Ticketmaster Report

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Executive Summary

This system aims to improve Ticketmaster's functionalities and the consumer experience while using the platform. Ticketmaster is a global ticketing and event technology company that has become one of the world's leading ticketing services providers, offering tickets to live events such as concerts, sports events, and theater productions. Ticketmaster operates in more than 20 countries, and with its website available in multiple languages, it is a popular choice for eventgoers worldwide.

Over the years, Ticketmaster has developed innovative technologies such as mobile ticketing and interactive seat maps to help improve the customer experience. Though its popularity, the company has faced criticism over its fees and service charges leading to class action lawsuits. Despite the company's challenges, it remains the most dominant player in the ticketing industry and stays ahead of the competition. Ticketmaster faces several issues that negatively impact its reputation and ability to provide a fair ticket-purchasing experience for consumers. One of the most significant problems is using bots to purchase tickets. These bots purchase tickets rapidly, causing events to sell out in minutes, making it nearly impossible for human consumers to compete. These issues cause evident frustration and dissatisfaction among customers, which creates a need for Ticketmaster to address them to maintain its position as a leader in the ticketing industry.

Similarly, another big complaint from users is the current method of presale tickets for large events. In the past, due to high demand, there have been mistakes that caused tickets to be canceled, causing confusion and frustration. Implementing a new presale method for

high-demand events will provide an innovative way for users to get event tickets. This will help maintain website availability during high network traffic and improve the public opinion of Ticketmaster. Creating our system that will detect bots in Ticketmaster and improve the presale method is essential for ensuring a fair and equitable ticket purchasing experience for consumers, reducing strain on Ticketmaster's servers, and preventing legal violations.

Project Proposal

Project Background:

- Many consumers have voiced frustration about purchasing tickets for high-demand events
- Ticketmaster must improve methods for purchasing tickets
- Bots present a significant issue in purchasing tickets and pricing
- Bots cause unnecessary network traffic
- The current presale method causes confusion and high network traffic

Project Justification:

- The new system will reduce bot activity in ticket purchasing
- The reduction of bots will increase ticket availability and reduce the resale of tickets
- Increasing presale timeslots will minimize network traffic for high-demand events
- The new presale method will reduce high network traffic and increase the availability
- The system will reduce unnecessary traffic to the website during ticket sales

Problem Statement

The following are problems that our system will aim to resolve:

- High demand events cause ticket mishandiling leading to confusion and tickets being cancelled
- Resellers use bots to obtain more tickets to resell the tickets at a higher price
- Bot activity leads to increase prices
- Bots obtain many tickets leading there to be less availability to interested consumers
- Large network traffic causes the website to be slow and hard to work with
- More tickets are sold than seating that is available

Objectives

The following are the objective our system aims to provide:

- Increased website availability
- Reduction of unnecessary network traffic
- Increase ticket sales to interested consumers
- Reduction in consumer complaints and frustration
- Restrict bot activity and resale activities
- Provide a stress free ticket purchasing experience for consumers
- Imporve public opinion of Ticketmaster
- Improve presale methodologies for high demand events
- Increase consumers chance of obtaining tickets to desired events

Project Scope

The following statements outline the scope of our system:

- The system will target consumers as its primary users
- The software implementation will be applied across the Ticketmaster system
- The system will initially be implemented for only large events to increase network availability and ticket sale accuracy
- The system will aim to increase website availability
- System will reduce network traffic for large demand events
- The system will aim to reduce bot activity
- The system will increase ticket sales for interest consumers
- The system will serve as a tool to increase consumer experience while using Ticketmaster

Our system will be implemented into the Ticketmaster system to provide a better experience for consumers. When users express interest in an event for presale tickets, our system will place them randomly into general presale timeslots to section off presale, which will reduce network traffic on the day of sale. Consumers will have a better experience due to less upfront competition while purchasing tickets leading to a better experience. The system will also analyze purchases for suspicious activity and determine if a transaction matches that of bots. This includes high traffic from multiple accounts registered to the same number or email, high traffic from the same IP address, and a large number of tickets being purchased from a single transaction. The presale methodology within our system will initially only be implemented for large-demand events that Ticketmaster foresees. If the system works well and consumers respond well to the system, Ticketmaster may expand the methodology into all events.

Functionality

Event planners may generate, manage, and sell tickets to clients online thanks to the Ticketmaster Ticketing System software solution. The following are some of the system's key characteristics:

- Event Planning: The technology makes it simple for event planners to plan and manage events. This includes the event's name, date, time, location, seating arrangement, and ticket prices.
- Mobile Access: Thanks to the system's mobile compatibility, customers can buy tickets whenever possible. The system supports mobile ticketing, allowing customers to use their mobile devices as event tickets.
- Analytics and Reporting: The system offers data analytics and reporting options to assist event planners in tracking ticket sales and patron activity. This contains information on customer demographics, ticket purchasing trends, and real-time reporting on ticket sales, income, and attendance.
- Marketing and Promotion: The system has tools to assist event planners in marketing their events and boosting ticket sales. Tools for making personalized discount codes, social media promotion, email marketing, and targeted advertising are all included. Event organizers can sell tickets to clients online thanks to the system. Credit/debit cards, PayPal, and other electronic payment options are just a few ways customers can pay for their tickets. Also, the system has the ability to create tickets and email them to customers.

Ticketmaster would be a great choice for event planners who want a complete solution for managing their events and selling tickets online. Thanks to its strong features and customer assistance, the system offers event organizers and guests a seamless and effective ticketing experience.

Expected Value

The following highlights the expected value of the system:

The expected outcome that Ticketmaster should hope to achieve with the implementation of all suggested strategies is a significant decrease in the number of automated ticket purchases, as well as increased network availability. The belief that one can eradicate all botted ticket sales initially is wishful. A more realistic mindset would be for the process to be gradual but show significant signs of improvement after implementation. As we adapt, those that operate botting software will also adjust their approach, so it is important to predict their potential actions and deduce ways to counteract them.

Using bots is one of the consumers' primary complaints against Ticketmaster. Bots create a monopoly for third parties that can afford them and use them to their advantage to resell them for a much higher price. The regular individual cannot compete and is forced to pay the premiums of the third parties due to a lack of availability from Ticketmaster. The future of Ticketmaster should see a reduction in robotic purchases and an increase in those of legitimate consumers. This will result in positive customer feedback and bode well for the company’s credibility and reputation.

Constraints

The project's development includes a few constraints that may hinder the production phases of the project. The project team must carefully consider these constraints to ensure that the new and improved ticketing system meets the needs of the event organizers and customers.

● Cost: The expense of this project includes labor, taxes, equipment, materials, funding, and other resources. It is important to allocate the general expenses to meet project requirements and standards. Without proper resource allocation, the project can experience lower project quality, an increased budget, and time delays. By managing cost-effectively, we can ensure that the project is completed on time, within the budget, and with high-quality deliverables that meet the system's expectations.

