Software Requirements Specification

for

TixGurus

Version: 1.1

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Revision History

Name	Date	Reason For Changes	Version
Ibrahim Elwadia	01-09-2019	Initial document revision	1.0
Ibrahim Elwadia	01-12-2019	Updated document index page	1.1

1. Introduction

1.1 Purpose

The purpose of this document is to specify the software requirements for the TixGurus ticket sales and event hosting web site.

The scope of the TixGurus project includes:

- Front End UI
- Back End PHP code
- Database

1.2 Document Conventions

Headings are displayed in a large bold font. Paragraphs are in blue color, 12pt font size.

1.3 Intended Audience and Reading Suggestions

This document is intended for web developers, database administrators, project manager, the client (TixGurus), software testers, managers, staff, and site administrators.
This document contains an overall description of the project, external requirements, system features, and nonfunctional requirements.
It is organized into different sections, each with a heading and several sub-sections. The document index gives an overview of the different sections and sub-sections.

Users can refer to the required section by navigating to that section using the document index. It is recommended to read the Overall Description section to get an overview of what the project is about and how it is organized.

1.4 Product Scope

The product is an online web site used by customers to get information about various local and national events such as music concerts and sports matches. Customers also use the web site to purchase tickets to current events. The web site also allows TixGurus to manage and host events using the web site's interface.

Benefits of the web site include:

- Allow customers to view past, current, and future events.
- A central place where customers can view all events instead of visiting different web sites for each event.
- Allow customers to purchase tickets.
- Allow the company to manage events through an easy to use interface.
- Allow customers to register on the web site which gives the company information about what events each customer is interested in so the company can recommend future events as well as targeted advertising to customers.
- The web site's database will house all the information about customers, events, and planners all in one place. This information can be used generate sales reports and performance figures that could help the business in making future decisions.
- Provide an online web presence that is available to customers 24/7
- Allows the generation of digital event tickets instead of printed tickets which is environmentally friendly and reduces paper waste.

Objectives and Goals:

- Provide customers with a central web site where they can checkout event information and purchase tickets
- Provide a way for customers to pay for tickets
- Provide digital event tickets which can be downloaded
- Provide the company with an event management platform
- Provide a database that houses all the customer's and event planner's information
- Provide the company with a business intelligence tool that can be used to provide customers with better services, products, and experiences.

1.5 References

This SRS report references the TixGurus database which is included in the project folder titled "Database". The database is an SQL file that contains all the database commands and the data for the TixGurus web site.

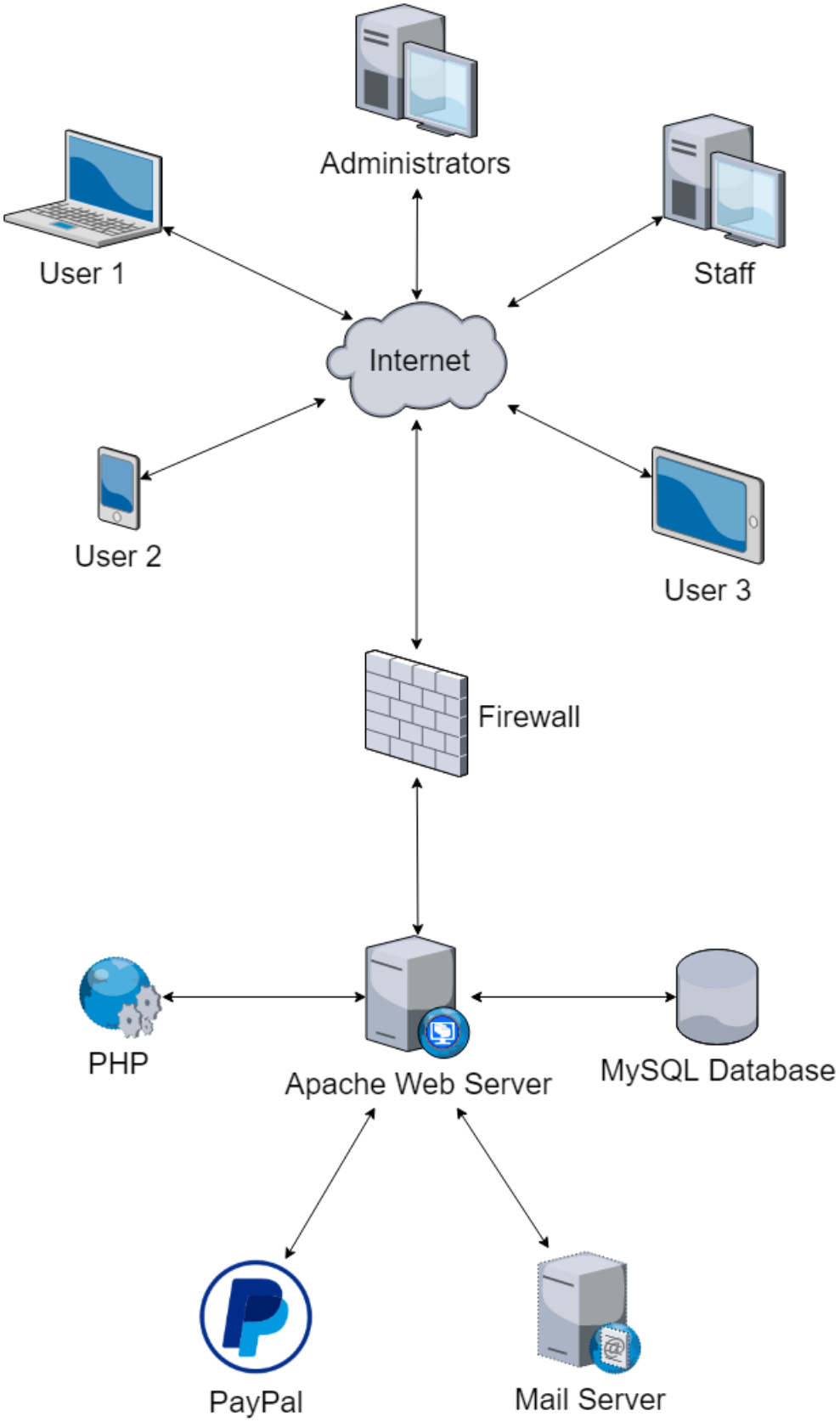
All diagrams are available in the "Diagrams" folder. A copy of the diagrams is included in this document but the external diagram files are of a higher quality.

2. Overall Description

2.1 Product Perspective

The product of this project is the TixGurus web site and integrated event hosting system. It is a custom-made web site that allows customers to view events and purchase tickets. It also allows TixGurus staff to add, edit, and delete events, and manage all aspects of the web site.
The web site is made of a User Interface (UI) referred to as the front-end, a web server that runs the backend PHP code and serves the web site to customers, and a Database that houses all the information that is presented on the web site.
The system also makes use of the PayPal API to process ticket sales and funds transfers.
An integrated or external mail server may be used to send out emails to customers.

The following diagram shows and overview of the system:


Administrators
User 1
Staff
Internet
User 2
User 3
Firewall
PHP
Apache Web Server
MySQL Database
PayPal
Mail Server

2.2 Product Functions

Overview of website functions:

- Allow customers to view event information
- Allow customers to purchase event tickets
- Allow customers to register for an account and login
- Allow customers to view orders and purchased tickets
- Allow customers to update details and change password
- Recommend events to customers based on their purchase history
- Allow staff to manage events, planners, customers, and modify the website content
- Allow staff to view site statistics, and sales reports

2.3 User Classes and Characteristics

User classes:

- General Public/Guests

The general public will use the web site to find out information about current and future events and festivals in their chosen city. They will view the web site as guests who can view event information and ticket pricing. A guest cannot purchase tickets without signing up for an account. A guest can either signup for a free account or a VIP account for $45/year.

An account is necessary in order to keep track of customer's orders and their details.

Guests are not expected to have any special technical expertise to use the web site. All that is required is an internet connection and an internet browser on any device such as a laptop, phone, or tablet.

This user class is expected to be male and female adults who are aged 18 years or over with various educational, professional, and ethnic backgrounds.

- Standard Members

Members are users who have signed up for an account on the web site, and who have provided their personal details such as name, address, and contact details.

These users view event information as well as the ability to purchase event tickets after signing up or logging in to the web site.

- VIP Members

Membership costs an annual fee of $45 and receive a 10% discount on their ticket purchases, as well as 24 hour earlier access to event tickets which gives them the opportunity to select better seats.

Their personal and contact details are stored in a secure database that also keeps track of all their ticket orders and payment information for easy checkout next time. Members receive their event tickets digitally by logging into their account.

Members are not expected to have any special technical expertise to use the web site. All that is required is an internet connection and an internet browser on any device such as a laptop, phone, or tablet.

Standard and VIP members are expected to be male or female adults who are aged 18 years or over with various educational, professional, and ethnic backgrounds.

- Company Staff

Company Staff are the staff working for TixGurus. The staff will use the web site to add, delete, and update event details. After logging into the system, they will be redirected to a special dashboard where they can manage view and events.

Staff will not have the ability to sign up for a staff account. Only the site administrator will be able to add staff members to the system. Staff information is stored in a separate table in the database and not stored in the customers table.

Staff will have access to manage events but they will not be able to perform tasks such as access the database directly or modify the web site structure or layout.

Staff are not expected to have any special technical skills other than the ability to browse the web. They will be trained on how to use the TixGurus web site and how to manage events.

Staff will be males or females with various educational and professional backgrounds.

- Administrators

Administrators are technical staff members such as Web Administrators, Database Administrators, and Web Developers who may be employees of TixGurus or outsourced contractors hired by TixGurus to perform any required maintenance and administration tasks.

Administrators are expected to have a high level of technical skills in their fields. They will be responsible to maintaining the web site and carrying out future updates and feature additions.

Administrators have full access to the entire web site, source code, database, customer and staff information. Administrators need to work in a professional manner so not to compromise the security of the system or expose customer information. Company policies and guidelines need to be followed by the administrators to protect customer information.

2.4 Operating Environment

The website requires an apache web server to run on Windows or Linux or Mac OSX operating system. The server must have support for PHP 7+ and MySQL DBMS (Database Management System).
The server must be connected to a high-speed internet connection and have access to required resources such as PayPal.
The website also requires a mail server to send out emails to customers. The mail server can be part of the web server or an external mail server. It must support SMTP protocol for sending out emails.

2.5 Design and Implementation Constraints

Design convention and programming standards:
The website code and pages are organized into a folder structure where similar items are grouped together. For example, all CSS files are in the "CSS" folder. The same folder structure exists for JavaScript, Images, and PHP files.
The software code should include comments that describe what the code is doing if it is not obvious. Variables and function names should be descriptive. The code should be properly indented and organized to make it easier to read and maintain.

File names are not to be changed, otherwise the website will not be able to load the file and it will show an error message that the file is missing.
All images should be optimized for the smallest file size possible so that the website loads quickly.

Server hardware requirements:

The web server hardware must be capable of handling the traffic coming to the web site from up to 500 customers at a time so the server must have enough CPU power and memory to handle peak traffic to the site. A high-speed internet connection from the server to the internet is also required so that customers can view the website without any unnecessary delays or taking longer than usual for the site to load up.

Database:

The website relies on MySQL for its database. The latest version of MySQL as of 2019 has been tested and confirmed to be working without any issues. The database should be backed up regularly to avoid loss of customer information and order details.

Security Considerations:

All passwords must be hashed before being stored in the database. All sensitive information such as customer details should be sent to the server using POST.

