WEB DEVELOPMENT INTERNSHIP REPORT – YouTube Clone

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**Introduction**

This project focused on enhancing a YouTube-inspired full-stack web application by incorporating interactive features such as point allocation for video engagement, daily download restrictions with Razorpay-based premium upgrades, gesture-controlled video playback, dynamic theming based on user location and time, and tiered subscription plans. The goal was to explore advanced features that elevate user experience while also improving platform scalability

**Background**

The web app was originally built to offer smooth video streaming. During the internship, I enhanced it with intelligent features like behavior-driven theming, usage-based reward points, access control, gesture-based video controls, and real-time upgrades using payment integrations. These upgrades mimic the features of a modern video platform tailored for personalization, monetization, and engagement.

**Learning Objectives**

* Implement video reward point logic dynamically linked with user activity
* Add custom download restrictions and premium plan logic with Razorpay
* Design tier-based subscription models with time-limited access
* Build gesture-based interactions within the video player
* Dynamically adapt UI theme based on location and time
* Deploy and maintain full-stack functionality using modern hosting platforms

# Activities and Tasks

# Video Watch Points System

# Task: Allocate 5 points per video watched.

# Activity: Implemented a backend system that tracks the number of videos watched and stores reward points in the user’s profile (5 points per video). Verified correctness across sessions and ensured point updates were reflected on the user dashboard.

# Daily Video Download with Premium Unlock

# Task: Allow one video download per day, unlimited downloads via premium.

# Activity: Enabled users to download a video directly from the website and display it under the "Downloads" section in their profile. If a user attempts multiple downloads in a day, they are prompted to upgrade via Razorpay test payment integration. After successful payment, download limits are lifted.

# Tiered Subscription Plan with Email Invoice

# Task: Create Bronze, Silver, and Gold plans with varying watch limits.

# Activity: Integrated time-restricted video playback for free users (5 mins). Users can upgrade via Razorpay:

# Bronze: ₹10 – 7 mins view

# Silver: ₹50 – 10 mins view

# Gold: ₹100 – Unlimited view Upon payment success, users receive an email with plan confirmation and an invoice using a mock email service.

# Gesture-Controlled Custom Video Player

# Task: Add gesture-based controls to the video player.

# Activity: Customized the player to support:

# Double tap right → forward 10 seconds

# Double tap left → rewind 10 seconds

# Single tap center → pause

# Triple tap center → play next video

# Triple tap right → close website

# Triple tap left → open comment section These controls were tested across mobile and desktop environments for responsiveness and accuracy.

# Time and Location-Based Theme & OTP Behavior

# Task: Dynamically adapt theme and OTP based on login context.

# Activity: Fetched user’s login time and approximate location using IP-based geolocation. Implemented:

# White Theme: If login time is between 10 AM – 12 PM and user is from Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, or Telangana.

# Dark Theme: All other cases.

# OTP Flow:

# Southern states → Email OTP

# Other regions → Mobile OTP Logic was built with location checks and conditional routing for verification paths.

# Skills and Competencies

# ReactJS, Node.js, Express

# Razorpay Payment Integration

# Web APIs (getDisplayMedia, MediaRecorder)

# IP Geolocation & Time-based UI Updates

# Custom Video Player Design & Gesture Detection

# TailwindCSS for responsive design

# Hosting with Vercel (frontend) and Render (backend)

# Challenges and Solutions

# Challenge 1: Payment Plan Validation

# *Issue:* Multiple payment plans triggered errors during concurrent upgrades.

# *Fix:* Validated existing plans before enabling new Razorpay instances and ensured invoice generation only post-success.

# Challenge 2: Gesture Conflict on Video Player

# *Issue:* Tap events overlapped, causing unwanted behaviors.

# *Fix:* Created debounce logic and prioritized gestures using a state-based listener.

# Challenge 3: Location-based OTP Fallback

# *Issue:* Some IPs couldn’t be mapped precisely.

# *Fix:* Added a fallback to user input region and prompted confirmation.

# Outcomes and Impact

# The internship was highly productive, resulting in a rich, user-interactive video platform. Features like reward-based engagement, flexible subscriptions, and dynamic behavior-driven themes not only enhance the user experience but also introduce monetization potential and modern UI paradigms.

# Conclusion

# This internship allowed me to dive deep into real-world use cases involving advanced media handling, user authentication flows, and third-party integrations. I explored the synergy between frontend interactions and backend logic while mastering tools essential for modern application development.