● Existing Resellers: Although the new implementation will eliminate bots from the system, there is still a high probability of potential resellers who may purchase the tickets in bulk and sell them individually at a likely higher price on aftermarket ticket purchasing websites such as SeatGeek, StubHub, etc.

● User Experience: Many customers and event planners will be more familiar with the older system which will likely comprehend their adaptive understanding to the new and highly improved system. It is important to be prepared for customer-facing issues as some individuals, often older individuals, may have difficulty understanding the system's compatibility. The system must provide a user-friendly experience for event planners and customers, with easy navigation, clear instructions, and intuitive interfaces.

Project Schedule

Work Breakdown Schedule:

Task Name	Predecessor	Effort(in days)	Estimated Start Date	Estimated End Date	Assigned Resource
1.0 Planning					
1.1 System Request		7	2/16/2023	2/23/2023	Amon, Utkarsh, Janice, Yuna, Ally, Sreshta, Susmitha, Majdi, Dante, Brandon
1.2 Feasibility Analysis	1.1	7	2/16/2023	2/23/2023	Brandon
1.3 System Approval	1.2	2	2/23/2023	2/25/2023	Amon, Utkarsh, Janice, Yuna, Ally, Sreshta, Susmitha, Majdi, Dante, Brandon
1.3.1 Project Functionality and Scope	1.3	12	3/9/2023	3/21/2023	Amon, Dante
1.4 Project Schedule- Work Flow	1.3.1	12	3/9/2023	3/21/2023	Utkarsh, Janice
1.5 Project Proposal	1.3,1.3.1,1.4	12	3/9/2023	3/21/2023	Amon, Utkarsh, Janice, Yuna, Ally, Sreshta, Susmitha, Majdi, Dante, Brandon
2.0 Analysis					
2.1 Analysis Strategy	1.5	12	3/9/2023	3/21/2023	Amon, Utkarsh, Janice, Yuna, Ally, Sreshta, Susmitha, Majdi, Dante, Brandon
2.2 Requirements	1.5	12	3/9/2023	3/21/2023	Shresta, Majdi
2.3 Process Model					
2.3.1 Use case Diagram and description	2.2	12	3/9/2023	3/21/2023	Yuna, Ally
2.3.2 Class Diagram	2.3	12	3/9/2023	3/21/2023	Yuna, Ally
2.4 Object Behavior Model					
2.4.1 Sequence Diagram	2.2, 2.3	12	3/9/2023	3/21/2023	Dante, Brandon
2.5 System Proposal	2.1-2.4	12	3/9/2023	3/21/2023	Amon, Utkarsh, Janice, Yuna, Ally, Sreshta, Susmitha, Majdi, Dante, Brandon
3.0 Design					
3.1 Design Strategy	2.5	5	3/30/2023	4/4/2023	Yuna, Janice, Ally
3.2 Design Architecture	2.5,3.1	5	3/30/2023	4/4/2023	Utkarsh, sreshta, Majdi
3.3 Interface Design	2.5,3.1	5	3/30/2023	4/4/2023	Amon, dante, brandon
3.4 Develop Database	3.2	5	3/30/2023	4/4/2023	Amon, Utkarsh, Janice, Yuna, Ally, Sreshta, Susmitha, Majdi, Dante, Brandon
3.5 software Design	3.2,3.3,3.4	5	3/30/2023	4/4/2023	Janice, Ally
3.5.1 Controls	3.2,3.3,3.4,3.5	5	3/30/2023	4/4/2023	yuna, sreshta, susmitha
3.5.2 Test Cases	3.2,3.3,3.4,3.5,3.5.1	5	3/30/2023	4/4/2023	Amon, dante, brandon
4.0 Implementation					
4.1 Build System	3.1-3.5				
4.1.1 Test system	3.5, 3.5.1, 3.5.2				
4.2 Install System	4.1				
4.2.1 Implement Tech into System	4.2				
4.2.2 Transition Plans	4.2.1				
4.2.3 Train Users	4.2, 4.2.1, 4.2.2				
4.3 Support the Product (Maintenance)	4.1- 4.2.3				
4.3.1 Maintain support of the product	4.3				

Requirements

Functional and Non-Functional Requirements:

Ticketmaster's system has several functional and non-functional requirements. For applicable requirements, we have to consider ticket delivery because the system should be able to give the tickets to the customers by email or other ways. But, the ticket has to get to the customer in some way. Ticket sales are also significant because the system should let users get their tickets for specific events.

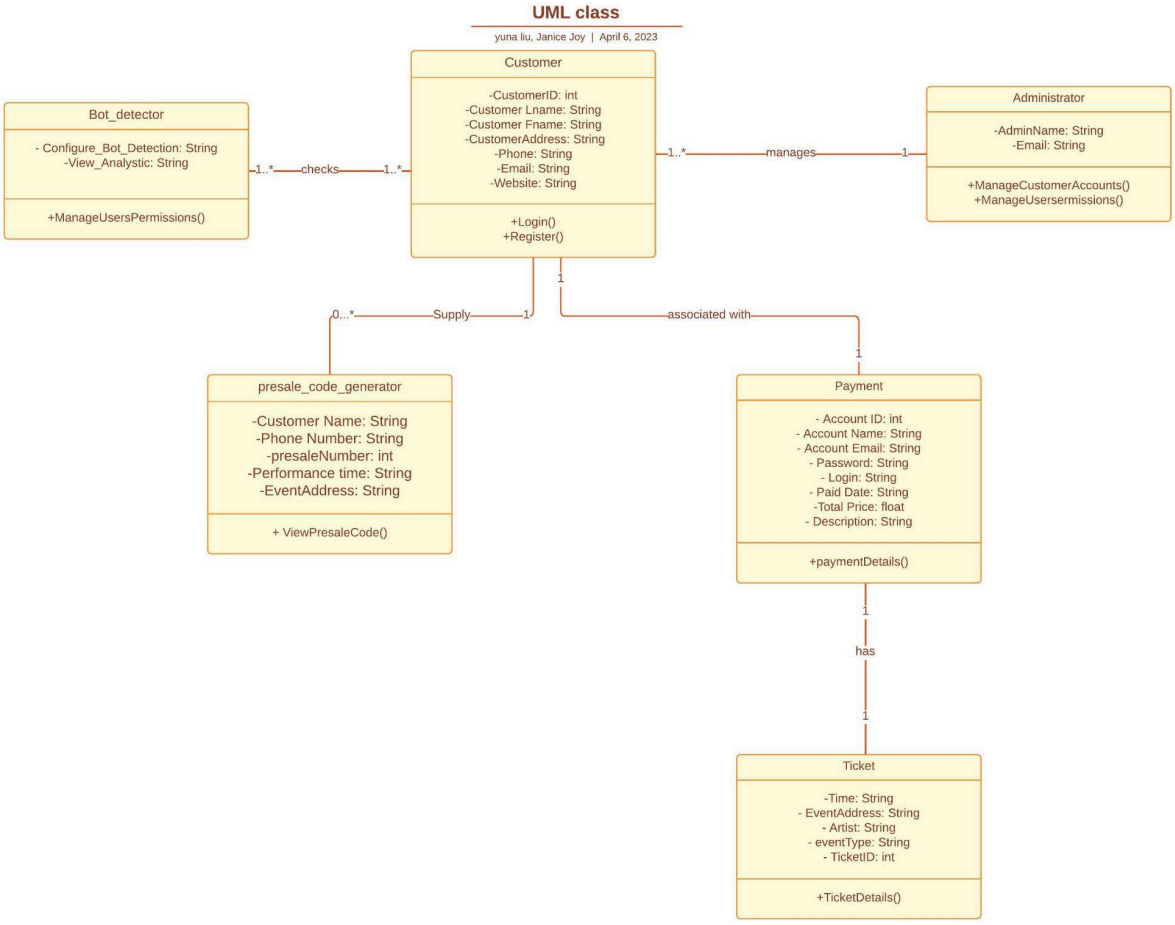
- The design should have that function available to make it easier for users. The seat selection requirement is essential because it can help users select their seats, decrease overbooking, and make it efficient for the customer.
- The payment process must also be efficient for users to purchase their tickets online and pay after adding them to the cart. The payment should be able to go through, and this way, the ticket will go to the user almost immediately.
- After the price, there is an option for refunds and cancellations, and this comes in handy when a customer wants to cancel their ticket or get it refunded. Although there are a lot of functional requirements for Ticketmaster, there are also non-functional requirements, such as security; by this, the system will have to be able to protect the data the customer has inserted, along with their financial information.
- Another non-functional requirement is availability because the system has to be able to communicate with customers from different time zones and be up to date with their data.

