association (USTA) guidelines, such as social distancing, mandatory face coverings in public areas, and a variety of mandates for businesses – including, but not limited to, reduced capacities and high standards of cleanliness in accordance with CDC and EPA guidelines.

(c) The event must happen following responsible acts towards the environment by following DRNA Guidelines.

III. **Interface Requirements**

(a) **Shared Phenomena and Concepts Identification:** Information relating events is maintained in a database as to maintain consistency. Private user information has to be stored privately and not disclosed to other users.

(b) **Shared Data Initialization:** Data for each event must be identifiable by a specific event ID when it is created.

(c) **Shared Data Refreshment:** Updates to information must communicate with the database through the API.

(d) **Man-Machine Dialogue:** User has device with a browser and is capable of interacting with the website, the website's front-end has event listeners and handlers to carry out the user actions properly.

(e) **Machine-Machine Dialogue:** An API is in charge of communicating the information input from the Front-end to the Back-end where it is validated and securely stored.

IV. **Machine Requirements**

(a) **Performance**

(i) **Storage:** Storage capacity stores all user private and public information. Also stores all the events in the catalog as well as each events information.

(ii) **Time:** The website loads in less than 3 seconds.

(b) **Dependability**

(i) **Accessibility:** The website is accessible through any modern popular browser in desktops, laptops and mobile.

(ii) **Availability:** The website can be available from any internet connected device in Puerto Rico.

(iii) **Reliability:** Hosted through a highly reliable server company.

(iv) **Robustness:** The stack used follows trusted and tested strategies from famous companies.

(v) **Security:** Uses HTTPS security protocols.

(c) **Maintenance**

(i) **Adaptive:** System has to adapt to updated versions of frameworks in use.

(ii) **Corrective:** Rectify some bugs observed while the system is in use.

(iii) **Perfective:** Support for new features that the users ask for.

(iv) **Preventive:** Attend small risks early to prevents future problems of the software.

(d) **Platform**

(i) **Development:** A web application based on modern architecture using react that allows guides to post the tours that they offer, will also allow users to create events that other users can see and attend. The user when logged in to their account will be able to search for tours, events, and locations. When a guide creates a tour or when a user creates an event the back-end will create said event a allow users to see this information. This information will be stored in a database created using MariaDB.

(ii) **Demonstration:** This is a project created by students and will not be used in order to earn a profit. Thus, there is no need for a demonstration platform.

(iii) **Execution:** This is a web based application, in order to be able to execute this program two things are required: access to the internet and an internet browser.

(iv) **Maintenance:** Maintenance will be composed of bug fixes, scalability, and platform and technology changes if they are necessary. Updates to third party libraries and base code may need updating in the future.