Accessibility:

The web site uses alternative text for images in order to describe what the image is about to people who may have a disability or their browser is not capable of displaying images. Text is displayed on contrasting background colors to make it easier to read. The website is designed to be responsive so that it can be accessed on all desktop and mobile devices.

2.6 User Documentation

The website includes a help page that answers the most common customer questions. This document provides the rest of the documentation that may be required by any of the stakeholders other than customers.

A Quickstart Guide is also available for Administrators and Staff members that explains how to manage events, and how to use the various functions available to staff members.

Comments inside the PHP and HTML files provide help for developers modifying the website. The website was designed to be easy to use and most functions either include labels or are self-explanatory.

2.7 Assumptions and Dependencies

The website assumes that a database and mail server is available to the website so that emails can be sent out. The website will show an error message if either one of these components is missing. Event and Venue images are stored in the "/img/uploads/" folder using with a specific naming format for each file. If the file name is changed, the image will not show on the website.

The website depends on the PHPMailer library to send out emails. It requires port 25 to be accessible to send out emails. The port number is configured in the "/config/config.php" file and should be changed if port 25 is not available.

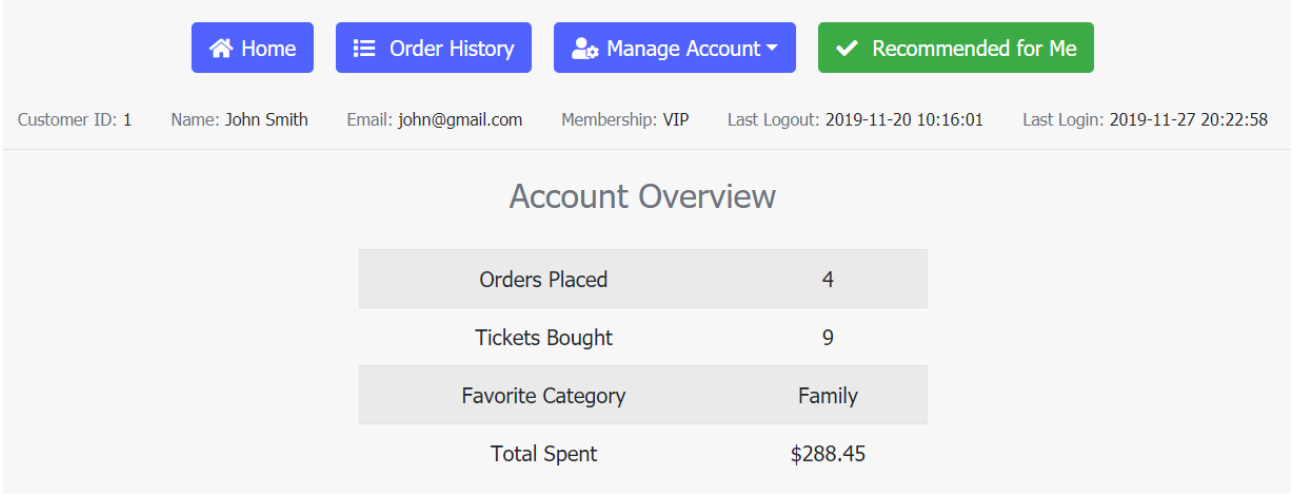
The website also requires a modern web browser with JavaScript enabled for it to be displayed as it was intended.

3. External Interface Requirements

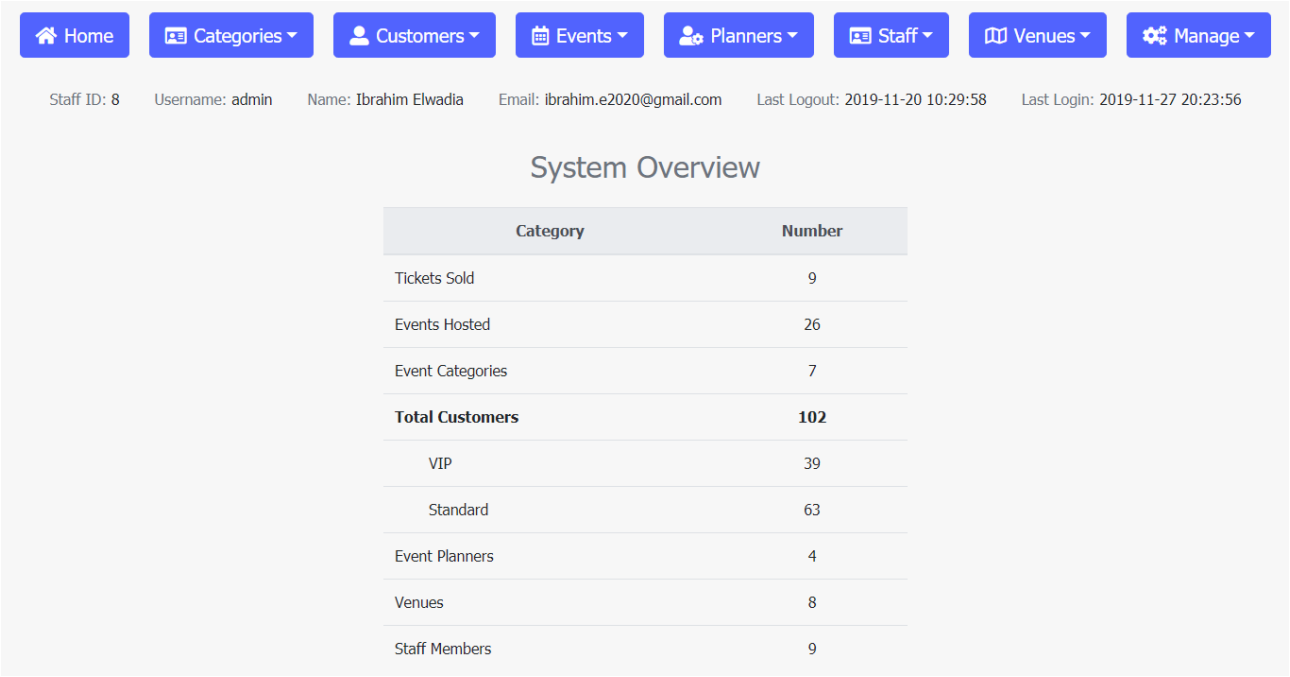
3.1 User Interfaces

The website structure is built using HTML and PHP and styled using Bootstrap v4.3.1 framework. The header and footer are present on every page of the web site except on user/staff account pages where the footer is not necessary.

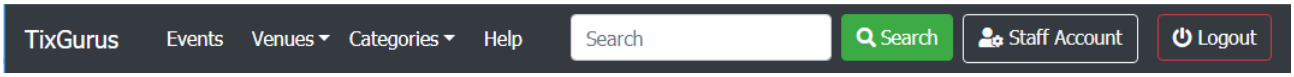
After logging in, the customer is taken to their account/profile page where they get an overview of their order history and basic account details. At the top of the page is buttons that help the customer manage their account.



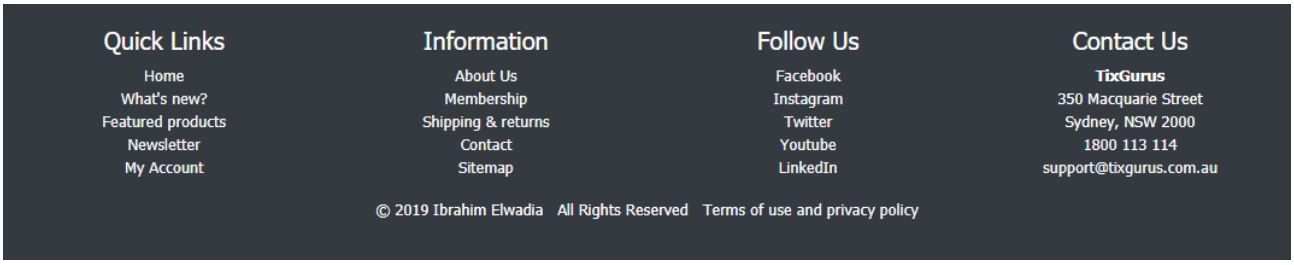
A similar setup is also implemented for staff members, where after logging in they are automatically redirected to their profile page, but they can view site and event statistics as well as manage all events by using the blue action buttons at the top of the page.



The navigation bar appears on every page of the website to help the user navigate to different pages.



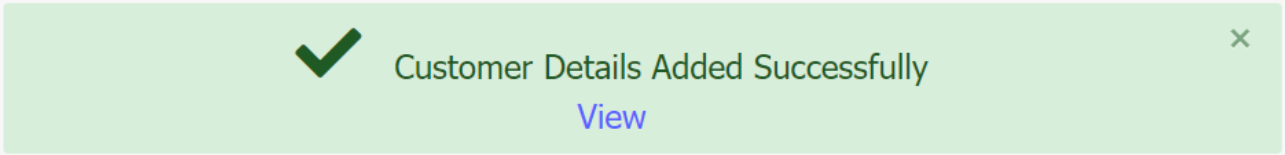
The footer appears on every page except as mentioned above.



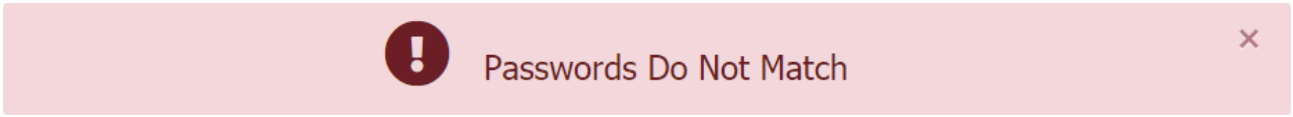
There are no specific keyboard shortcuts used except for whatever the browser supports, such as scrolling up and down using the arrows or the Page Up and Page Down buttons.

The website displays success and error messages using color-coded alert boxes that appear whenever an action completed successfully or an error occurs.