- The system should also be reliable for all the transactions that go through and must be processed correctly. Ticketmaster is also easy to use, which brings in users and gets the job done.
- Since Ticketmaster is a huge company, it has to be able to contain customer information and handle all the sales that occur at a time.
- Ticketmaster can now offer virtual events in addition to real events thanks to integration with virtual event platforms.
- Users can be given parking passes for events by incorperating a parking services section on the app.

Functional Requirements	**Non-Functional Requirements**
Ticket delivery	System security
Ticket sales	System availability
Upfront payment process	Consistency
Refund and cancellation options	Looks visually appealing
Seating options	Maintainability
Bot detection	User Friendly

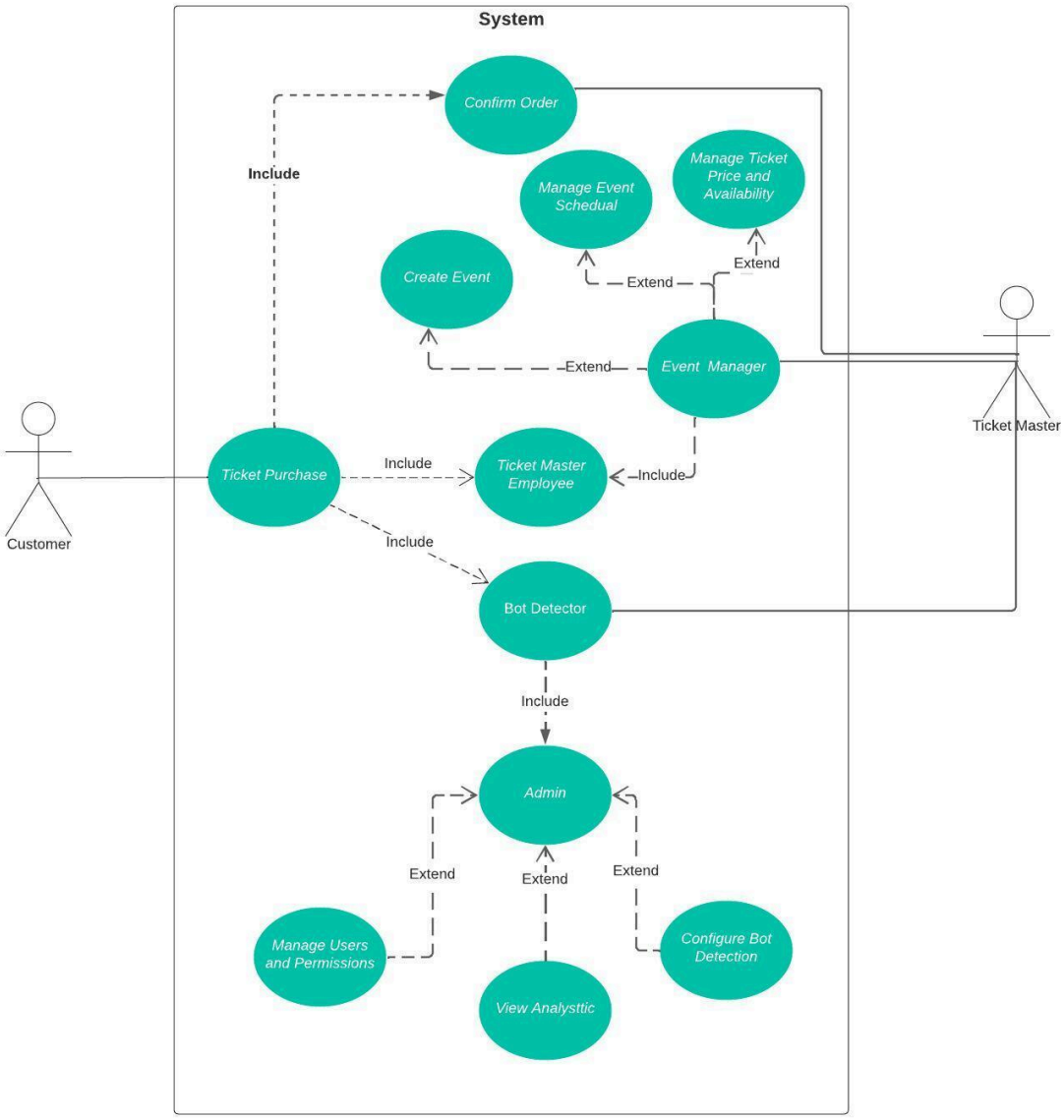
Structural Models

Class Diagram:



Behavioral Models

Ticketmaster Use case Diagram:



Use Case Descriptions

Use Case 1: Create Event

Use case name: Create Event	ID: 1	Importance level: high
Primary Actor: Event Manager		Use case type: Internal
Stakeholders and interest: customer, Ticketmaster		
Brief Description: The event manager creates a new event in the Ticketmaster system		
Triggers: Artist/Event conception		
Normal Flow of Events: 1. Event details are entered into the system 2. The manager sets the availability and prices for the event 3. The manager sets the details for the event 4. The event details are entered into the Ticketmaster database		
SubFlows: None		
Alternate Flows: 1. Incorrect value type a. Enter correct values		