3. **Progress phase two**

A. **Tools and resources:**

1. **Front end tools (chosen):**
   (a) React
   (b) React-Bootstrap

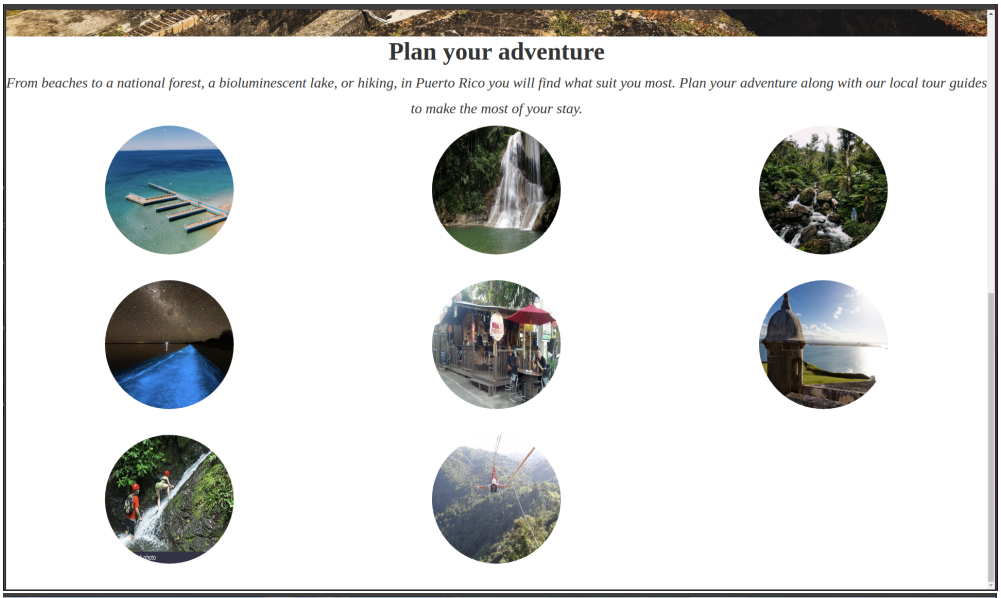
   As a team we decided to utilize React for our front end needs as it has numerous resources that are available to us the developers and the learning curve is not too difficult. Since it was created to work in hand with React,we also chose to use React-Bootstrap to compliment and facilitate the implementation in our front end.

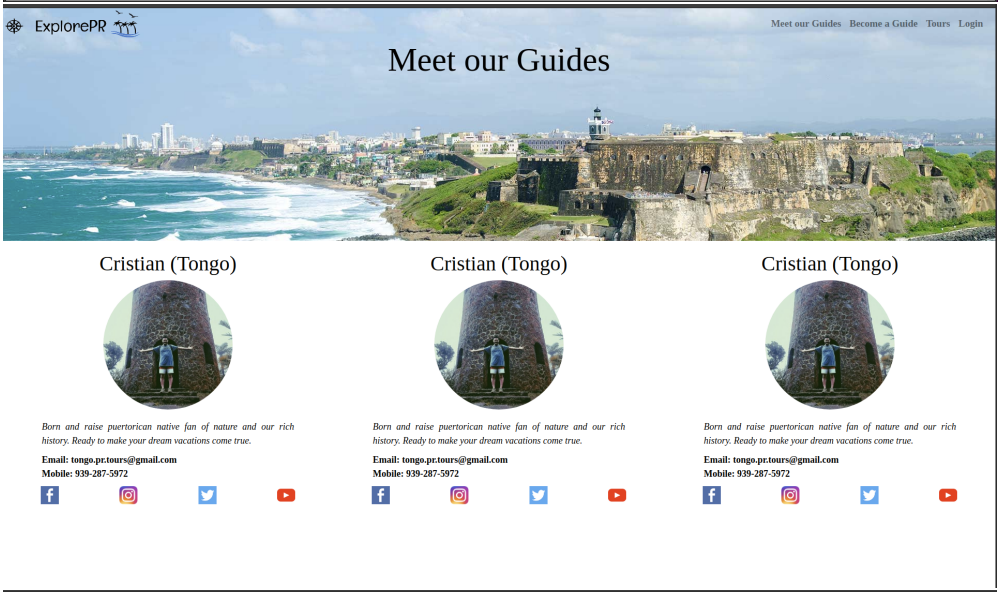
1. **Back End and Middleware Tools (chosen):**
   (a) MariaDB
   (b) ExpressJS
   (c) ReactJS
   (d) NodeJS
   (e) MySQL Workbench
      I. Sequelize

   The team went with a MERN stack (MariaDB being the M instead of MongoDB).We used the ORM called Sequelize to create and manage simple queries. Due to the time constrictions these technologies were chosen because some members had more experience with these technologies.