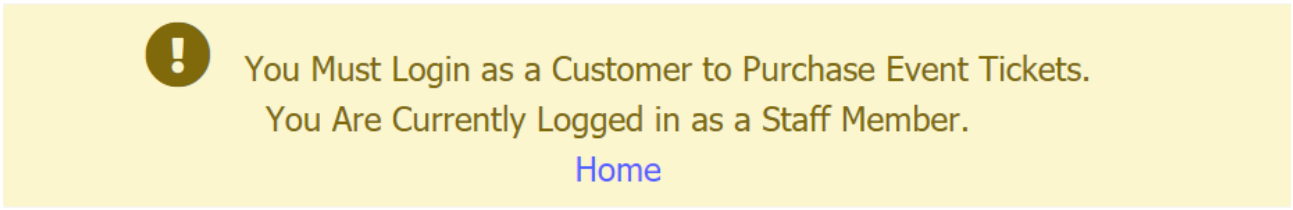
Example of a success message:



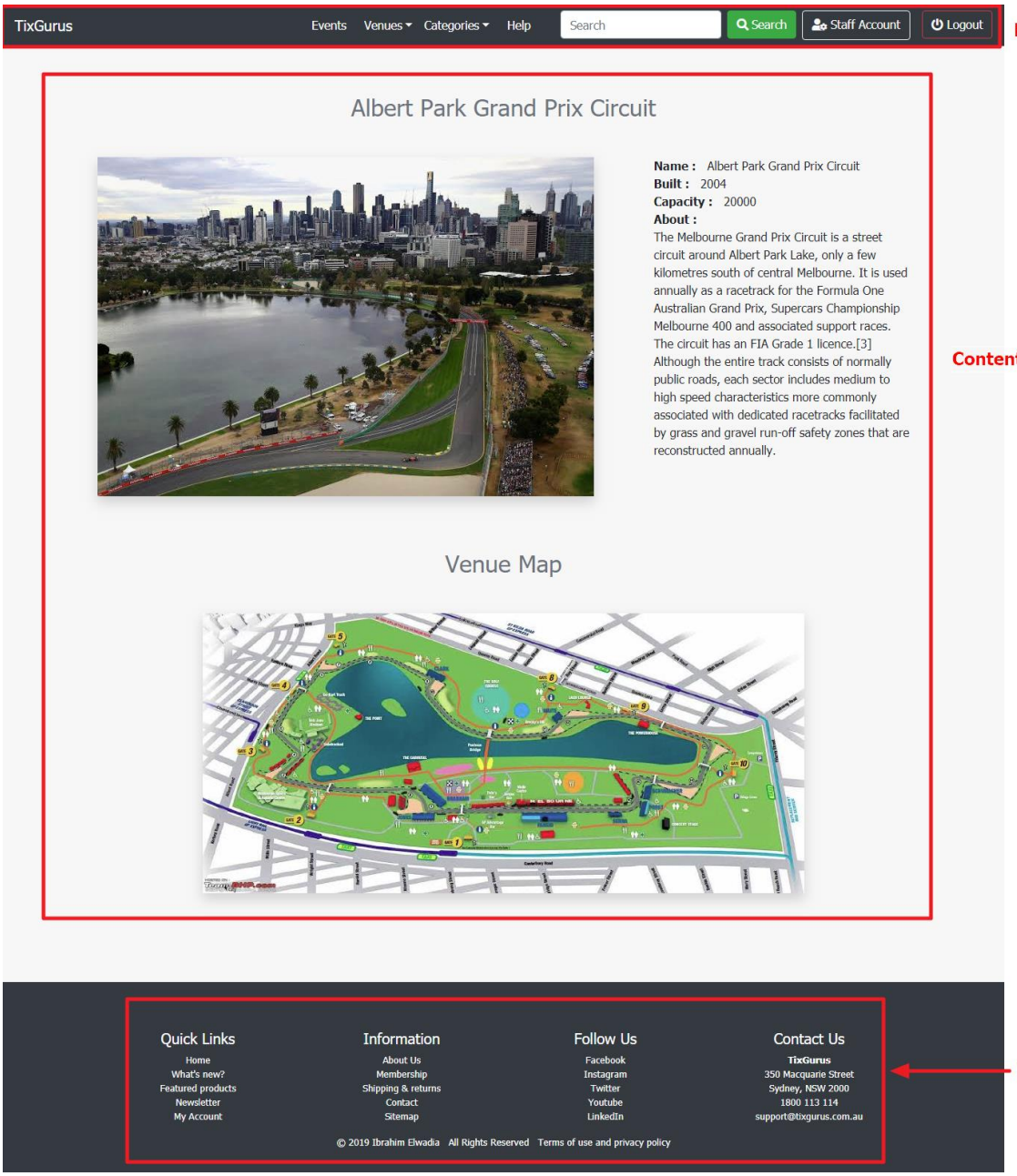
Example of an error message:



Example of a warning message:



The web site uses a simple layout that divides the page into three main sections, consisting of a navigation bar the top, followed by the main content, and ending with the page footer. This layout is used throughout the website for consistency.



3.2 Hardware Interfaces

Hardware interfaces used to interact with the TixGurus web site include a keyboard, a mouse, and a monitor. On mobile devices, only the device's display is required to operate the website. The web site is designed to be displayed in the English language and was designed to accept English input for forms. Although the website is capable of displaying any language that is supported by the user's device, the database may not accept inputs that are not in English.

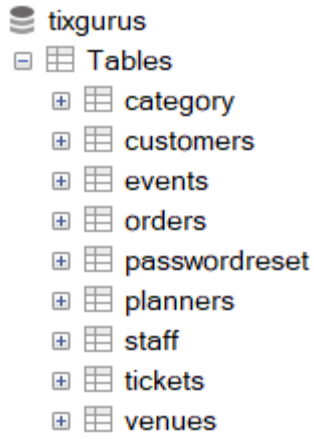
3.3 Software Interfaces

The TixGurus website interacts with several other software components in order to achieve its goals. These software components include:

- MySQL v8 or MariaDB v10.4.8
- Apache v2.4.41 web server
- phpMyAdmin v4.9.1 or SQLyog v13+
- PHPMailer v6.1.3
- PHP v7.3.11
- PayPal API
- Any modern operating system on desktop or mobile devices

The website gets its data about current events and venue information from the database, where all the data required to operate the website is stored. The database includes several tables, each one containing data about a specific entity.

List of database tables:



The database is a vital part of the website and the website will not work at all without it.
The database structure must be structured like specified in the ERD diagrams in Section 8 - Appendix B.

External services needed for the website include PayPal API which is used to process customer payment for event tickets. PayPal is integrated into the TixGurus website and communication with the PayPal server is done through the internet. PayPal takes care of checking if there are enough funds in the customer's account and carries out the fund transfer from the customer to the TixGurus PayPal account. The TixGurus website simulates funds transfer in a sandbox environment that replicates a live environment but without any transfers actually taking place.
No customer data is shared with PayPal. The only information that is shared with PayPal is the amount of money to be transferred.

PayPal account information is available in the README.txt file in the project's root directory.

3.4 Communications Interfaces

The TixGurus website sends out emails to customers via the Simple Mail Transfer Protocol (SMTP) using port 25. SMTP requires TCP/IP protocol to operate.
The website is served by an apache server using HTTP protocol for data transfers between the server and the client. Customer information, logins, and passwords are transferred from the client to the server using the POST method to keep sensitive information protected.

The GET method is used to retrieve non-sensitive information from the server, such as search terms or status messages. This data is passed through the URL to the appropriate pages to be processed.

All passwords are encrypted using BCRYPT encryption before being stored in the database. This ensures that any unauthorized access to the database does not expose customers' or staff passwords.

4. System Features

4.1 Allow customers to view event information

This feature is a basic component of the TixGurus website, which is to allow customers to find events from all around Australia and get information about the event such as the event date, starting and closing times, event city, which venue the event is hosted at, what the event is about, and how much the tickets cost. It is a high priority feature for customers to get all the necessary information about an event in a simple and efficient manner without having to look for the information in various places on the website. All the event information should be contained in one easy to find place on the website.

4.1.2 Stimulus/Response Sequences

To view event information, the customer must load up their browser, navigate to the URL www.tixgurus.com.au, and then click on "Events" in the navigation bar at the top or scroll down the main page to view all the events on sale. Each event is presented in a card that contains a poster image of the event, the event name, the city where the event is held, a brief description of the event, as well as the starting and closing time, the date, and the venue. The event card also has two buttons, one to buy tickets and the other is for more information about the event. The "More Info…" buttons opens a dialog box that has a more detailed description of the event as well ticket prices.

There is also the option to view events by a particular category such as Music or Sporting events. To access that option, the customer clicks on the "Categories" drop-down button in the navigation bar which then open up a menu where the displays the various categories. The customer clicks on one of the categories they are interested in and they will be presented with all the events in that category.

4.1.3 Functional Requirements

Functional Requirements include:

- REQ-1: The browser must have support for JavaScript and CSS style sheets
- REQ-2: Any version of Google Chrome or Mozilla Firefox that was released within the last two years
- REQ-3: Any Windows operating system from Windows 7 and onwards is required.
- REQ-4: Any modern web browser on Android or Apple devices
- REQ-5: A minimum screen width of 250px. The website may not look good if the screen is less than that resolution.

4.2 Allow customers to purchase event tickets

4.2.1 Description and Priority

This feature is an essential feature, which is to allow customers to make ticket purchases with the option of choosing how many tickets to buy and choose what class of tickets. There are three ticket classes to choose from. This is a high priority feature.

4.2.2 Stimulus/Response Sequences

Customers need to sign up for an account before they can purchase tickets. Sign up is free but there is the option of becoming a VIP member which costs $45/year. VIP members get a 10% discount on their tickets.

Once a new customer signs up, they can click on the “Buy Tickets” button which is displayed on all events. From there the customer is taken to the order form where they enter how many tickets they wish to purchase and choose the ticket class. Once done they click on the PayPal button to pay for their tickets, and once payment is completed, they click on the “Finish” button to complete the order.

Existing customers will need to login before they can purchase tickets. They will be redirected to the login page if they are not logged in already.

The website does not allow staff members to purchase tickets. If a staff member wishes to purchase event tickets, they will need to create a new customer account and from there they can purchase any

tickets just like a regular customer. This is because customer details and orders are stored separately in the database and shouldn't be mixed up with staff records.

Once an order is completed, customers can view their orders and download their tickets by clicking on "My Account" on the navigation bar, and then clicking on the "Order History" button. Clicking on the magnifying glass icon in the "View Order" column of the table will list all the tickets within that order. Each row within the order details page shows the event information and the option to download the ticket in PDF format by clicking on the ticket download icon in the last column. Customers can then print out the ticket or download it to their mobile device and show it at the entry of the event.

4.2.3 Functional Requirements

Functional Requirements include:

- REQ-1: The browser must have support for JavaScript and CSS style sheets
- REQ-2: Any version of Google Chrome or Mozilla Firefox that was released within the last two years
- REQ-3: Any Windows operating system from Windows 7 and onwards is required.
- REQ-4: Any modern web browser on Android or Apple devices
- REQ-5: A minimum screen width of 250px. The website may not look good if the screen is less than that resolution.
- REQ-6: Customer needs to be logged in to purchase tickets
- REQ-6: Staff members cannot purchase tickets unless they create a customer account
- REQ-7: Customers need to have enough funds to pay for the tickets
- REQ-8: Customers must login to their PayPal account or create a new account in order to pay for tickets
- REQ-9: Minimum ticket quantity is 1
- REQ-10: A 10% discount is automatically applied to VIP members
- REQ-11: All prices are in Australian dollars
- REQ-12: Seats are automatically allocated to customers based on availability and allocation by venue management.
- REQ-13: Customers need to have a way to access their purchased tickets
- REQ-14: Tickets need to be available in a digital format

- REQ-15: Tickets need to be shown before entering the venue.

4.3 Allow customers to register for an account and login

4.3.1 Description and Priority

This feature is an essential feature of the TixGurus website, which is to allow customers to create an account and be able to login in order to purchase tickets and view their purchase history and tickets. This is a high priority feature.

4.3.2 Stimulus/Response Sequences

If a customer wishes to purchase event tickets, they need to have an account or create a new account. To login with an existing account, the customer clicks on the "Login/Join" button in the top right corner of the navigation bar, enter their email and password in the login form and click on the "Login" button.

A new customer can create an account by clicking on the "Login/Join" button in the top right corner of the navigation bar, click on the green "Create an account" button, fill out their details, choose either a standard membership or VIP membership, and click on the "Sign Up" button.
Once signed up, they can login and manage their account from their profile page.