Use Case 2: Manage Event Schedule

Use case name: Manage Event Schedule	ID: 2	Importance level: Medium
Primary Actor: Manager		Use case type: internal
Stakeholders and interest: customer, Ticketmaster		
Brief Description: The event manager edits event details		
Triggers: Event detail change		
Normal Flow of Events: 1. The event manager edits an existing event in the Ticketmaster system 2. The Ticketmaster database is updated 3. The Ticketmaster website is updated to show the change(s) 4. Users that purchased tickets with previous details are updated		
SubFlows: None		

Use Case 3: Login

Use case name: Login	ID: 3	Importance level: high
Primary Actor: User		Use case type: internal
Stakeholders and interest: customer		
Brief Description: This describes the action needed to complete a purchase as a registered user.		
Triggers: Item purchase		
Normal Flow of Events: 1. User is prompted to check out as a guest or registered customer 2. User clicks login as a registered customer 3. User inputs username and password 4. User logs in to complete next steps		
SubFlows: None		
Alternate Flows: 1. Username and or password fail a. Reenter login information 2. Forgot username/password a. Login information recovery		

Use Case 4: Ticket Purchase

Use case name: Ticket purchase	ID: 4	Importance level: high
Primary Actor: Customer		Use case type: external
Stakeholders and interest: customer		
Brief Description: User proceeds to checkout		
Triggers: checkout		
Normal Flow of Events: 1. A user adds item they wish to purchase into cart 2. User clicks the checkout button 3. Ticketmaster bot detection verifies the validity of the purchase 4. The user enters payment information 5. User Confirms purchase 6. Ticketmaster sends the user a confirmation email		
SubFlows: None		
Alternate Flows: 1. Bot detector is alerted a. User must verify details before continuing ticket purchase 2. Payment information is incorrect a. Re-enter card information or try another payment method		

Use Case 5: Bot Detection

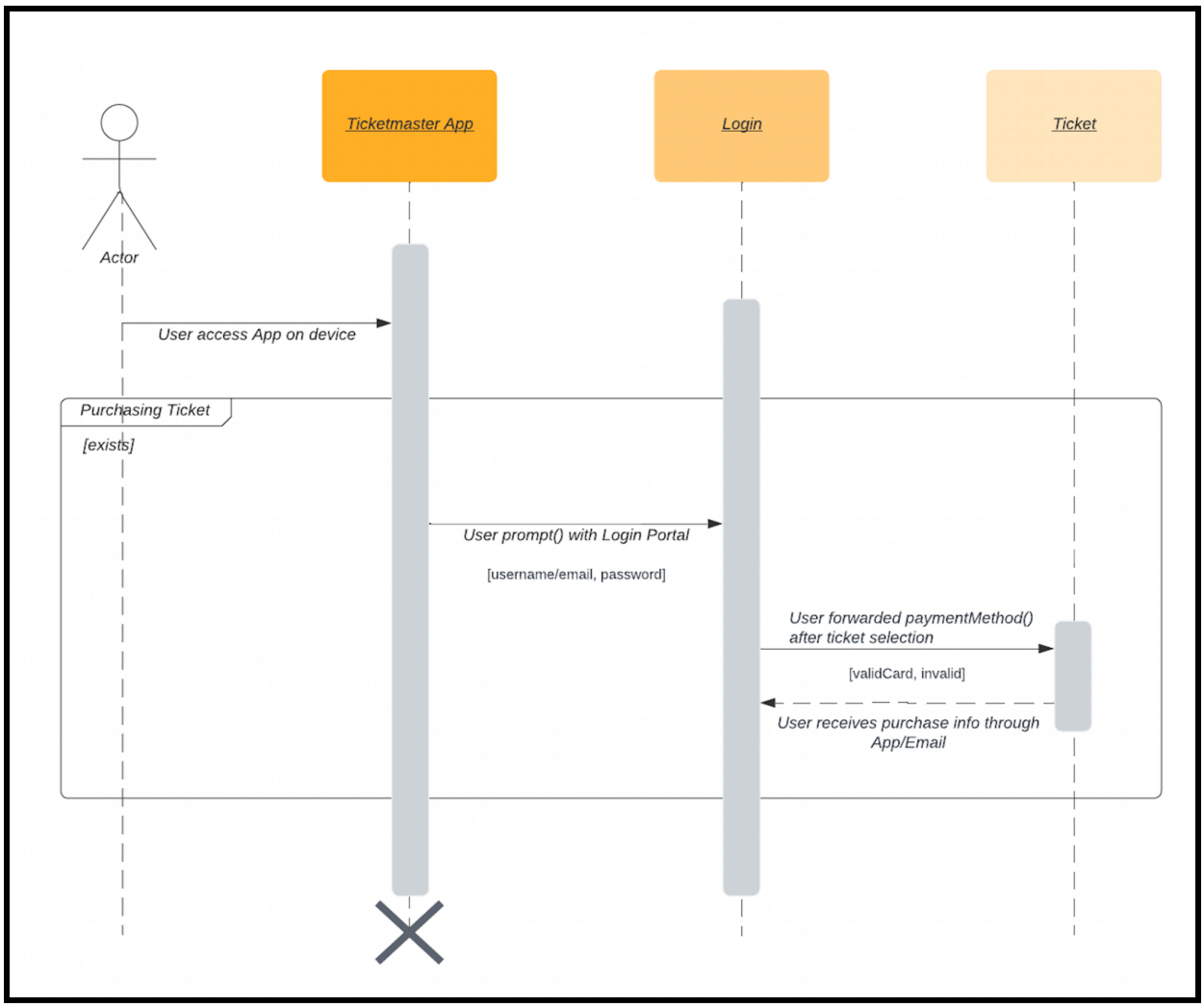
Use case name: Bot Detection	ID: 5	Importance level: high
Primary Actor: Ticketmaster		Use case type: internal
Stakeholders and interest: customer		
Brief Description: The Ticketmaster system analyzes a purchase for bot activity		
Triggers: Suspicious purchase		
Normal Flow of Events: 1. User proceeds to checkout 2. Bot triggers, such as the large quantity of ticket purchases are set off 3. Ticketmaster system flags the purchase for review 4. User is prompted to verify their account 5. User is prompted to make changes to purchase to continue		
SubFlows: None		