B. **Front End Progress:**

I. Updated the navigation bar, home, login, and create account pages design and functionality.
II. Implemented the meet our guides page.
III. Implemented the logo.
IV. Results are rendered from a dummy JSON file that will later be fetched through an API.
V. Improved Search mechanism that reduces spelling faults by the user by changing from a free search to a municipality drop-down. This change came from the testing of searching municipalities that were hard to write, and resulted in spelling errors.
VI. Implemented Create Account for customer and guides and Login Page.
VII. Improved design by blocking multiple clicks of the submit button.
VIII. Added a validation layer for the input information in real-time. This layer acts as a first step in making sure the information that reaches the database is correct.
IX. Currently working on implementing a carousel that navigates through various photos.
X. Front End Photos:


Plan your adventure
From beaches to a national forest, a bioluminescent lake, or hiking, in Puerto Rico you will find what suit you most. Plan your adventure along with our local tour guides to make the most of your stay.


ExplorePR
Meet our Guides Become a Guide Tours Login
Meet our Guides
Cristian (Tongo)
Born and raise puertorican native fan of nature and our rich history. Ready to make your dream vacations come true.
Email: tongo.pr.tours@gmail.com
Mobile: 939-287-5972
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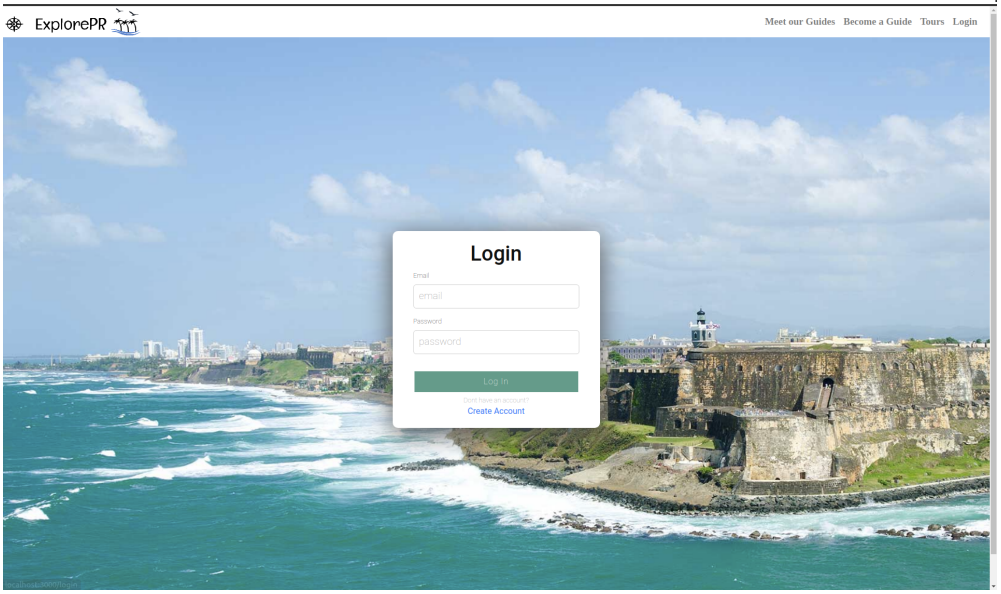
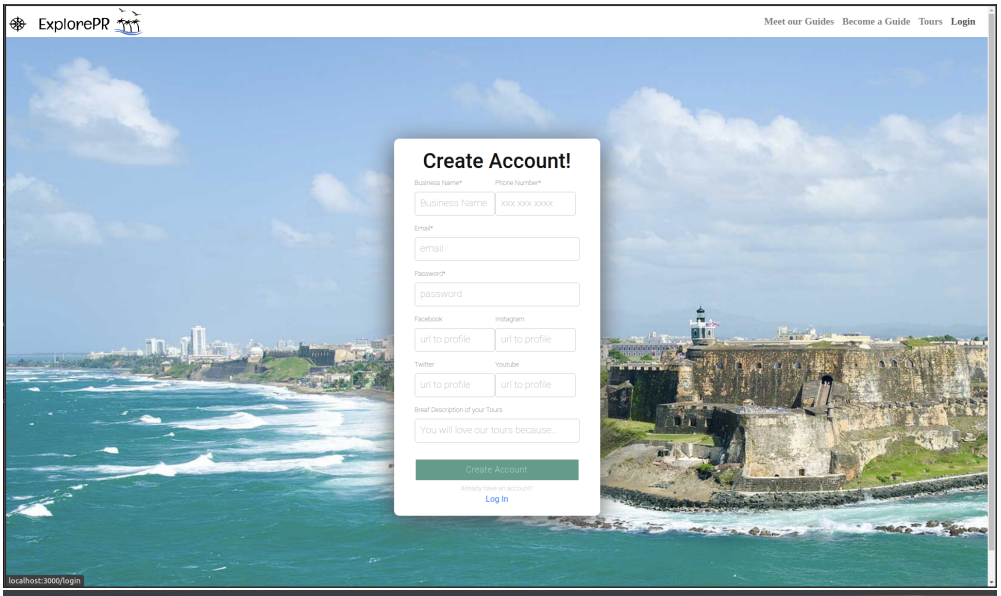
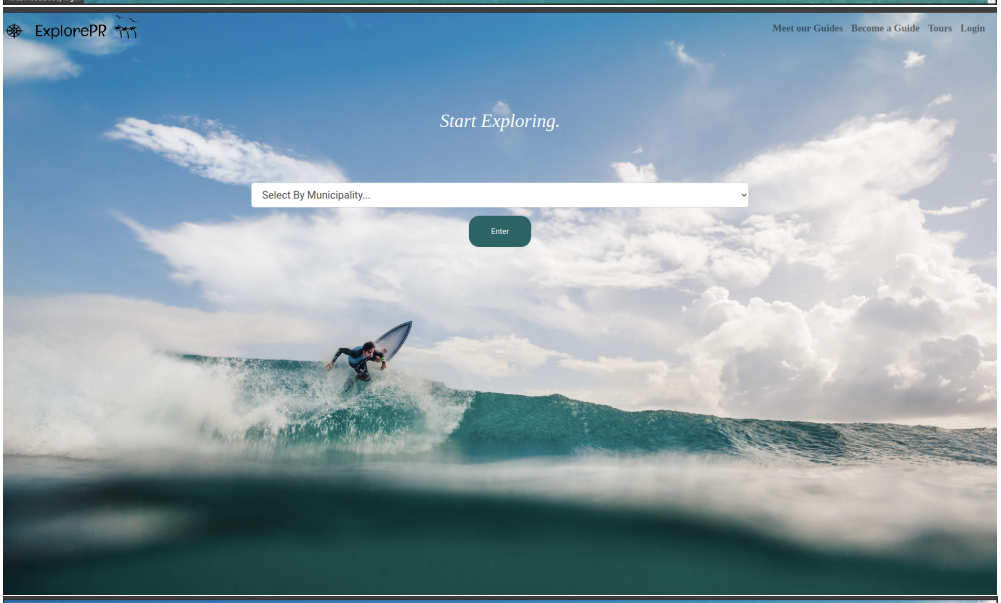
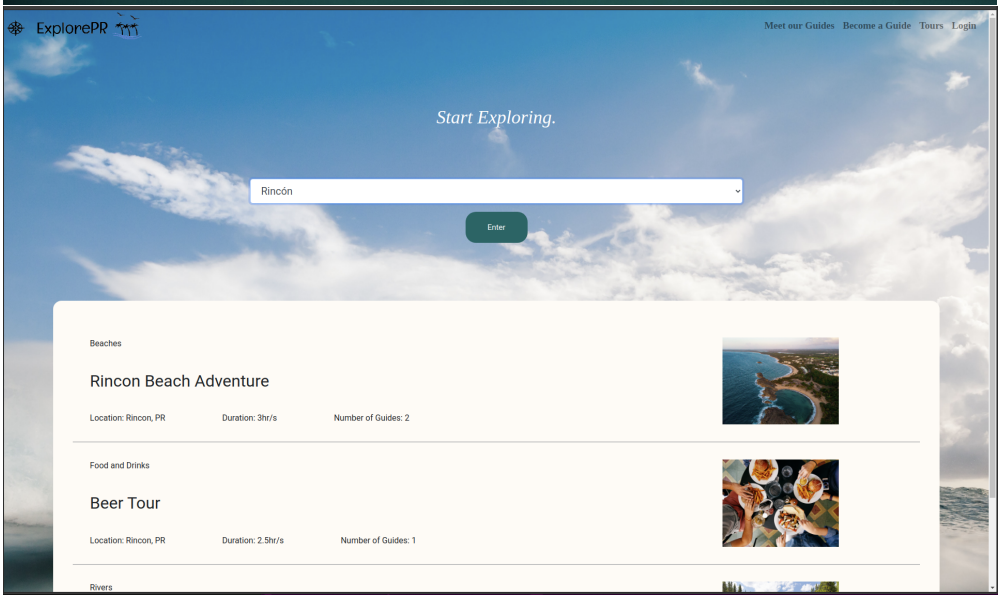
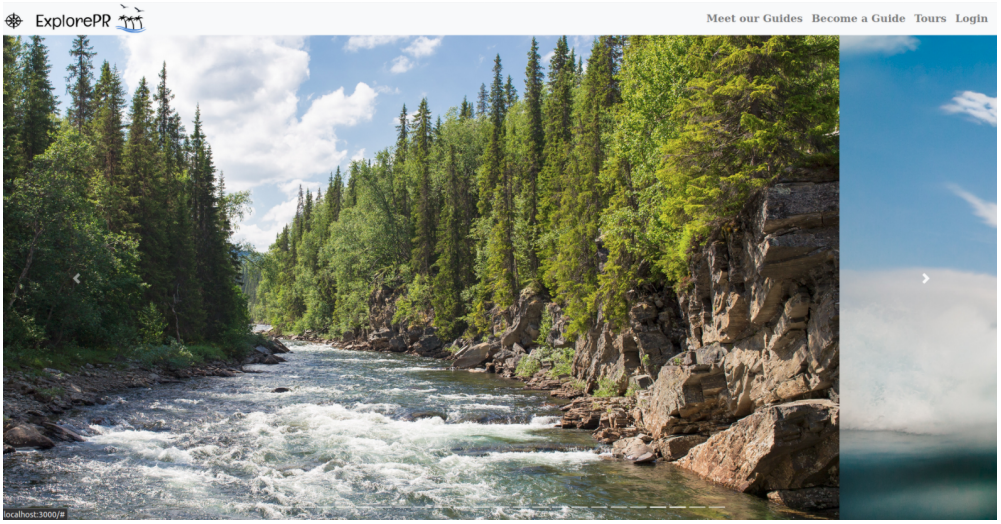

