**Ideation Phase**

**Defining the Problem Statements**

|  |  |
| --- | --- |
| **Date** | **26-09-2023** |
| **Team ID** | **675** |
| **Project Name** | **Media Streaming with IBM Cloud Video Streaming** |

**Media Streaming with IBM Cloud Video Streaming**

**Problem Definition and Design Thinking**

**Introduction**

The task at hand entails the development of a cutting-edge virtual cinema platform, leveraging the capabilities of IBM Cloud Video Streaming. This platform aims to empower users to effortlessly upload and stream their preferred movies and videos on-demand. The overarching goal is to facilitate the shared enjoyment of movie nights with friends and family, regardless of their geographical locations. To enhance the overall movie-watching experience, we are committed to delivering a seamlessly integrated streaming solution that guarantees exceptional video playback quality, thereby immersing users in a truly captivating cinematic experience.

In this document, we will outline the problem statement, the steps involved in solving it, and the design thinking approach that will guide our project.

**Problem Statement**

Objective: Create a cloud application that allows users to upload and watch their favourite movies and videos on-demand with high performance, data security, low buffering, high streaming quality and compatibility with a wide range of devices.

Data: We have a database containing metadata for media content, this dataset encompasses information such as titles, descriptions, genres, release dates, and runtime for the movies and videos to be streamed. An analytics dataset that tracks user engagement, streaming quality, and content popularity for optimizing the platform's performance and user experience. These datasets collectively form the foundation for a robust and efficient Media Streaming cloud application.

**Key Challenges:**

**1. Scalability:** As the user base and content library grow, ensuring the system can scale to handle increased demand for streaming without compromising performance is a significant challenge.

**2. Content Management:** Efficiently managing a vast library of movies and videos, including metadata, thumbnails, and user-generated content, requires robust content management and indexing systems.

3. **Content Delivery:** Delivering high-quality video streams to users with varying network conditions and device capabilities necessitates effective content delivery and adaptive streaming solutions.

4. **Security and Access Control:** Protecting copyrighted content and ensuring only authorized users can access certain content poses a challenge. Implementing robust access controls and encryption is crucial.

5. **User Experience:** Providing a seamless and user-friendly interface for uploading, searching, and streaming content is essential for user satisfaction.

**Design Thinking Approach**

**Empathize:**

Before addressing the problem, it's crucial to empathize with the users and comprehend their needs. Our primary users in this scenario are movie enthusiasts and content creators. To create a user-centric solution, we must gain insights into their expectations, preferences, and pain points related to media streaming.

**Actions:**

- Conduct user surveys or interviews to understand their viewing habits, content preferences, and pain points with existing streaming services.

- Analyze market trends and competitors in the media streaming industry to identify critical factors for success.

- Seek input and feedback from experts in content delivery, user experience design, and cloud infrastructure.

**Define:**

Building upon our understanding of user needs, we need to set clear objectives and success criteria for our project.

**Objectives:**

- Develop a robust and scalable cloud platform capable of seamless media content upload, storage, and on-demand streaming.

- Ensure high-quality video playback and user-friendly navigation within the app.

- Achieve user satisfaction metrics, including high user engagement, minimal buffering, and positive feedback.

**Ideate:**

During this phase, brainstorm potential solutions and creative approaches to address the challenge of creating a Media Streaming cloud app.

**Actions:**

- Explore cloud infrastructure providers such as AWS, Azure, or Google Cloud for hosting and streaming capabilities.

- Consider various streaming protocols and codecs for delivering high-quality video content.

- Brainstorm features such as content recommendation algorithms, user-generated content integration, and social sharing functionalities.

**Prototype:**

Create prototypes to visualize the cloud infrastructure and user interface for the Media Streaming app.

**Actions:**

- Set up a cloud environment to test content upload, storage, and streaming capabilities.

- Develop a user interface prototype using wireframing or UI design tools.

- Conduct usability testing with a small group of users to validate the initial design concepts.

**Test:**

Evaluate the performance of the prototype, both from a technical and user experience perspective.

**Actions:**

- Test the cloud infrastructure for scalability, security, and performance under various loads.

- Gather user feedback on the prototype's usability, navigation, and overall satisfaction.

- Use metrics such as video buffering rates, load times, and user engagement to assess the prototype's effectiveness.

**Implement:**

Once the prototype aligns with the defined objectives and user feedback, proceed with full implementation.

**Actions:**

- Build and deploy the complete Media Streaming app infrastructure, including content upload, storage, and streaming components.

- Implement user authentication and authorization mechanisms for secure access.

- Conduct comprehensive testing to ensure seamless content delivery and user interactions.

**Iterate:**

Continuous improvement is key to maintaining a successful Media Streaming app. Collect user feedback and iterate on the app's features and performance.

**Actions:**

- Monitor system performance, user engagement, and content popularity to identify areas for improvement.

- Address user feedback and implement enhancements, such as refining recommendation algorithms or adding social sharing features.

- Stay up-to-date with emerging technologies and trends in media streaming to incorporate innovations into the platform.

**Conclusion:**

In this design thinking approach, we've outlined the steps to create a Media Streaming cloud app that enables users to upload and stream their favorite movies and videos on-demand. By following this structured approach, our goal is to provide a seamless and enjoyable media streaming experience, catering to the needs and preferences of our users while leveraging the capabilities of cloud infrastructure. Ultimately, we aim to contribute positively to the world of online media streaming.