Use Case 6: View Analytics

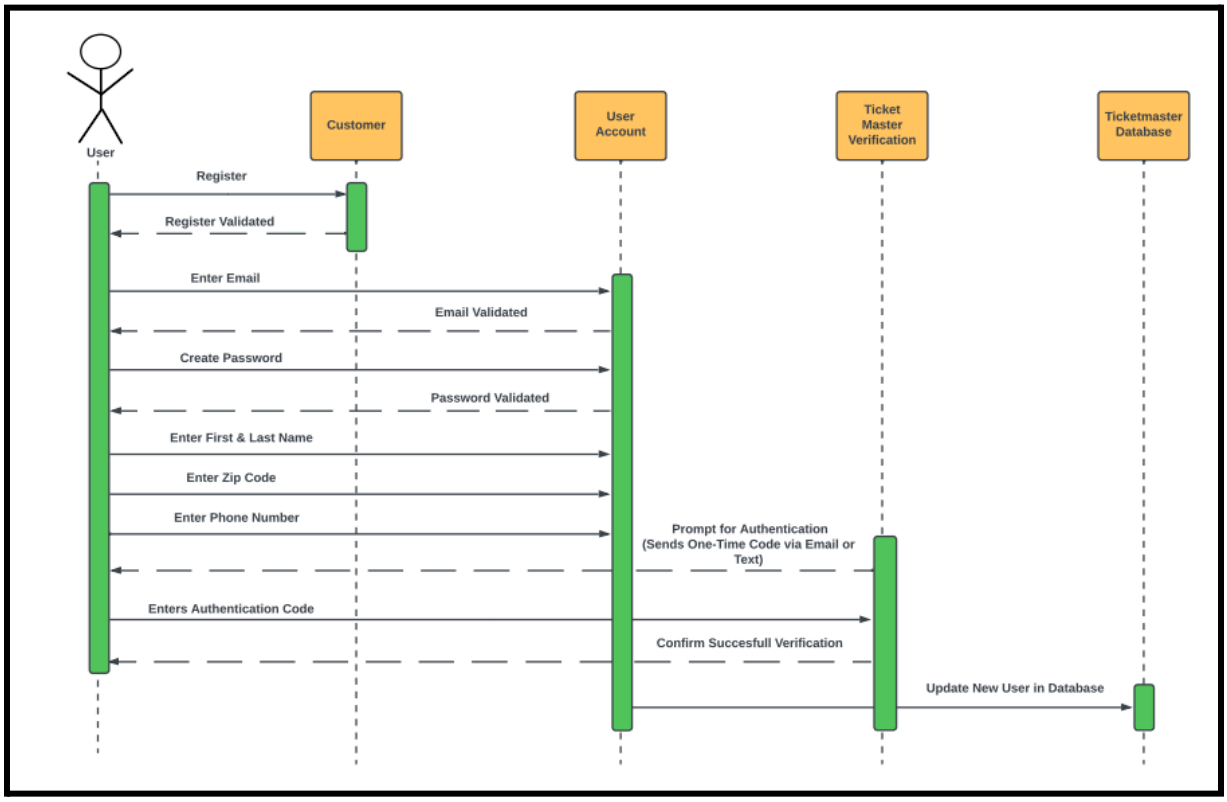
Use case name: View Analytics	ID: 6	Importance level: high
Primary Actor: Event manager, Ticketmaster		Use case type: internal
Stakeholders and interest: Event manager, Ticketmaster, Users		
Brief Description: People interested view analytics data in the Ticketmaster system		
Triggers: Event completion		
Normal Flow of Events: 1. Event manager requests to view analytics data from Ticketmaster 2. Ticketmaster retrieves data from the database 3. Event manager analyzes event data such as tickets sold 4. Ticketmaster is given a copy of analysis 5. Data is used to support business decisions		
SubFlows: None		

Behavioral Models

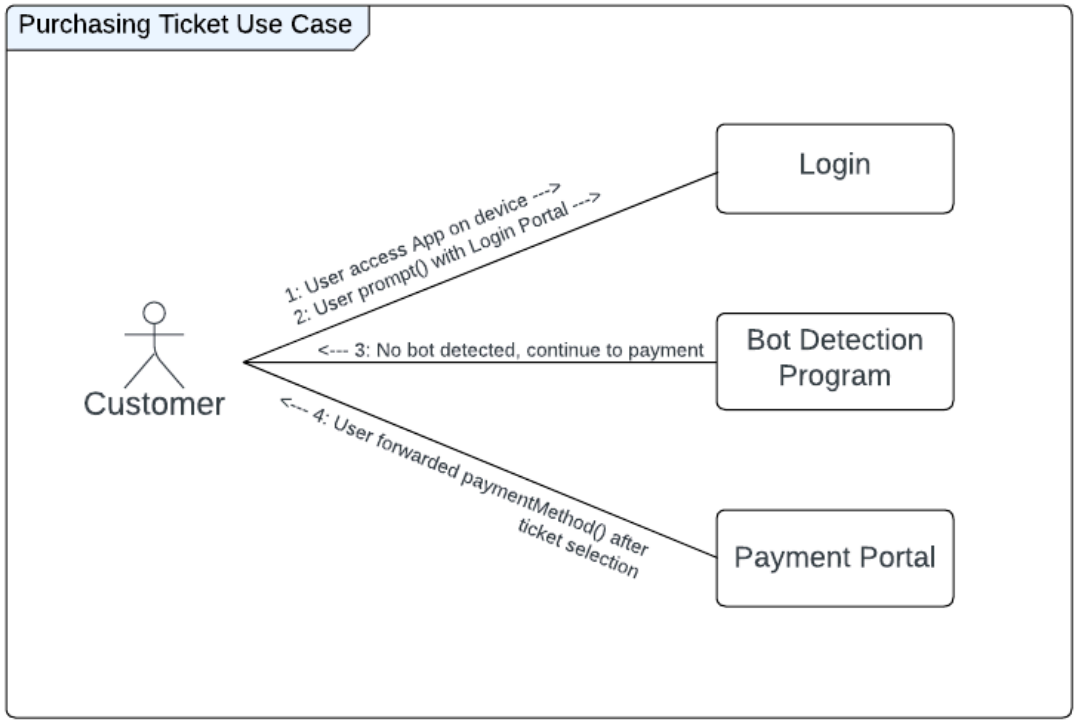
1) Sequence diagram for purchasing ticket:



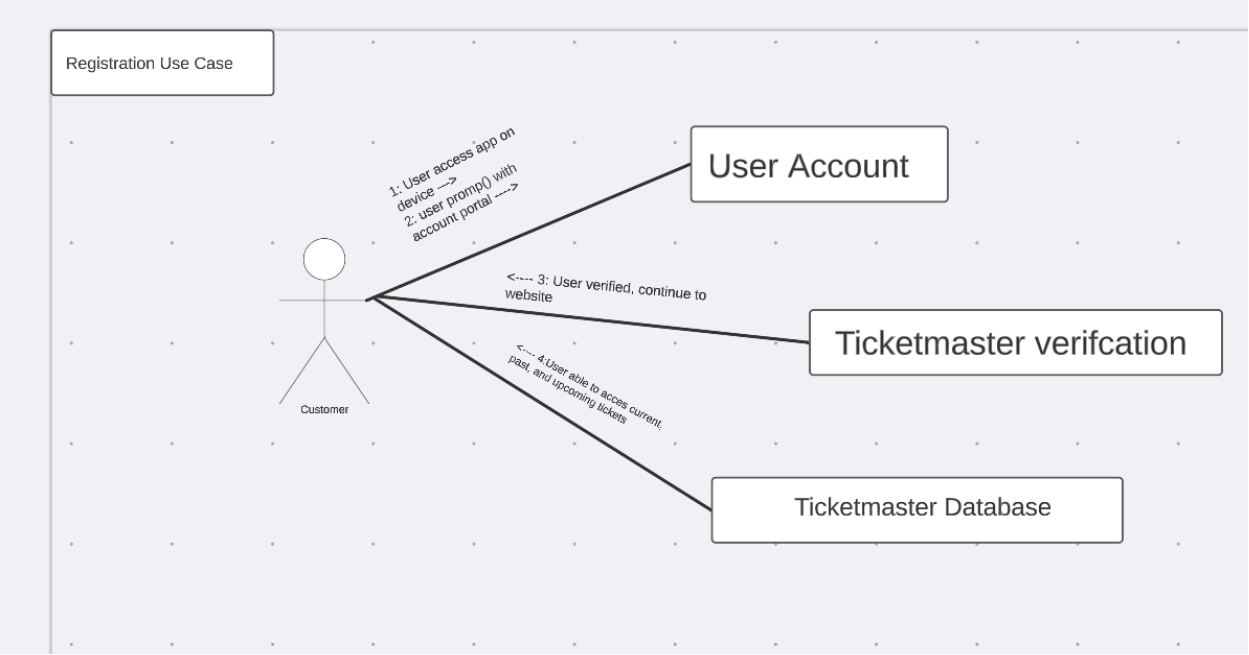
Sequence diagram for the registration process:



2) Communication diagram for purchasing ticket use case:



Communication diagram for the registration process:



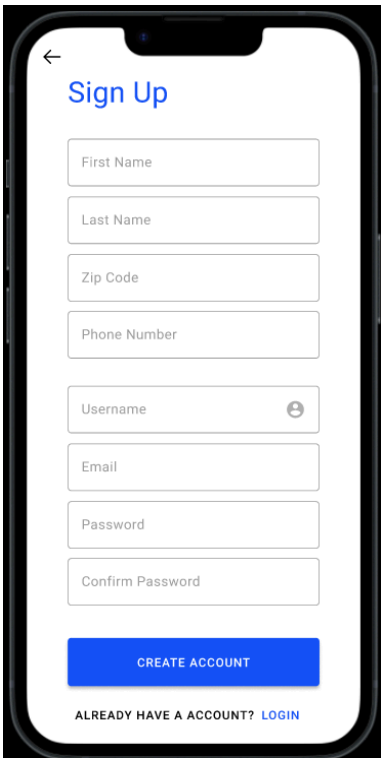
Design Document

User Interface Design

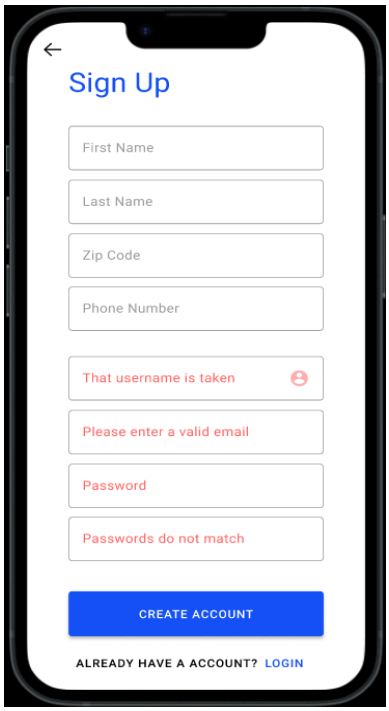
User Interface for Ticket Master Actions:

Sign-Up Process:

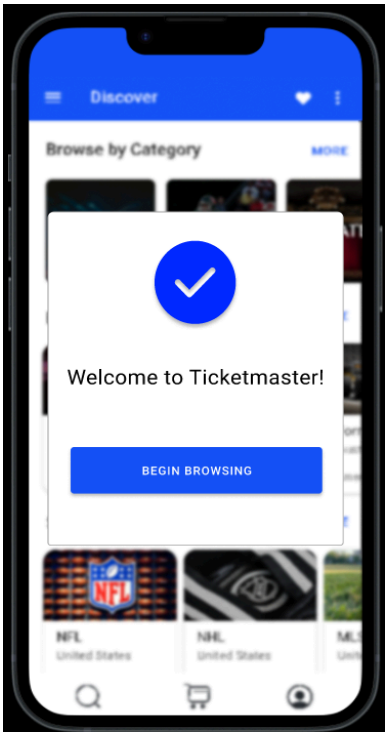
1. User opens up app and presses create an account button



2. User is prompted with the Sign up page



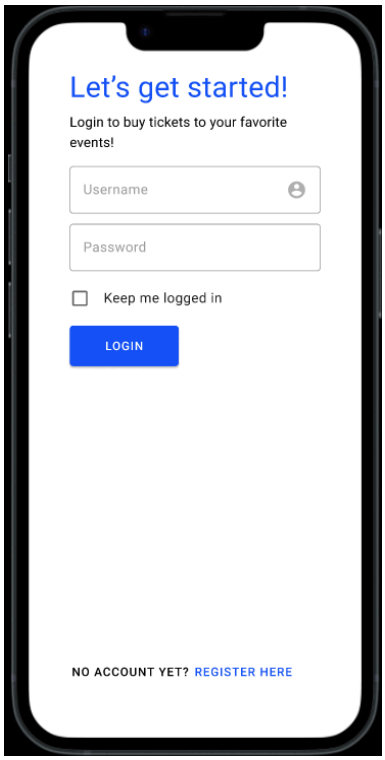
3. User types in information and corrects themselves if any mistakes show up in red and proceeds.



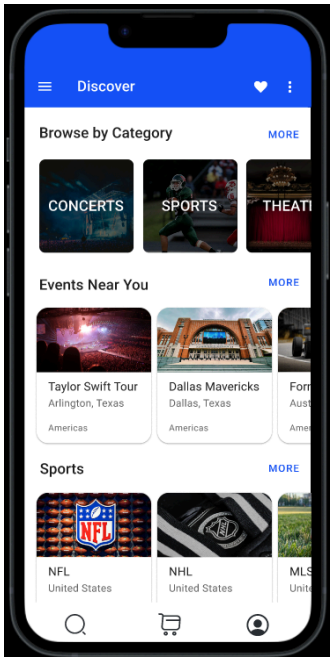
4. User is logged onto app.

