Project Proposal: Vortex

A cross-platform system for aggregating, tracking, and analyzing games.

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Abstract

Modern PC gamers often maintain game libraries across multiple platforms such as Steam, Epic Games, and GOG. This fragmentation limits visibility into playtime, achievements, system compatibility, and usage patterns. Vortex proposes a unified game library and launcher that aggregates metadata from multiple platforms and provides advanced tracking, performance insights, and intelligent recommendations. The project aims to explore system integration, data aggregation, and user-centric analytics within a desktop application.

1. Introduction

Framing the problem space.

1.1 Background

- Growth of digital game distribution
- Multiple launchers becoming unavoidable
- Lack of cross-platform analytics

1.2 Problem Statement

Existing game launchers operate in isolation, resulting in fragmented libraries, inconsistent tracking, and limited insights into gameplay habits and system compatibility.

1.3 Motivation

- Personal frustration
- Need for unified stats
- Learning opportunity (systems + UI + data)

2. Objectives

- To design a unified game library aggregating multiple distribution platforms
- To implement gameplay and usage tracking across titles
- To analyze system specifications for game compatibility
- To provide performance and achievement visualization
- To develop a modular and extensible architecture

3. Scope of the Project

Shows what is possible and what is not.

3.1 In Scope

What we can do:

- Steam + Epic (initially)
- Read-only, easily accessible acheivements
- Local performance tracking
- Library management

3.2 Out of Scope

What we should skip:

- Online multiplayer services
- DRM bypassing
- Real time overlay injection
- Console libraries

4. Proposed System Overview

Vortex's first appearance.

4.1 System Description

Vortex is a desktop application that aggregates game metadata from multiple launchers, stores unified data locally, and presents insights through a single interface.

4.2 Core Feature Breakdown

- Library Management
- Tracking and Analytics
- System Intelligence
- Engagement

5. System Design / Technical Pillars

5.1 Engine

A modular backend responsible for platform integration, data collection, and system monitoring.

5.2 Interface

- Desktop UI
- Unified dashboard
- Charts, lists, filters

5.3 Intelligence / AI

- Pattern detection
- System compatibility inference
- Recommendation logic

5.4 Data Handling

- Local database
- Caching
- Normalization
- Privacy considerations

6. Technology Stack

- **Language:**C++ / Rust / Python
- **UI:** Qt / Tauri / Electron
- **Database:** SQLite, MongoDB, PostresSQL
- Build tools
- **Version Control:** Github

7. Expected Outcomes

- A working prototype
- Unified library for selected platforms

- Analytics dashboard
- Technical documentation

8. Learning Outcomes

- System integration
- API consumption
- Data modeling
- UI/UX design
- Software architecture

9. Timeline

Table 1: Rough Timeline

Week	Task
1–2	Research & proposal
3–4	Platform integration
5–6	Tracking system
7–8	UI & Testing