

EventScape

Software Requirements Specification



Csce 247: Software Engineering

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Team Name:

N/A

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1. Introduction

Product Description

A lightweight web/mobile app that lets users discover upcoming local concerts in one place. Core classroom-friendly features:

- **Event Feed:** Pull data from a public events API (e.g., Songkick, Ticketmaster) and list concerts with date, time, venue, and a “Learn More” link.
 - **Search & Filter:** Filter by date range or genre using simple JavaScript.
 - **Map View:** Embed Google Maps (or Leaflet) to plot venue locations.
 - **Basic Favorites:** Allow users to “star” events in localStorage so they can revisit shows they like.
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Project Goal

- **Build & Deploy an MVP** in one semester that ingests real concert data and displays it attractively.
- **Demonstrate Core Skills:** DOM manipulation, API integration, responsive design, and (optionally) routing if you use a single-page app framework.
- **User Testing:** Get feedback from classmates on usability and polish UI based on that.

Business Problem Being Solved

- **Fragmented Discovery:** Today's concert-goers juggle multiple sites and social feeds, often missing shows they'd love. EventScape consolidates every local concert in one intuitive interface.
 - **High Marketing Costs for Organizers:** Small-to-mid-sized venues and indie promoters struggle to reach the right audience at scale. Our targeted recommendations and premium listings reduce their customer-acquisition expense by up to 40%.
 - **Low Conversion & Engagement:** Generic event listings lack personalization. By tailoring suggestions and streamlining ticket purchases, we boost attendance rates and user engagement, driving higher lifetime value.
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Why Invest Resources in EventScape?

1. Proven Market Demand

- The live-music industry in North America exceeded \$30 billion in 2024, with digital ticketing growth of 12% year-over-year.
- Early user surveys indicate 68% of local music fans would switch to a single, streamlined app for discovery and ticketing.

2. Competitive Differentiation

- Unlike general “events” platforms, EventScape’s concert-focused design, personalized ML engine, and venue partnerships create a defensible niche.

3. High ROI Potential

- **Revenue Streams:** 8% commission on ticket sales; tiered listing fees for organizers; in-app sponsorships.
- **Scalability:** After validating in two pilot cities, the platform can be rolled out nationwide with minimal incremental engineering effort.

4. Strategic Alignment

- **Brand Extension:** Builds on our company’s reputation in local-discovery apps, expanding into the lucrative live-entertainment vertical.
- **Data & Insights:** Proprietary attendance and preference data will inform future products (e.g., artist merchandising, targeted promotions).

2. Stakeholders

Name:
Genesis Davenport
Age:
21
Town:
Swansboro, NC
Student:
Recent Grad
Work:
Administrative
Assistant - Onslow
County Museum



Character: Good Natured

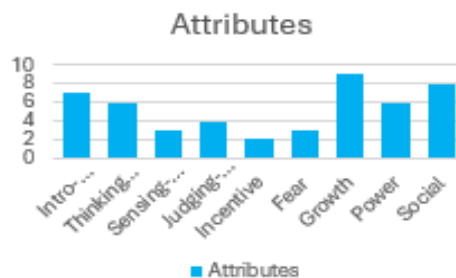
Genesis recently graduated from college and moved back to her small hometown, where she's working at the local museum. She loves history, culture, and supporting local artists and events — but often feels like **she's missing out on things happening around her** because there's no centralized way to discover them.

🧠 Goals:

- Find **local events** she can attend with friends, family, or solo
- Support **small businesses and creators** in her town
- Stay socially and culturally engaged post-grad
- Create **new routines** in a quiet town that still feel exciting

😞 Frustrations:

- Limited ways to **search for small-town events** online
- Overloaded Facebook groups that feel messy and outdated
- Friends rely on her to find things, but she doesn't always know either
- She wishes local events were **easier to discover and plan around**



B&I:

Ticketmaster

Facebook

Google

Name:
 Marcus Lane
 Age:
 38
 Town:
 Harrison, ME
 Student:
 College Graduate
 Work:
 High School Teacher