Successful Login:

1. User has an existing account so they log in

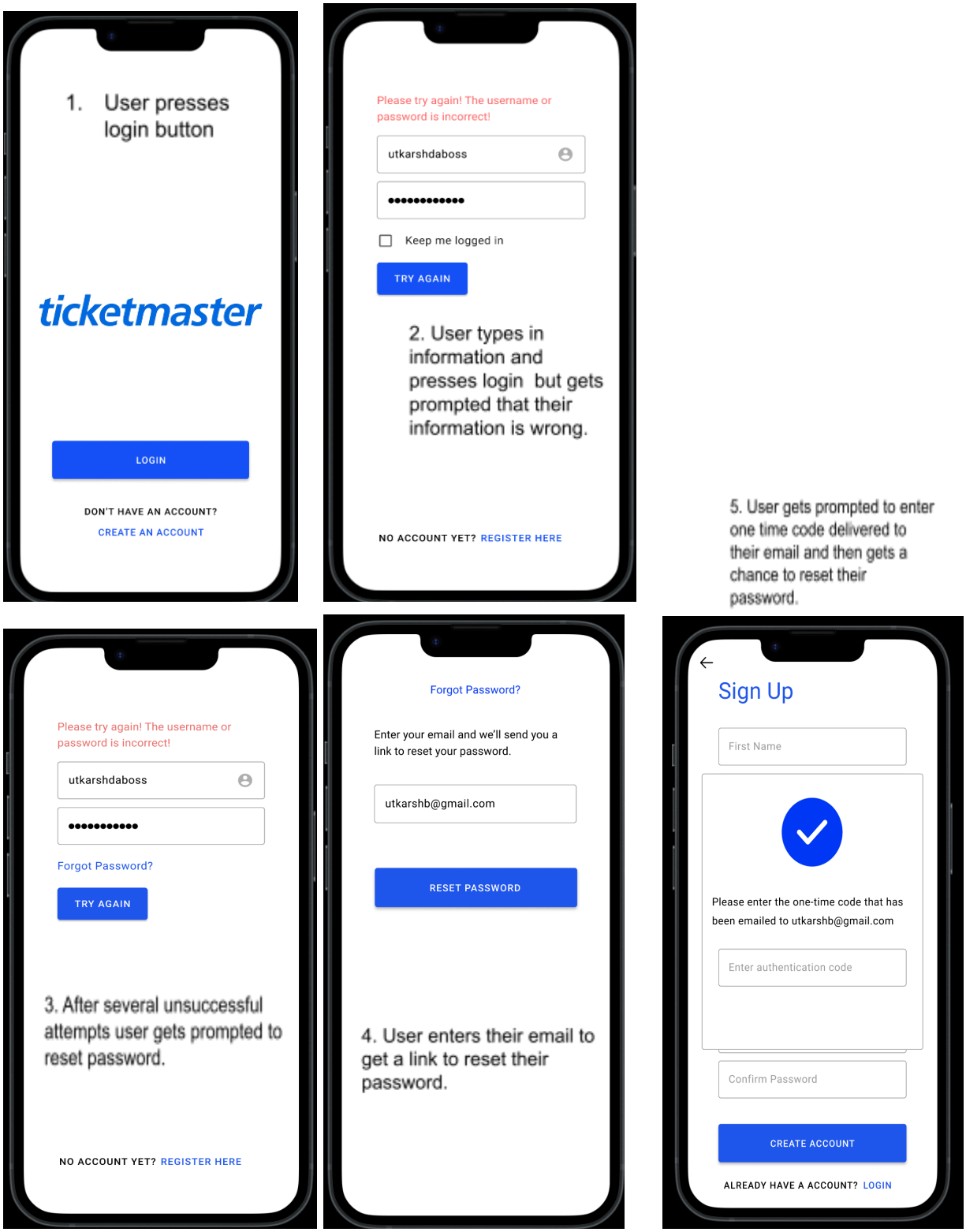


2. User types in their login information.

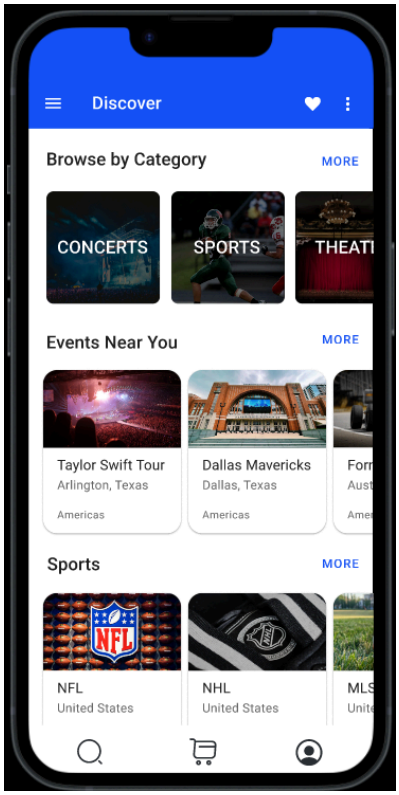


3. User is welcomed to the app.

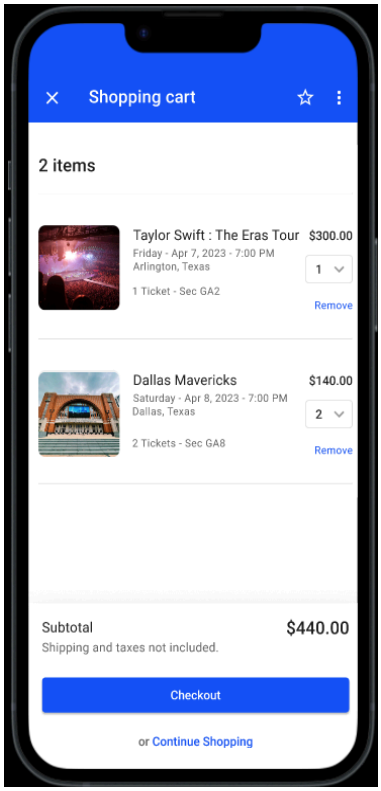
Unsuccessful Login:



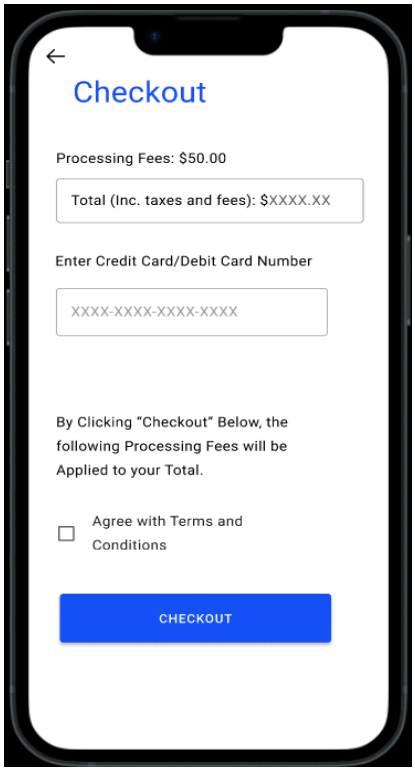
Successful Purchase:



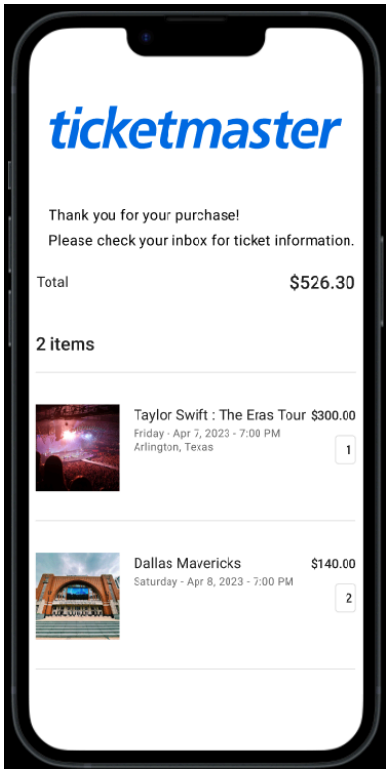
1. User browses app and gets tickets.