4.3.3 Functional Requirements

Functional Requirements include:

- REQ-1: The browser must have support for JavaScript and CSS style sheets
- REQ-2: Any version of Google Chrome or Mozilla Firefox that was released within the last two years
- REQ-3: The customer must supply a valid email address when signing up.
- REQ-4: The passwords entered must match
- REQ-5: To login, the customer must supply a valid email address and password
- REQ-6: Customers must sign up for an account before they can login
- REQ-7: Customers have the option to reset their password if they forget it
- REQ-8: Passwords have a maximum of 20 characters
- REQ-9: Passwords should be strong

- REQ-10: All items with an asterisk in the sign-up form must be filled out

4.4 Allow customers to view orders and purchased tickets

4.4.1 Description and Priority

This feature allows registered customers to login to their accounts and view their purchase history as well as view and download their tickets. This is a high priority feature.

4.4.2 Stimulus/Response Sequences

If a customer wishes to purchase event tickets, they need to have an account or create a new account. To login with an existing account, the customer clicks on the "Login/Join" button in the top right corner of the navigation bar, enter their email and password in the login form and click on the "Login" button.

Once logged in, a customer can view all their previous orders and download their tickets by clicking on "My Account" on the navigation bar, and then clicking on the "Order History" button. Clicking on the magnifying glass icon in the "View Order" column of the table will list all the tickets within that order. Each row within the order details page shows the event information and the option to download the ticket in PDF format by clicking on the ticket download icon in the last column. Customers can then print out the ticket or download it to their mobile device and show it at the entry of the event.

4.4.3 Functional Requirements

Functional Requirements include:

- REQ-1: Customer needs to be logged in order to view their order and download event tickets
- REQ-2: All prices are in Australian dollars
- REQ-3: Seats are automatically allocated to customers based on availability and allocation by venue management.
- REQ-4: Tickets need to be available in a digital format
- REQ-5: Tickets need to be shown before entering the venue.

4.5 Allow customers to update their details and change their password

4.5.1 Description and Priority

This feature is an essential feature which allows customers to update their personal details and change their password any time without having to get in contact with TixGurus helpdesk staff. This is a medium priority feature.

4.5.2 Stimulus/Response Sequences

To update their personal details, the customer must first login to their account, click on the "Manage Account" button and click on the "Update My Details" in the drop-down menu. A form containing their contact details and address is then shown where the customer can change or update any of the values and when done click on the "Update" button at the bottom of the page in order to update their details in the database.

To change their password, the customer must first login to their account, click on the "Manage Account" button and click on the "Change Password" in the drop-down menu. The customer is then asked to enter their current password and the new password. When done entering the passwords, click on the "Change Password" button to change the password.

4.5.3 Functional Requirements

Functional Requirements include:

- REQ-1: The browser must have support for JavaScript and CSS style sheets
- REQ-2: When changing the password, the current password must be correct, and the new password must match with the confirmation password.
- REQ-3: When updating their details, any fields with the asterisk symbol must be filled out and cannot be blank.

4.6 Recommend events to customers based on their purchase history

4.6.1 Description and Priority

This feature is a medium-priority requirement of the project. It suggests to customers what events they may be interested in based on their previous event booking history.

4.6.2 Stimulus/Response Sequences

Once a customer logs in, they will be presented with their account history and a button that takes the customer to their favorite category based on their event booking history. If the customer has not purchased any tickets, the button will be disabled.

4.6.3 Functional Requirements

Functional Requirements:

- REQ-1: the customer must be logged in
- REQ-2: The customer must have purchased at least one ticket
- REQ-3: If the customer has not purchased any tickets yet, this feature will be disabled for that customer.

4.7 Allow staff to manage events, planners, customers, and modify the website content

4.7.1 Description and Priority

This is a high-priority feature that is essential to managing the events on the website.

It allows staff members to edit, delete, and create new events, planners, customers, and venues.

This feature also allows the user to upload event posters, seat maps, and venue photos.

4.7.2 Stimulus/Response Sequences

The site administrator or any staff member must first login using their username and password.

Once logged in, they can use the buttons at the top of the dashboard to manage all aspects of the website, such as adding new events, planners, and modifying venue information.

4.7.3 Functional Requirements

Functional Requirements:

- REQ-1: The browser must have support for JavaScript and CSS style sheets
- REQ-2: The user must be a staff member
- REQ-3: Staff member must login using their assigned username and password

4.8 Allow staff to view site statistics and sales reports

4.8.1 Description and Priority

This is an essential feature of the website's requirements. Staff members need to have access to sales reports that display how many tickets have been sold, what are the most popular events, how customers are using the site, and how many events each planner is hosting.
All this information is printable using the browser's print function.

4.8.2 Stimulus/Response Sequences

After logging in as a staff member, the user is redirected to their dashboard, where the staff member can view site statistics, event information, and ticket sales. The staff member can also export this information to a PDF file by clicking on the **Sales Report** link at the top of the dashboard page.

4.8.3 Functional Requirements

Functional Requirements:

- REQ-1: information must be accurate and up-to-date
- REQ-2: It must display top 5 weekly events, top 5 monthly events, and top 10 yearly event.
- REQ-3: The information should be organized in an easy to understand format
- REQ-4: The user should be able to export the information to a PDF file

5. Other Non-functional Requirements

5.1 Performance Requirements

TixGurus requires a web server and an SQL server that is capable of handling up to 500 visitors to the website at the same time. PHP and MySQL are quick and efficient at generating and serving dynamic web pages and are expected to meet the performance requirements.

TixGurus should be hosted on a server that is connected to a high-speed internet connection to handle traffic during peak periods. Most Linux web servers from hosting companies such as CrazyDomains.com.au have high speed internet connections that meet the requirements to host the TixGurus web site.

Customers are expected to have a recent web browser such as Firefox or Google Chrome in order to browse the web site and render it as it was designed to look. The website is designed to be responsive on mobile devices and tablets.

5.2 Safety Requirements

- Customers must have an up-to-date anti-virus software installed to protect them from malware and viruses when browsing the internet.
- Although not a requirement for this project, SSL should be implemented on the website to protect customer information when visiting the website.
- Browser tabs/windows should be closed and cookies and cache should be cleared after a customer or staff member logs out of their account to keep their account secure.
- Ad-blocking extensions for browsers are good to have to block ads and other distractions when browsing the web.
- If the website needs to be accessed by customers with a disability, appropriate accessibility checks must be carried out to confirm that the website meets accessibility standards.

5.3 Security Requirements

The TixGurus database is a critical part of the system and it must be protected from accidental deletion or possible data corruption. Administrators are required to make daily backup copies of the database to prevent accidental or intentional data loss.

Security measures must also be taken to protect the database from unauthorized access. Only administrators are allowed direct access to the database as it contains confidential customer information. A firewall must be used to protect the TixGurus server from the internet.

Customers and staff must choose strong passwords for their accounts to prevent hackers from guessing their password and accessing their account.

It is recommended to clear the browser cache and cookies after logging out of the web site.

5.4 Software Quality Attributes

The website should be easy to use, and have a consistent layout and style throughout the site. Being responsive is an advantage; it allows customers to use mobile devices to access the web site. Running on on PHP and an Apache server provides a reliable platform for the website which leads to high up-time and availability.

The PHP code was written in a way to make it easy to maintain the website by other developers. This includes the use of comments in code to explain what the code does, indentation to help identify various blocks of code, use of descriptive variable names and functions, and descriptive filenames.
The website uses a simple flat folder structure that makes it easy to locate various files. Files are grouped into these folders according to their function.
All SQL code should be stored in the DBModel.php file in order separate database functions from the front-end views.

5.5 Business Rules

Only staff members and administrators have the access level to manage events, and modify the website. In the future, the option can be added to enable the administrator to disable staff accounts instead of deleting them in order to prevent certain staff members from logging in.

VIP customers will automatically receive a 10% discount on all their purchases and if they require any technical support then they will get a priority over other customers.

Only the administrator can create staff accounts. Staff members do not have a sign-up option where they can create their own account. They must ask the administrator to create an account for them.

6. Other Requirements

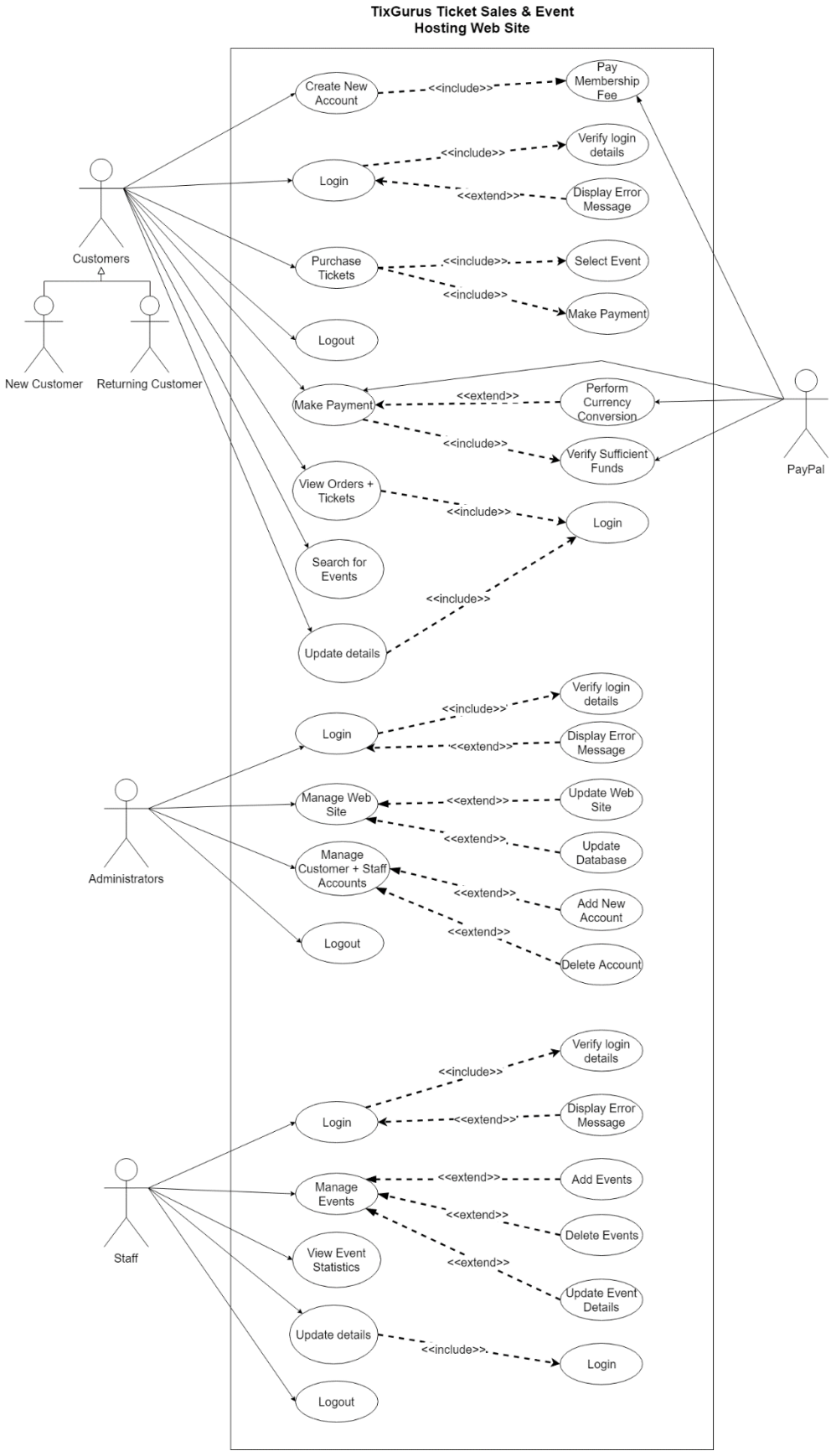
The data in the database is stored using UTF-8 encoding that may display as strange symbols if the browser does not support that character encoding. A modern browser is required to display all characters correctly.

