MEDIA STREAMING WITH IBM CLOUD VIDEO STREAMING

PHASE-5:PROJECT DOCUMENTATION & SUBMISSION

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PROJECT :MEDIA STREAMING

DOMAIN :CLOUD COMPUTING

Project Objective:

The objective of the project is to create a user-friendly online movie streaming platform that provides a seamless and immersive movie-watching experience for users. The platform aims to offer a wide variety of movies, easy navigation, smooth video playback, and interactive features to enhance user engagement.

Design Thinking Process:

1.Empathize:

Understand the needs and preferences of the users by conducting surveys, interviews, and analyzing user data from existing platforms.

2. Define:

Define the problems and challenges users face while streaming movies online. Identify key features and user requirements.

3. Ideate:

Brainstorm ideas for features, user interface design, and interactive elements that can enhance the movie-watching experience.

4. Prototype:

Create wireframes and prototypes of the platform to visualize the layout, navigation, and overall user interface.

5. Test:

Conduct usability testing with a group of users to gather feedback and refine the design based on user input.

6. Implement:

Develop the platform based on the finalized design, incorporating user feedback and making necessary adjustments during the development process.

Development Phases:

1.Planning:

Define project scope, requirements, and goals. Create a detailed project plan outlining tasks, timelines, and resources.

2. Design:

Develop wireframes, user interface elements, and interactive features. Create a visually appealing and intuitive design for the platform.

3.Development:

Build the platform infrastructure, backend, frontend, and database components. Implement features such as user authentication, movie catalog, and search functionality.

4.Testing:

Conduct rigorous testing to identify and fix bugs, optimize performance, and ensure compatibility across different devices and browsers.

5.Deployment:

Launch the platform, making it accessible to users. Monitor server performance and user interactions to address any issues in real-time.

6.Maintenance:

Regularly update the platform with new movie releases, features, and improvements based on user feedback and market trends.

Platform Features:

1.Extensive Movie Library:

A vast collection of movies spanning various genres, languages, and decades.

2.User Profiles:

Users can create profiles, customize preferences, and maintain a watchlist.

3.Search and Filters:

Robust search functionality with filters for genre, release year, ratings, and actors.

4.Interactive User Interface:

Intuitive and visually appealing interface with easy navigation and seamless transitions.

5.Recommendation Engine:

Personalized movie recommendations based on user preferences and viewing history.

6.User Reviews and Ratings:

Users can rate and review movies, providing valuable feedback to other viewers.

7.Social Integration:

Sharing movie recommendations, reviews, and watchlists with friends on social media platforms.

8.Offline Viewing:

Option to download movies for offline viewing on mobile devices.

9.Subtitles and Language Options:

Multiple language support and customizable subtitle options for a global audience.

User Interface Design:

The user interface is designed with a clean and modern layout, featuring movie posters, detailed movie descriptions, and easy-to-access navigation menus. Intuitive icons and buttons enhance user interactions, ensuring a user-friendly experience.

CODING FOR MEDIA STREAMING:

```
#include "opencv2/highgui/highgui.hpp"
#include <iostream>

using namespace cv;
using namespace std;

int main(int argc, char* argv[])
{
```

```
VideoCapture cap("/home/yonghao/Documents/50MbitMJPEG1080p.mp4"); // open the video file for reading


double fps = cap.get(CV_CAP_PROP_FPS); //get the frames per seconds of the video
int numFrames = cap.get(CV_CAP_PROP_FRAME_COUNT); // get the total number of frames

 cout << "Frame per seconds : " << fps << endl;
 cout << "Total Frame Numbers : " << numFrames << endl;

namedWindow("MyVideo",CV_WINDOW_AUTOSIZE); //create a window called "MyVideo"

int frame_number = 1;

while(frame_number<=numFrames)
{
Mat frame;

bool bSuccess = cap.read(frame); // read a new frame from video

if (!bSuccess) //if not success, break loop
{
   cout << "Cannot read the frame from video file" << endl;
   break;
}

   imshow("MyVideo", frame); //show the frame in "MyVideo" window

//save frame

   stringstream ss;
   string name = "/home/yonghao/Documents/Frames/frame_";
   string type = ".jpg";

   ss<<name<<(frame_number)<<type;

   string filename = ss.str();
   ss.str("");

imwrite(filename, frame);
```

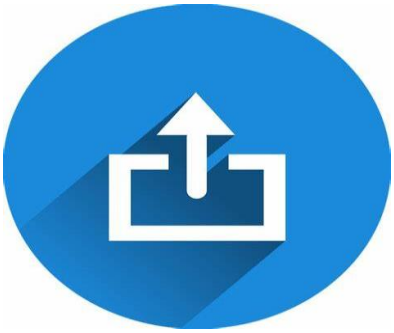
```
cout << "Frame " << frame_number << " has been generated." << endl;

frame_number++;

//user exit by press ESC button

if(waitKey(30) == 27) //wait for 'esc' key press for 30 ms. If 'esc' key is pressed, break loop
{
        cout << "esc key is pressed by user" << endl;
break;
}
}
return 0;
}
```

Video Upload Process:



1.Content Submission:

Content providers upload movies with relevant metadata, including title, genre, actors, directors, release year, and language.

2.Quality Check:

Uploaded videos undergo quality checks to ensure resolution, audio quality, and overall viewing experience meet platform standards.

3.Metadata Integration:

Metadata is integrated with the platform's database, linking movies to appropriate categories and genres.

Streaming Integration:

The platform uses advanced streaming technology to ensure smooth and high-quality video playback. It employs adaptive streaming protocols that adjust the video quality based on the viewer's internet connection, ensuring uninterrupted streaming even with varying network speeds.

SEAMLESS AND IMMERSIVE MOVIE-WATCHING EXPERIENCE:

1.Smooth Playback:

Videos load quickly and play seamlessly without buffering, providing uninterrupted viewing.

2.High-Quality Streaming:

Movies are available in high-definition (HD) and, in some cases, ultra-high-definition (UHD), offering exceptional visual quality.

3.Interactive Elements:

Users can engage with interactive elements such as quizzes, polls, and annotations, enhancing the overall viewing experience.

4.Personalization:

Tailored recommendations, watchlists, and user profiles create a personalized experience, catering to individual tastes and preferences.

5.Social Engagement:

Users can discuss movies, share reviews, and interact with friends, fostering a sense of community.

6.Accessibility:

Subtitle options and language settings cater to a diverse audience, making the platform inclusive and accessible to viewers worldwide.

By incorporating these features and following a user-centered design approach, the platform provides a seamless and immersive movie-watching experience, ensuring user satisfaction and engagement.

THANK YOU!!!