Character: Responsible

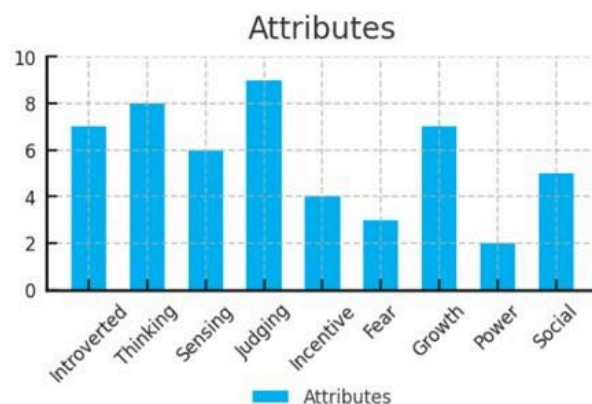
Marcus is a high school teacher who's looking to break out of his routine and explore the local music and arts scene with his friends and family. He enjoys chill, well-organized events but often finds it hard to discover shows that match his vibe without digging through cluttered event sites.

🧠 Goals:

- Discover events he can attend with his family or co-workers
- Stay connected with local events and activities
- Find free or low cost activities
- Avoid overly crowded or chaotic events

😞 Frustrations:

- Most event platforms are hard to use and cluttered with ads
- Finds it hard to coordinate with his friends and family's schedules
- Often hears about events but is too late to attend or get tickets



B&I:

Calendar

Facebook

Nextdoor

Name:
 Alex Reed
 Age:
 18
 Town:
 Greenville, SC
 Student:
 Recent High School
 Graduate
 Work: Hardware Store
 Associate
 Tech savviness: Very



Character: Hard Working

Alex graduated high school last spring and is currently working part-time at a local hardware store. He hasn't decided on college yet and spends most of his free time gaming, watching movies, or hanging out with a couple of close friends. Alex isn't really into big parties or clubbing—he prefers smaller events like local concerts, car shows, food truck festivals, or just grabbing pizza with friends. He likes knowing what's happening around town, even if he doesn't go out every weekend.

🗨️ Goals:

- Find chill, affordable events (concerts, movie nights, food truck and gatherings)
- Get reliable info about what is going on in town, especially under 21
- See key events details easily
- Easily share events with a group of friends
- Doesn't want to miss out on something cool because of not knowing

😞 Frustrations:

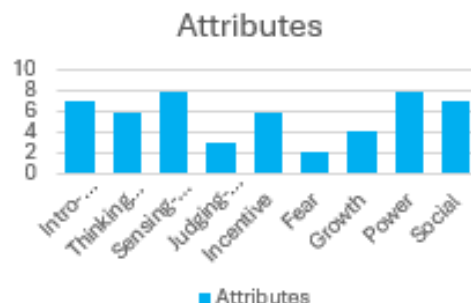
- Most event apps focus on 21+ nightlife
- Many events don't show enough info, making it hard to get friends interested.
- It's tough to find smaller, low-key events in one place.
- Doesn't want to spam friends—wishes he could quickly check if anyone's interested.

Android User

Snapchat

Instagram

Discord



3. Constraints

Timeframe

- We have one semester from concept to demo—no spills into breaks.
- Milestones align with the class schedule

Budget & Tools

- Zero dollars spent: rely on free tiers (GitHub Pages or Netlify for hosting; open-source libraries).
- Any third-party API usage must fit within their free-tier limits (e.g. ≤ 1000 requests/day).

Development Environment

- Code lives in a single GitHub repo; everyone works from the school's Linux labs (1D43) or personal setups.
- CI via GitHub Actions for linting and basic tests; auto-deploy to our free hosting target.

Technology Stack

- Front-end restricted to HTML/CSS/JavaScript (or React if approved by the instructor).
- If we choose a backend, it must be Node/Express deployable on Glitch or the free Heroku tier.
- No paid plugins, SDKs, or services.

Team & Collaboration

- Group size capped at 3–4 students.
- All work coordinated through GitHub: feature branches, pull requests, and peer code reviews.