7. Appendix A: Glossary

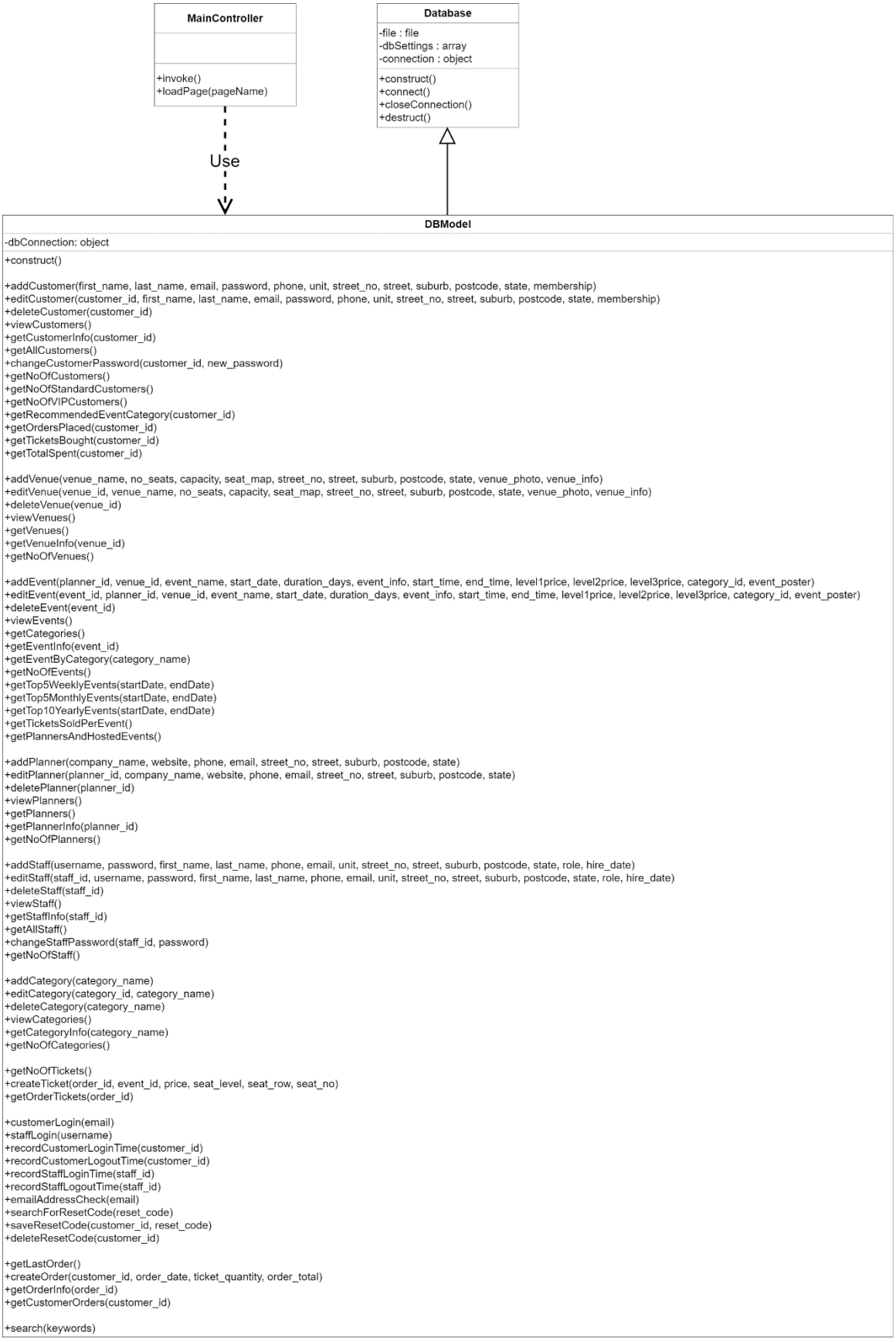
PHP: server-side scripting language used to generate dynamic web content.
DBMS: Database Management System
CSS: Cascading Style Sheets. Used to style web pages.
BCRYPT: an encryption method used to encrypt the passwords of staff and customer accounts

8. Appendix B: Analysis Models

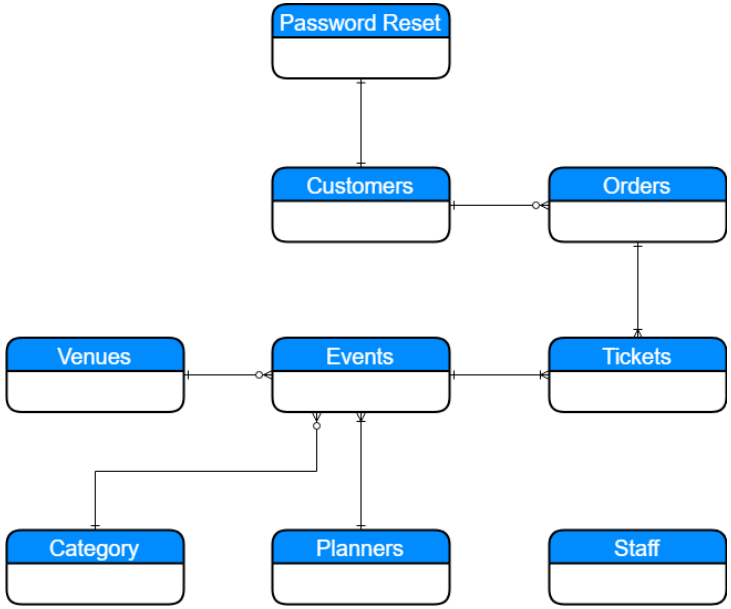
Use Case Diagram:



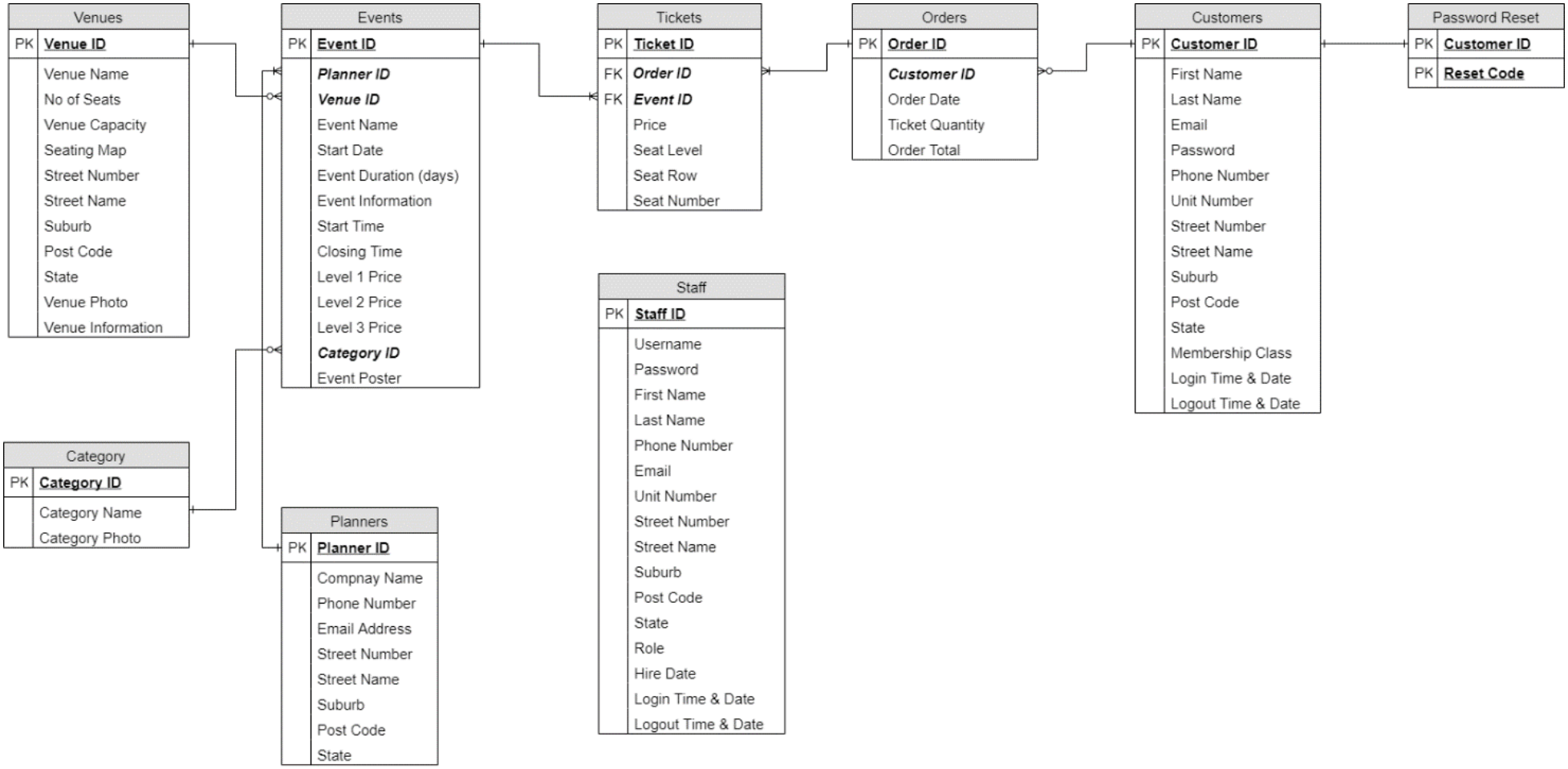
Class Diagram:



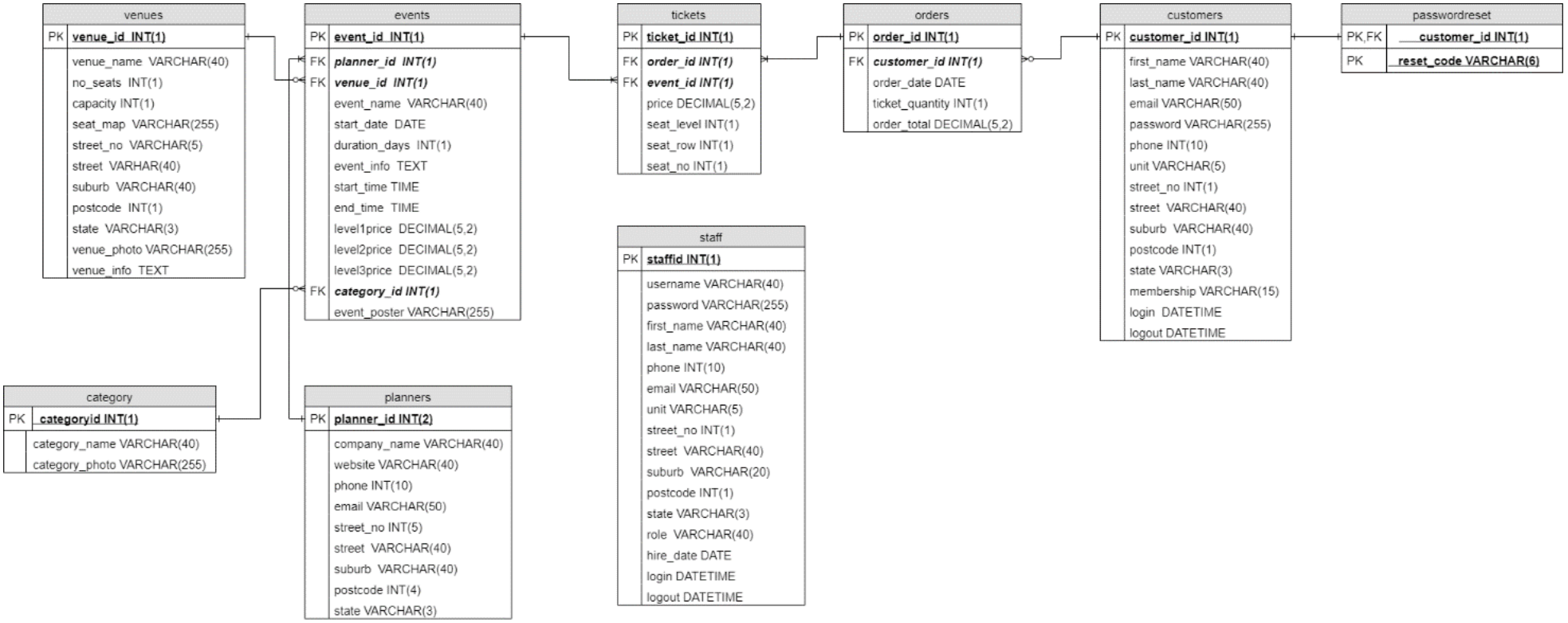
Conceptual database model:



Logical database model:



Physical database model:



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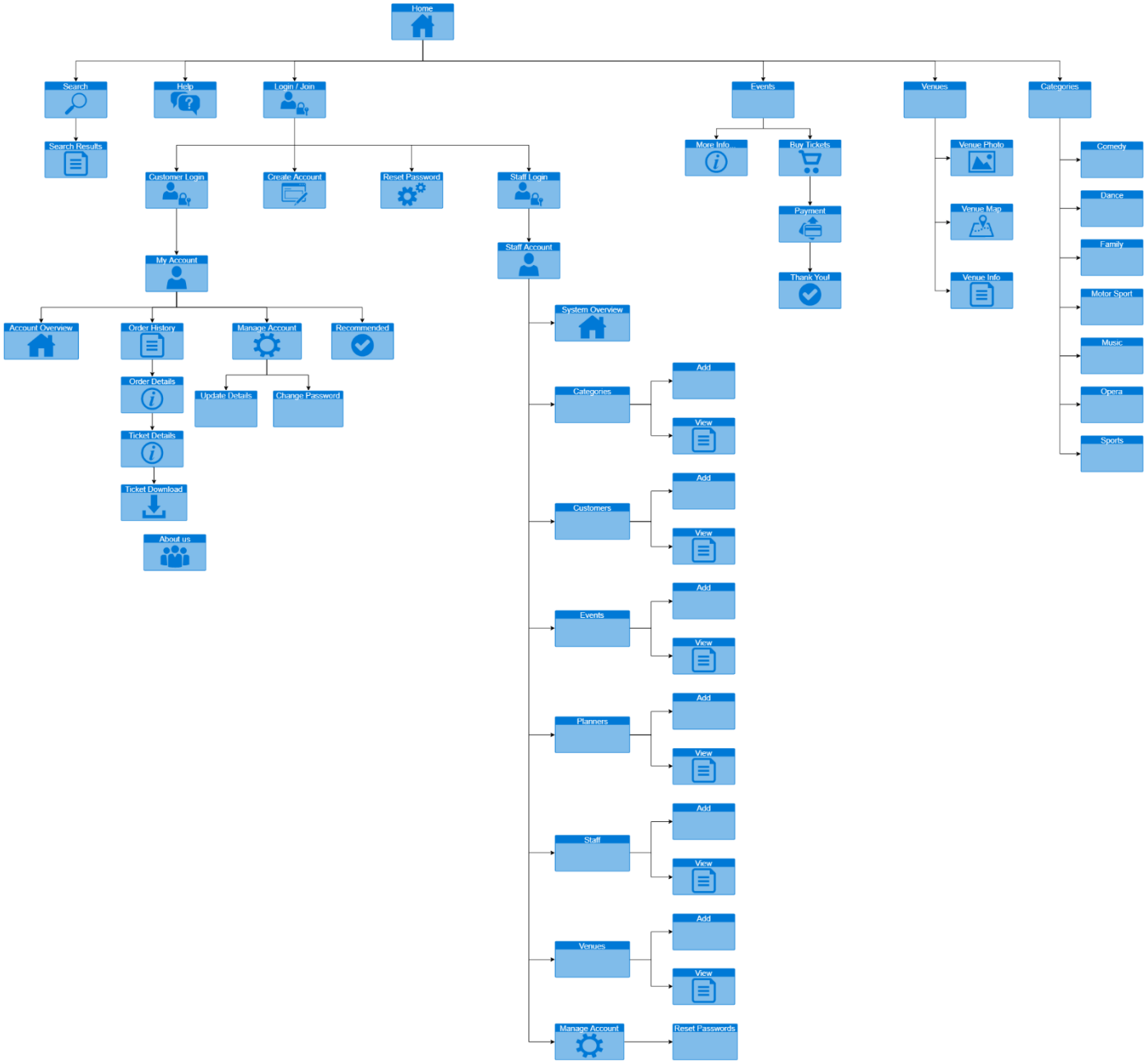
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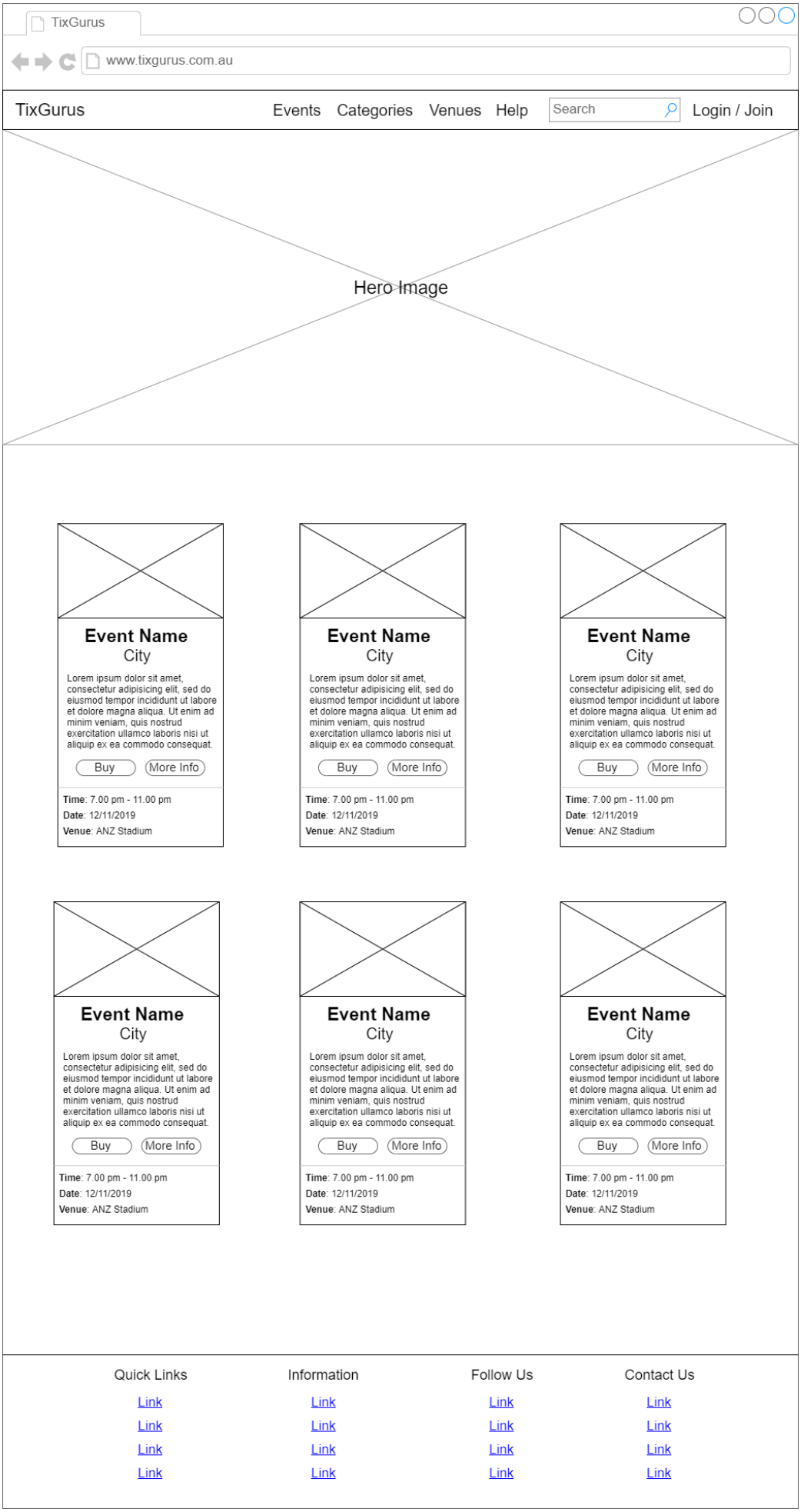
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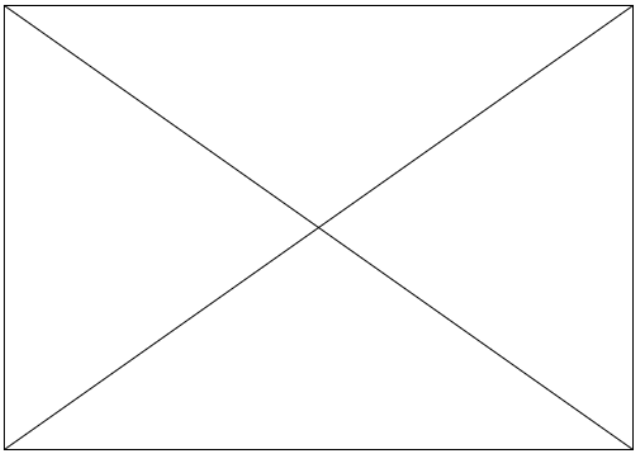

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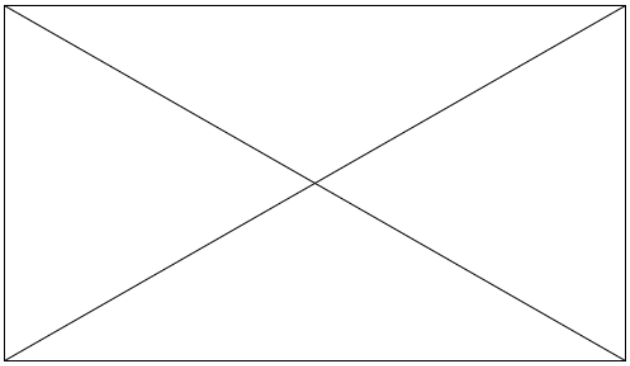

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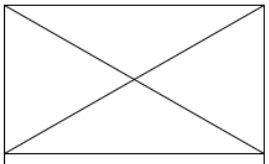

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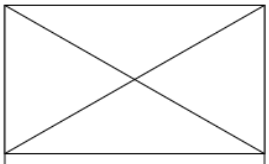

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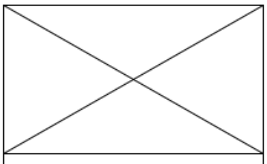