2. User proceeds to cart

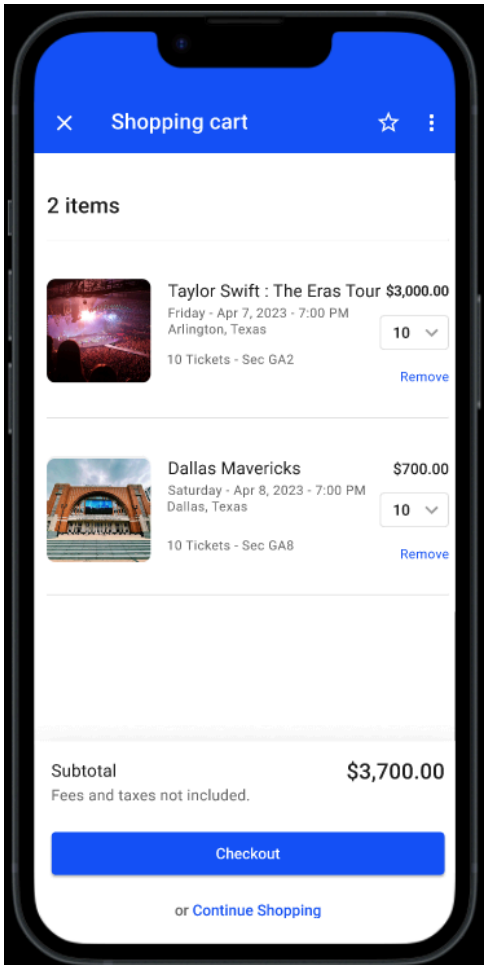


3. User enters payment information and checks out

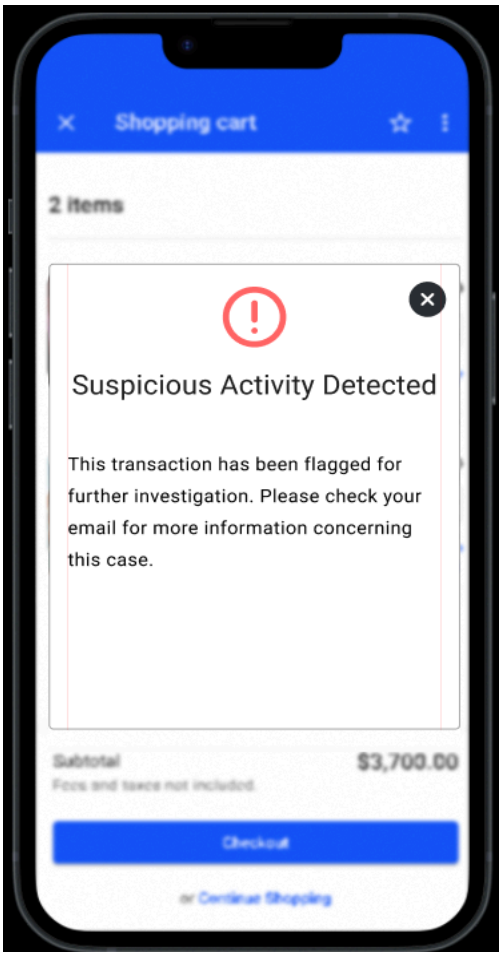


4. User successfully buys tickets and gets message saying to check their inbox for ticket information

Suspicious Activity:



1. "Bot" normally proceeds to checkout



2. App detects user using a "bot". Halts them and informs them to check inbox for further steps.

Meeting Minutes

Meeting Number	Meeting Date	Start Time	End Time	Members Present	Objectives Discussed
1	Thursday, February 16, 2023	7:00 P.M.	7:53 P.M.	Ally Hubbard, Janice Joy, Susmitha Gaikwad, Sreshta Vanaparthy, Yun Liu, Brandon Thai, Dante Gutierrez, Amon Kissi, Majdi Islam, Utkarsh Buddharaju	What company we were going to chose, The features we would include, Split up milestone requirements
2	Thursday, February 23, 2023	7:00 P.M.	7:10 P.M.	Ally Hubbard, Janice Joy, Susmitha Gaikwad, Sreshta Vanaparthy, Yun Liu, Brandon Thai, Dante Gutierrez, Amon Kissi, Majdi Islam, Utkarsh Buddharaju	Reviewed milestone and submitted work
3	Thursday, March 9, 2023	7:00 P.M.	7:20 P.M.	Ally Hubbard, Janice Joy, Susmitha Gaikwad, Sreshta Vanaparthy, Yun Liu, Brandon Thai, Dante Gutierrez, Amon Kissi, Majdi Islam, Utkarsh Buddharaju	Set internal deadline for second milestone, split up work, and discussed criteria for completion
4	Tuesday, March 21, 2023	6:00 P.M.	6:33 P.M.	Ally Hubbard, Janice Joy, Susmitha	Reviewed milestone and noted questions

				Gaikwad, Sreshta Vanaparthy, Yun Liu, Brandon Thai, Dante Gutierrez, Amon Kissi, Majdi Islam, Utkarsh Buddharaju	to ask instructor then submitted the file
5	Thursday, March 30, 2023	7:00 P.M.	7:26 P.M.	Ally Hubbard, Janice Joy, Susmitha Gaikwad, Sreshta Vanaparthy, Yun Liu, Brandon Thai, Dante Gutierrez, Amon Kissi, Majdi Islam, Utkarsh Buddharaju	Outlined requirements for milestone 3, split up work, set internal deadline for submission
6	Thursday, April 13, 2023	7:00 P.M.	7:35 P.M.	Ally Hubbard, Janice Joy, Susmitha Gaikwad, Sreshta Vanaparthy, Yun Liu, Brandon Thai, Dante Gutierrez, Amon Kissi, Majdi Islam, Utkarsh Buddharaju	Created presentation outline, figured out who is presenting what, made proposal document, set internal deadline
7	Tuesday, April 18, 2023	5:00 P.M.	6:03 P.M.	Ally Hubbard, Janice Joy, Susmitha Gaikwad, Sreshta Vanaparthy, Yun Liu, Brandon Thai, Dante Gutierrez, Amon Kissi, Majdi Islam, Utkarsh Buddharaju	Recorded project presentation, finalized project report, turned in deliverables.