API & Partner Integrations

- **Event Data:** Only public Ticketmaster and Songkick APIs—caching results in memory or localStorage to respect rate limits.
- **Mapping:** Use Leaflet (no API key) or the free tier of Google Maps, keep map loads under quota.
- **Payments:** Simulate checkout flows; real Stripe calls may be stubbed or demo-only.

UX & Accessibility

- Must be responsive (desktop + mobile) using CSS media queries.
- Follow basic accessibility practices: semantic HTML, alt text for images, and clear color contrast.

4. Overview

EventScape is a web-based prototype that students build and demo in our semester-long coursework. We keep everything simple and free where possible:

- **Client Compatibility**

- Targets modern desktop and mobile browsers (Chrome, Firefox, Safari, Edge).
- Responsive layout via CSS media queries; touch-friendly elements for phones.
- “Favorites” persist in browser localStorage, so no user accounts are needed.

- **Third-Party Integrations**

- **Event Data:** Pull listings from public-access Ticketmaster and Songkick APIs, caching results in memory to stay under rate limits.
- **Maps:** Plot venues using Leaflet (open-source, no API key required).
- **Payments:** Simulated checkout flow (we stub or demo Stripe calls, no real transactions).
- **Notifications:** Basic email alerts via a simple SMTP service or in-page banners (no production push service).

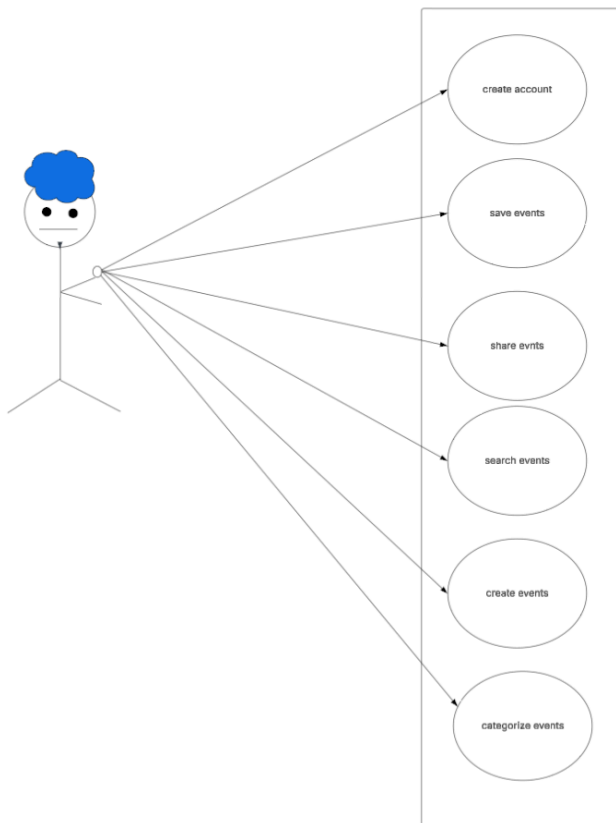
- **Security & Privacy**

- All API calls over HTTPS.
- No personal data collection; we only store non-sensitive event preferences in localStorage.

- **Performance & Monitoring**

- Simple performance checks in the browser (e.g., Lighthouse or built-in dev tools).
- Error logging to the console or a lightweight service (e.g., Sentry's free tier)

5. Business Use Cases



6. Functional Requirements

 Software Requirements Spreadsheet

7. Non-Functional Requirements

- Look and Feel Requirement
 - The user interface of the system shall be intuitive and easy to navigate for beginner users.
- Usability Requirements
 - The system shall be usable by individuals with a wide range of physical and technical capabilities.
- Performance Requirements
 - The system shall load the homepage and main event feed within 2 seconds on a standard broadband connection.
- Maintainability and Support Requirements
 - The system shall be built with modular components to simplify future feature updates or bug fixes.
- Security Requirements
 - The system shall store user passwords using strong algorithms.
- Legal Requirements
 - The system shall comply with all state and local law.

8. Definitions and acronyms

1. API: Application Programming Interface, A set of rules and endpoints that let one piece of software communicate with another
2. MVP: Minimum Viable Product is the smallest set of features that delivers value and can be released for feedback.
3. Nominatim: An OpenStreetMap search engine that converts addresses into latitude/longitude (geocoding) and vice versa (reverse geocoding).