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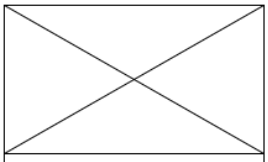

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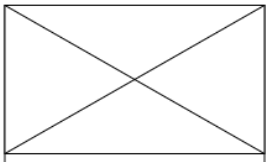

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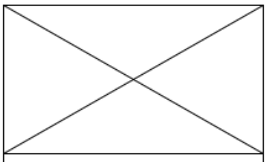

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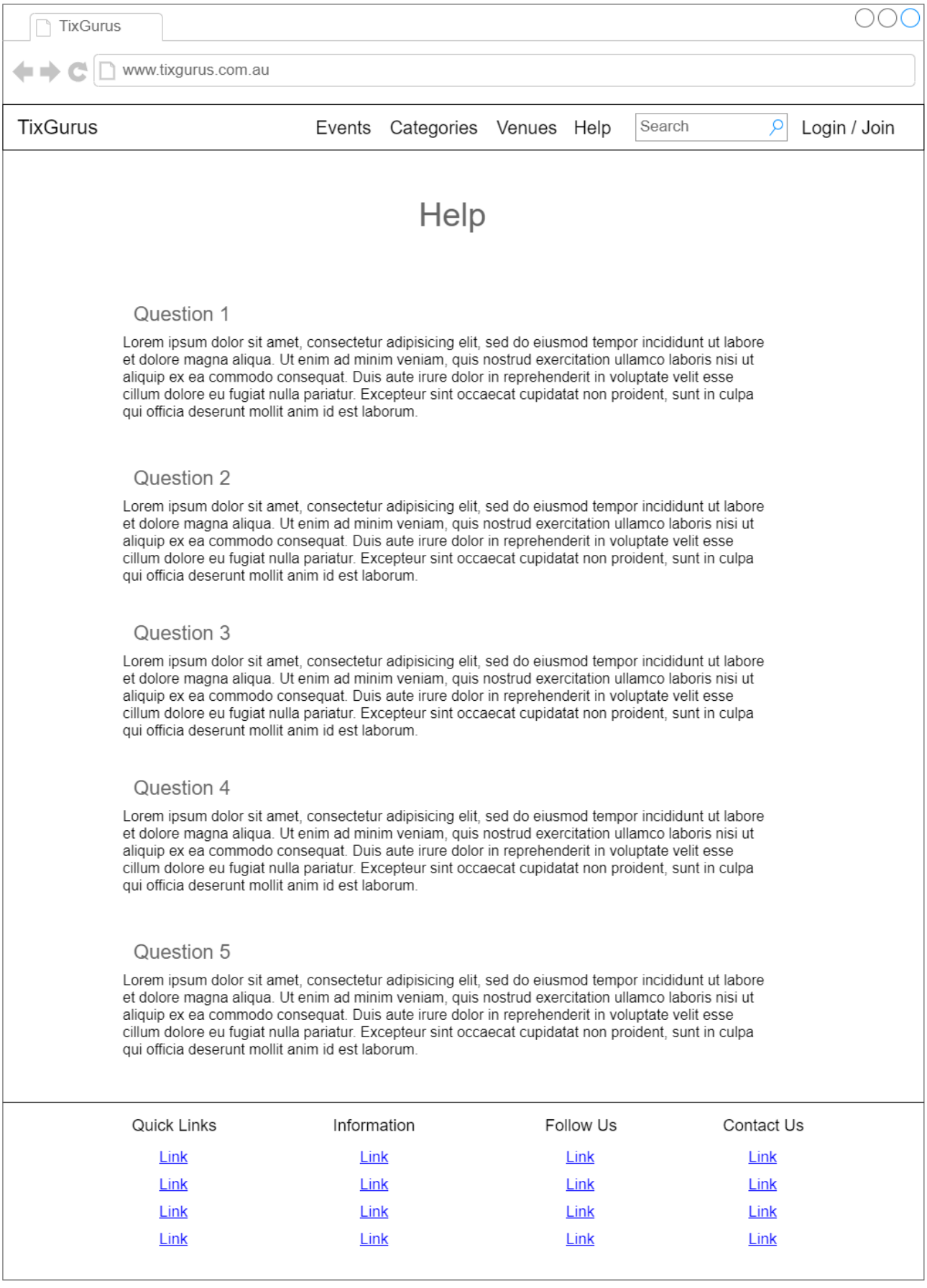