ExplorePR
Meet our Guides Become a Guide Tours Login
Login
Email
email
Password
password
Log In
Don't have an account?
Create Account


ExplorePR
Meet our Guides
Become a Guide
Tours
Login
Create Account!
Business Name*
Phone Number*
Business Name
XXX XXX XXXX
Email*
email
Password*
password
Facebook
Instagram
url to profile
url to profile
Twitter
Youtube
url to profile
url to profile
Briaf Description of your Tours
You will love our tours because...
Create Account
Already have an account?
Log In
localhost:3000/login


ExplorePR
Meet our Guides
Become a Guide
Tours
Login
Start Exploring.
Select By Municipality...
Enter


ExplorePR
Meet our Guides
Become a Guide
Tours
Login
Start Exploring.
Rincón
Enter
Beaches
Rincon Beach Adventure
Location: Rincon, PR
Duration: 3hr/s
Number of Guides: 2
Food and Drinks
Beer Tour
Location: Rincon, PR
Duration: 2.5hr/s
Number of Guides: 1
Rivers



C. **Back End Progress:**

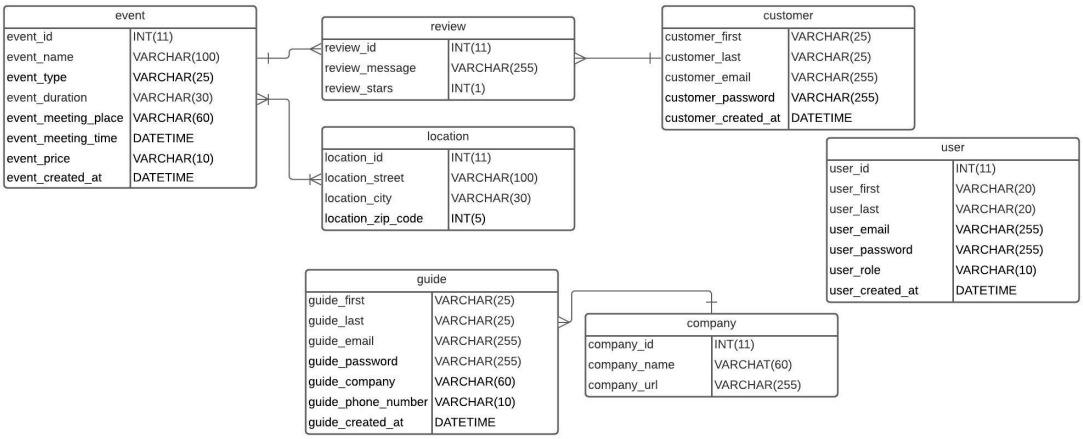
I. The Back End team made the tables for the project using the tool MySQL Workbench. This helped speed up the process instead of making the tables one by one, which would slow down development team.

II. The team created the models for the project. We also started creating the controllers(functions) that will act as the queries into getting what is asked for from the tables. Instead of creating the queries from scratch, we used Sequelize methods that would help us simplify our calls to the server.

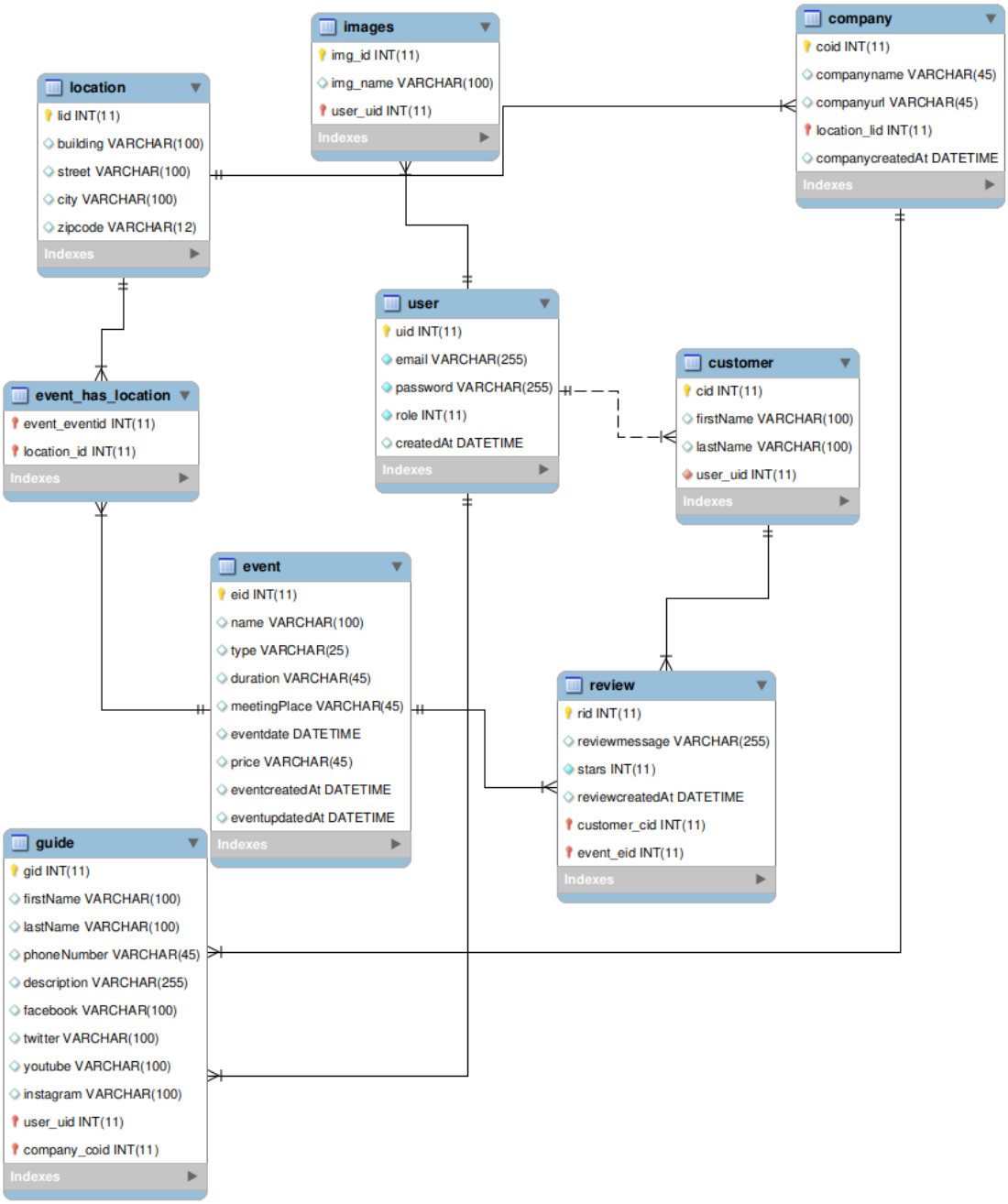
III. Several of the controllers are still in the works but a good majority has been implemented but requires further testing, as therein lies specific cases that must be addressed, an example being in the CREATE methods.