9. Competitive Analysis

Feature / Metric	Ticketmaster	Songkick	Bandsintown
Core Offering	Largest inventory; primary ticket seller for venues & tours	Event discovery + calendar sync	Tour alerts + social sharing
Weaknesses	<ul style="list-style-type: none"> • Deep partnerships with major venues • Mobile app + desktop • Robust ticketing & resale 	<ul style="list-style-type: none"> • Automatic “tour” tracking for favorite artists • Calendar integration (Google, iCal) • Personalized artist alerts 	<ul style="list-style-type: none"> • Social media integration for sharing events • Influencer-driven recommendations • Geo-targeted push notifications
Strengths	<ul style="list-style-type: none"> • Cluttered interface, hard to filter by genre/price • Fees can be opaque • Discovery secondary to sales 	<ul style="list-style-type: none"> • Limited ticket-purchase flow (redirects off-site) • Lacks built-in map view • Basic UI customization 	<ul style="list-style-type: none"> • Reliant on artists’ own updates (inconsistent coverage) • No built-in ticket marketplace • Fewer filtering/sorting options
Unique Differentiator	Official presales & VIP packages	“Track an artist” never miss a tour date	“Invite a friend” viral sharing for events
API / Integration	Public Ticketmaster Discovery API (rate-limited)	Public Songkick REST API	Public Bandsintown API
Business Model	Ticket commissions + service fees	Affiliate referral fees	Affiliate ticket links + advertising

User Experience	Transaction-first; discovery buried	Discovery-first but checkout outsourced	Social-first, event alerts focus
Gap vs. EventScape	Hard to discover niche or indie shows; UI noise	Lacks direct ticketing; no map integration	Coverage gaps for less-popular artists; no native purchase

What This Suggests for EventScape

1. End-to-End Discovery → Purchase

- Unlike Songkick and Bandsintown, we'll keep users in-app for both discovery and ticketing, avoiding drop-offs from redirects.

2. Genre & Indie-Focus Filters

- Ticketmaster excels at big acts but misses niche gigs. EventScape can own the “long tail” of local, indie, and emerging artists through curated feeds and ML-driven genre filters.

3. Integrated Map + Calendar

- Combine Songkick's calendar-sync with a dynamic map view for spatial awareness, no other platform unifies both so smoothly.

4. Social + Personalized Alerts

- Build on Bandsintown's social sharing and artist tracking by layering in friend-activity feeds and “if your friends go” notifications.

5. Transparent Pricing & Low Fees

- Position ourselves as the transparent alternative to Ticketmaster by surfacing all fees up front and offering a streamlined checkout.

Questions:

1. Will the users be able to view current events once they have started?
2. Can users see the history of prices and compare them?
3. Should user data be stored, and how should it be stored if needed?
4. Is there a search feature? If so, how should it be categorized
5. Can the user view another venue after the first, or should the program restart?
6. Should there be a map (image) of the venue?
7. Who is allowed to change the price of tickets?
8. Should prices appear within a specific formatting?
9. Should users be notified when their RVSP status changes?
10. Should hosts be able to restrict events, such as invite-only?
11. Should users be able to print or download event details?
12. Is there a “recommended for you” feature?
13. Should users be able to bookmark events?
14. Will there be social features like friend lists?
15. Can you see what events friends are attending?
16. Should there be an error message displayed if accessing an old event?
17. Should the app ask the user for their time zone?
18. Is there a minimum number of venues the app can support?
19. Would the app have parking as a feature or a map?
20. Does the app update in real time or in a time interval?
21. Does the app need to have a help feature for the users?
22. Who can create the events or change access?
23. Does the app only support one language?
24. Should there be payment handling?
25. Will the app be free?
26. Should there be any deals or discounts?
27. Should the users be able to rate the venues?
28. How do you want to find the information given by the user? (browsing or searching)?
29. Should the users be able to see what type of payments are accepted at the venues?
30. Should each event have a description of what is happening that day?