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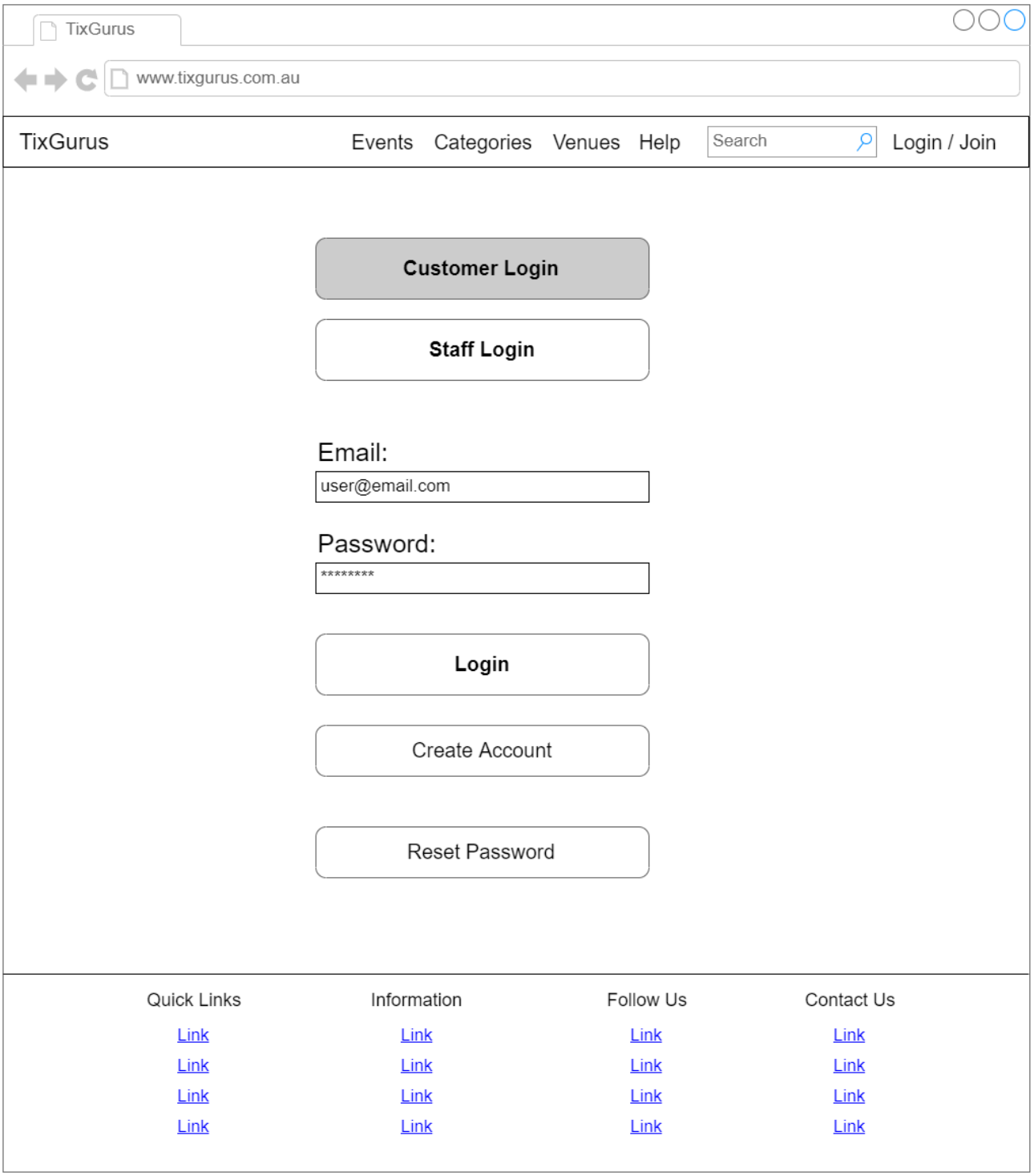
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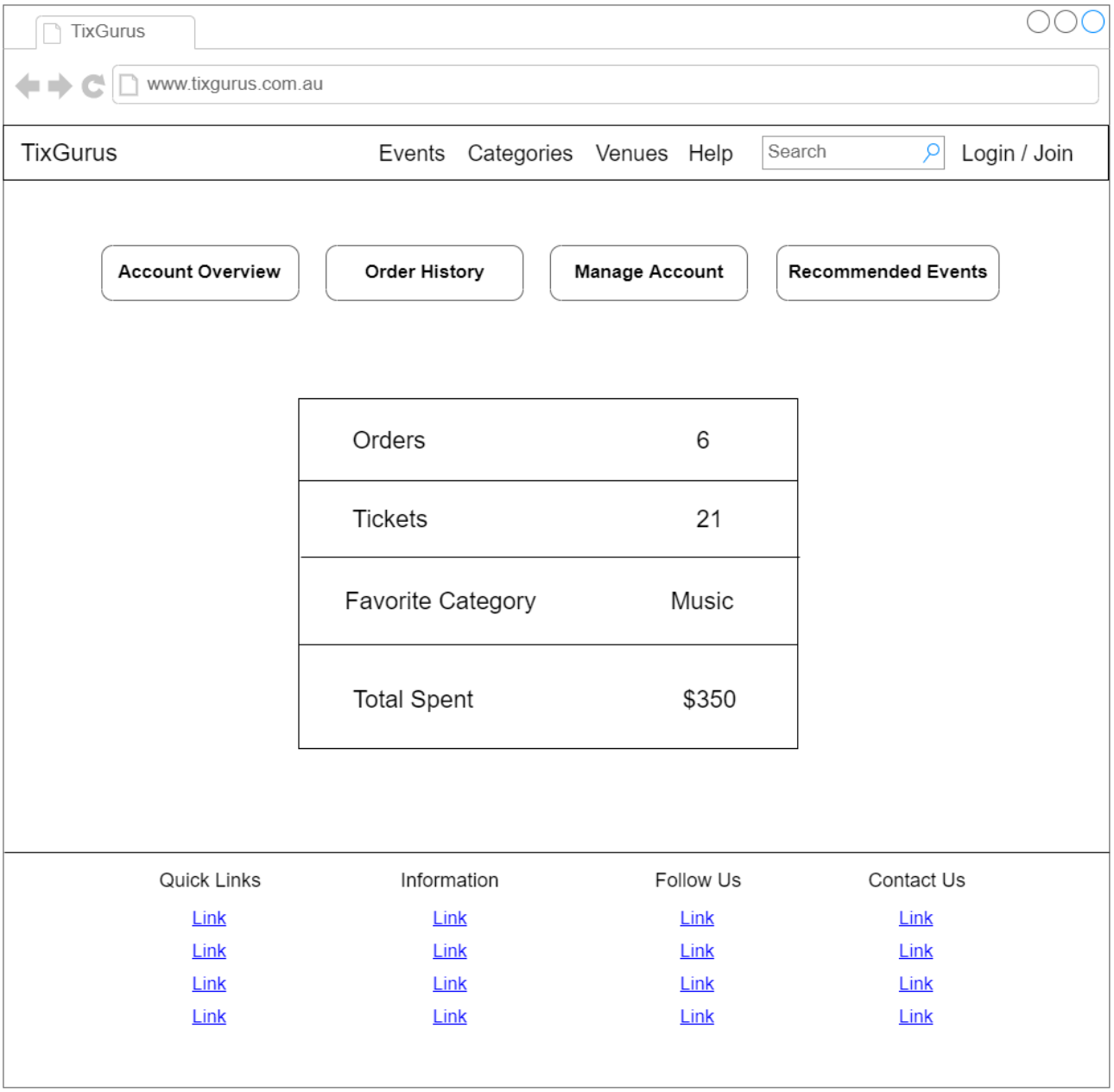
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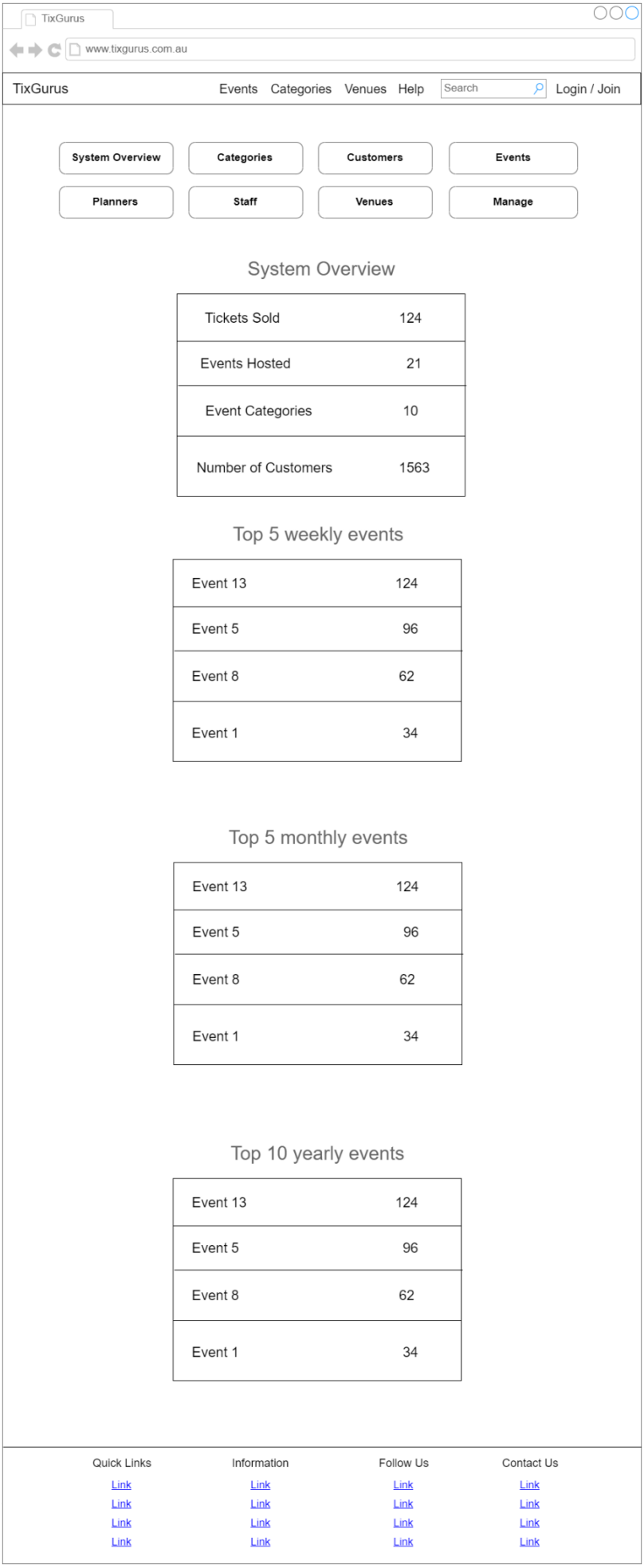
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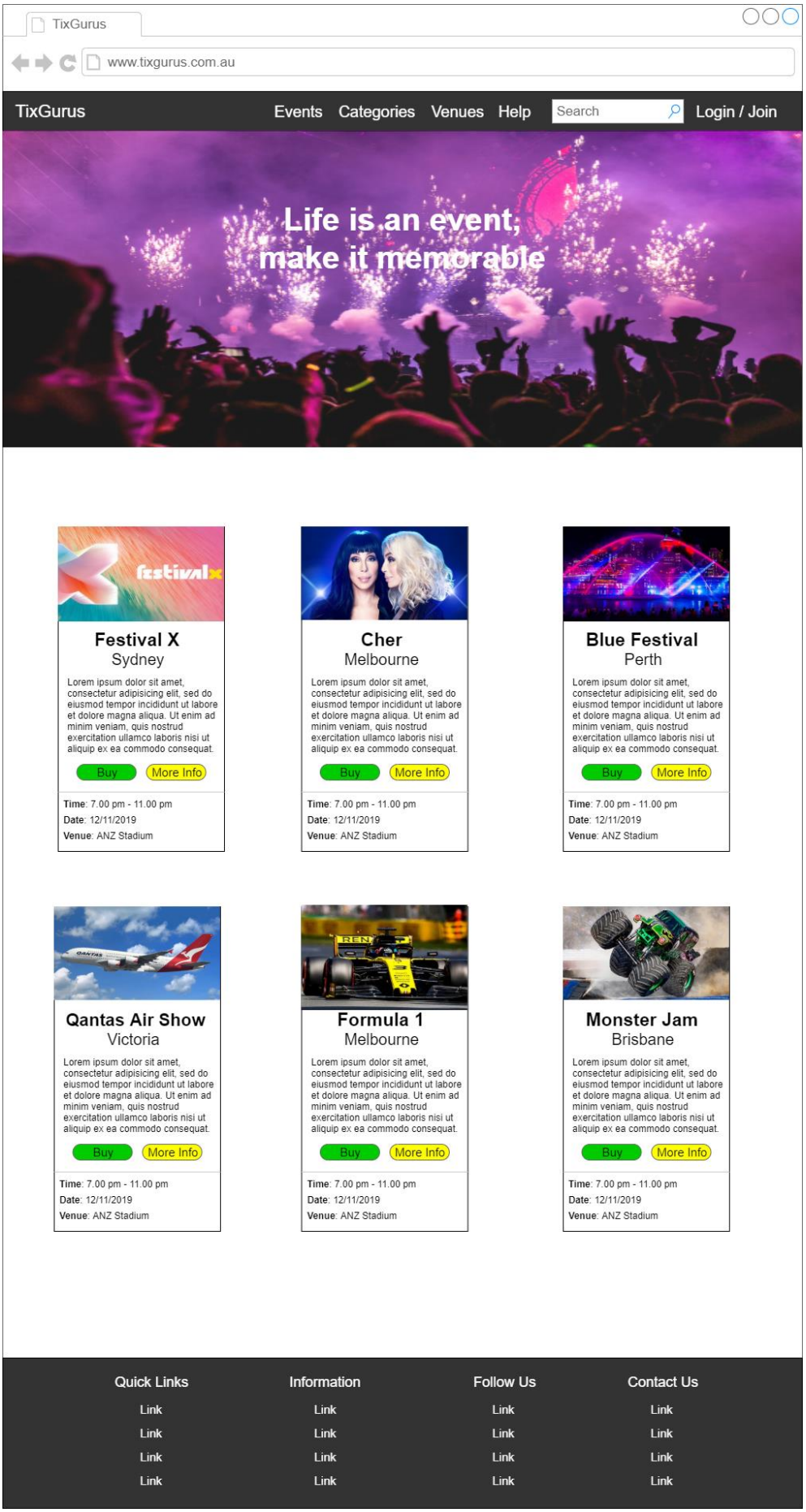
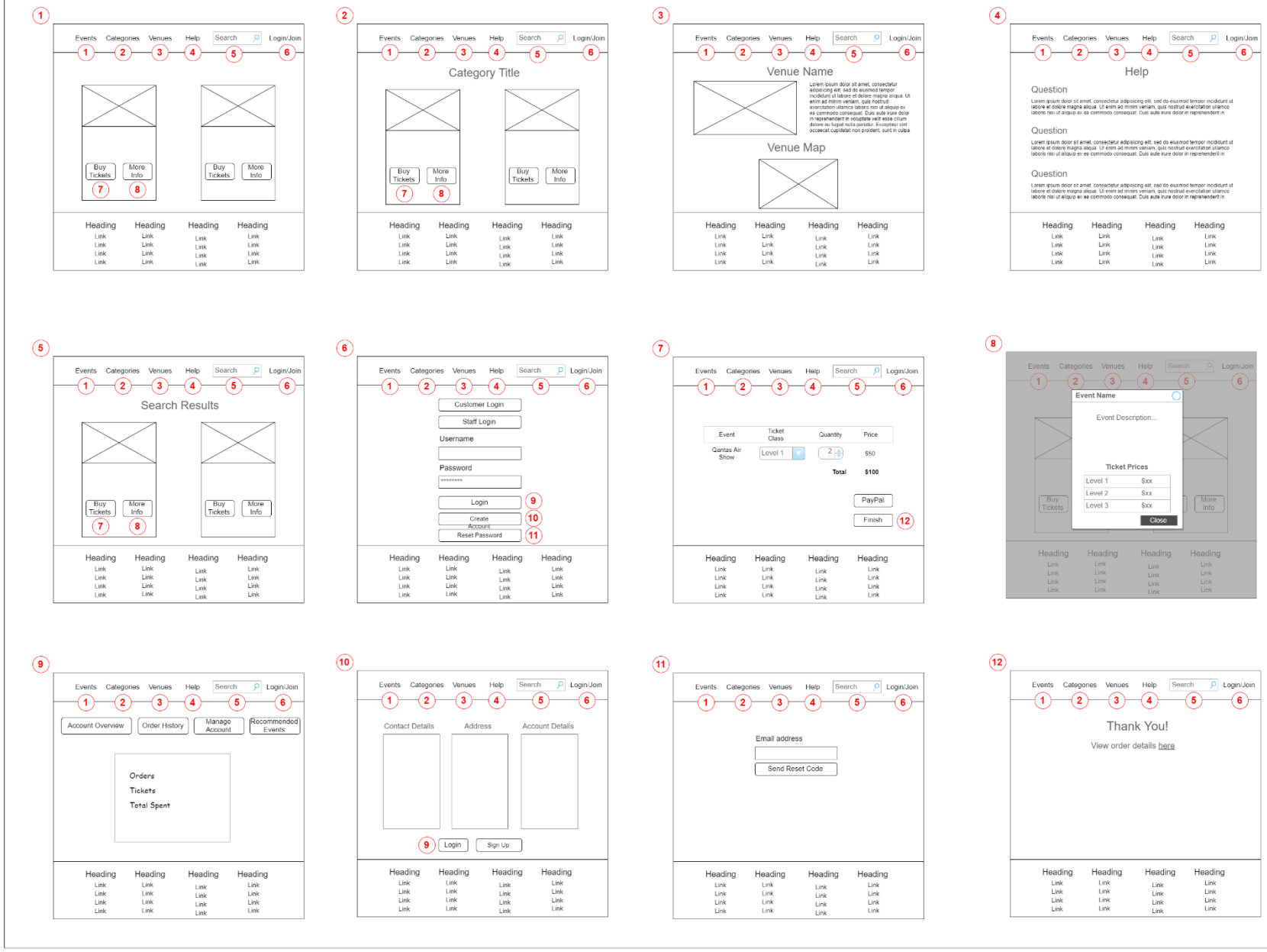
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