IV. The Back end team has started developing a validation layer to ensure that the email and password entered is the correct one when login in. The team also started designing a way for images to be uploaded into the Back End for when the users (whether they are customer or guide) want to show their content.

V. Back End Photos:



(a) For the sake of mentioning, we have considered utilizing multi-valued attributes for some of the data present in these tables. Although not necessary, MySQL workbench does not have support, explicitly being that it is not a full implementation in the relationship model. It will just show things that can be represented in a MySQL database. This means that certain things like inheritance or multi-value attributes cannot be modelled in this fashion.



(a) With the passing of time, the Back End team noticed ambiguity in the location table. We did not realize that the location could have multiple events or an event could have multiple locations.

```
var config = require('../config/config');
module.exports = (db, Sequelize) => {
    var user = db.define('user', {
        uid: {
            type: Sequelize.INTEGER,
            primaryKey: true,
            autoIncrement: true,
            unique: true
        },
        email: {
            type: Sequelize.STRING,
            unique: true
        },
        password: {
            type: Sequelize.STRING
        },
        role: {
            type: Sequelize.NUMBER,
            defaultValue: 1
        },
        createdAt: {
            type: Sequelize.DATE
        }
    }, {
        tableName: 'user',
        timestamps: false
    });



    return user;
};
```

```
exports.addGuide = function (req, res) { //gid automatically created by DB
    var guideData = req.body;
    user.create({
        email: guideData.email,
        password: guideData.password,
        role: guideData.role,
        creation_date: new Date().toLocaleDateString()
    }).then((new_user) => {
        console.log("New user id" + JSON.stringify(new_user, null, 2));
        console.log('Successfully added guide...\n' + JSON.stringify(req.body, null, 2));
        guide.create({
            firstName: guideData.firstName,
            lastName: guideData.lastName,
            phoneNumber: guideData.phoneNumber,
            description: guideData.description,
            facebook: guideData.facebook,
            twitter: guideData.twitter,
            youtube: guideData.youtube,
            instagram: guideData.instagram,
            user_uid: new_user.uid,
            company_coid: new_company.coid
        })
    }).then(() => {
        res.status(200).json({
            success: true,
            message: 'Successfully added recruiter!',
            first_name: guideData.firstName,
            last_name: guideData.lastName
        });
    }).catch(Error, (err) => {
        res.status(409).json({
            success: false,
            message: 'Error adding recruiter...',
            error: err
        });
    });
}
```

(a) The functions such as getAllGuides would be considered side effect free functions. These function will not cause any changes to the variables or tables.

(b) We have used the ORM Sequelize to simplify the creation of the queries from ExpressJS directly. If more complicated queries are needed Sequelize has the option of creating our own raw queries.

VI. We have established as a preliminary design, the entities of the event, location and review as an aggregate, with the root of the aggregate being the location. This organizes the group in a way that simplifies implementation. This design implies that the user will have direct access to search by location and each location will be composed of the events as results. Each event will be identifiable by a unique id on time of creation and will provide a way to update the event.

D. **Middleware Progress:**

I. The Middleware team started connecting the front end with a few of the routes of the back end.

II. Routes have yet to be completed but currently, GET methods for users works perfectly.

III. POST for create account is currently working, still working on POST for log in.

E. **User Stories:**

I. As a tourist, I would like to be able to join a tour guide's expedition so that I can enjoy the best that Puerto Rico has to offer.

(a) Users should be able to join an open tour guide's expedition if a spot is available. If one has not been created yet and the tour guide is available, then users can create an expedition by signing up. This leaves it open for others to fill the slots.

II. As a tourist, I would like to know where a tour group is supposed to meet and when so that I can make sure I am the right location.

(a) Tour groups should know who their tour guide is.

(b) Tour groups should have a specified location via GPS and a specified time particular to the AST time zone for Puerto Rico.

III. As a tour guide, I would like to be able to see who has joined my expedition so that I can keep track of them when the tour starts.

(a) Tour guides should be able to see who has joined the expedition so that they can keep a headcount and ensure who is present.

(b) First names and last names with pictures should be all that is given to the tour guide, no other info is necessary.

(c) Tour guides should be able to specify whether or not a tourist is present at the designated location.

IV. As a business owner, I would like to indicate to the application whether or not my business is open so that tour guides can bring tourists in for when they need lunch, dinner, or breakfast.

(a) Business owners are categorized as users as normal tourists are, but that a business is tied to them.

(b) Business owners should be able to specify when their place of business is open to the general public.

V. As a tour guide, I would like to be able to boot tourists for when they are acting unruly so that they do not dampen or ruin the experience of others.

(a) Tour guides that find it necessary should be able to remove a tourist from an expedition and state a reason why.

(b) This would leave a slot open but it is not meant to be taken by anybody else and will remain open because the expedition is already ongoing.

VI. As a user, I would like to be able to book the most reasonably priced flight and hotel for my trip to PR so that I do not have to spend so much time viewing prices and finding what is perfectly right for me and anybody involved.

(a) Users should be able to choose the price that satisfies their needs the most, going off ratings for a hotel and what flight is the cheapest or most affordable within reason.

VII. As a user that is already in PR, I would like to be able to just pick an affordable hotel so that I can just travel and have somewhere to stay immediately so that I can later on pick an expedition if I'd like.

(a) Users can choose whether or not they need a flight and or stay at a hotel.

F. **Tasks Gained from User Stories:**

I. Create a page that allows users to view the cheapest and/or most reasonably flights and hotel stays.

(a) This can either be either and or, meaning that users can just pick a flight and/or a hotel stay.

II. Create a UI for when users sign up for an expedition that notifies them the date and time that the tour starts.

III. Create a UI for the page that specifies who is leading the expedition. This also applies for tourists being able to see who has signed up to be part of the tour.

IV. Create an option for tour guides to remove unruly tourists that are ruining the tour experience for others.