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Team Name	Proj_227250_Team_1
Project Name	Media Streaming with IBM cloud Streaming

Media Streaming with IBM Cloud Video Streaming

PHASE 2 – INNOVATION

Consider we are exploring some tools to stream the media with using IBM cloud.

MEDIA STREAMING:

Streaming refers to any media content – live or recorded – delivered to computers and mobile devices via the internet and played back in real time.

- Music: Pandora, Spotify, Soundcloud.
- Video: YouTube, Vimeo, Vine.
- TV and Movies: Hulu, Netflix, Amazon Instant Video.
- Live video: Periscope, Meekat, and YouNow.
- Podcasts: iTunes, various smartphone applications.

INNOVATION :

In Innovation phase we focus on implementing some of the main frame work and also some of the advanced frame work in media streaming.

- **Use Content Delivery Network (CDN) Integration**:

  A content delivery network (CDN) is a group of geographically distributed servers that speed up the delivery of web content by bringing it closer to where users are.

- **Multi-Device Support**:
  Ensure compatibility across various devices, including smartphones, tablets, smart TVs, and desktops.

- **Multi-Platform Streaming:**
  Enable simultaneous streaming to multiple social media platforms and streaming services.

- **Analytics and Reporting:**

  Implement analytics tools to gather insights into viewer behavior, helping you make informed decisions and improve content delivery.

- **Content Management:**
  Utilize IBM Cloud's storage and content management solutions to efficiently organize and manage your media assets.

FLASK: A micro web framework written in Python.

Flask supports extensions that can add application features as if they were implemented in Flask itself. Flask comes with all the benefits of fast templates, strong WSGI features, thorough unit testability at the web application and library level, extensive documentation.

STEP BY STEP INSTRUCTIONS TO IMPLEMENT MEDIA STREAMING BY USING IBM CLOUD:

STEP 1:

Content Preparation:

Prepare the media content (e.g., video or audio) in a suitable format. Common formats include MP4, WebM, or HLS (HTTP Live Streaming) segments.

STEP 2:

Content Storage:

Store media content on a server or a Content Delivery Network (CDN). Ensure the server has sufficient bandwidth and storage capacity to handle streaming requests.

STEP 3:

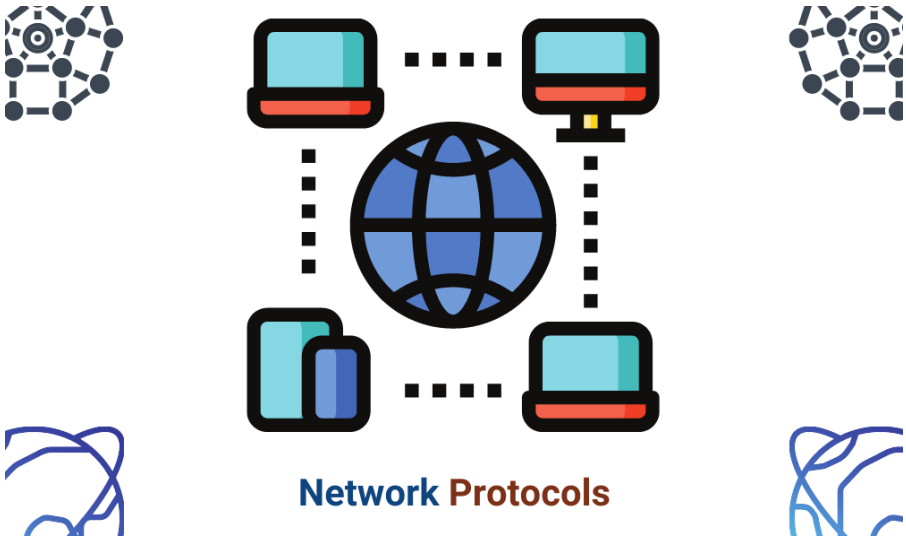
Streaming Protocol Selection:

Choose a streaming protocol that suits your needs. Common protocols include:

HTTP Live Streaming (HLS): Used by Apple devices.

Dynamic Adaptive Streaming over HTTP (DASH): Supports multiple formats and is more platform-agnostic.

Real-Time Messaging Protocol (RTMP): Suitable for live streaming.



STEP 4:

Server Setup:

- Set up a media server or streaming server software that supports your chosen streaming protocol.
    - **NGINX with RTMP module** for RTMP streaming.

STEP 5:

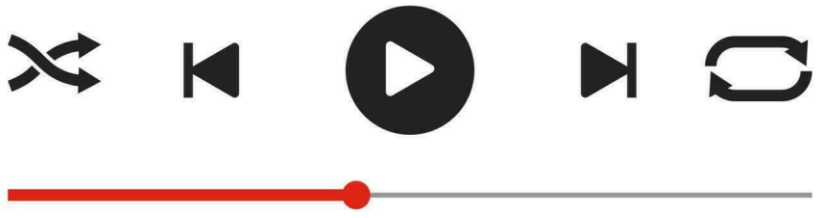
Segment Delivery:

Set up a system to deliver these segments over HTTP(S). This involves creating a directory structure for the segments and updating the playlist files accordingly.

STEP 6:

Playback Control:

- Implement playback control features like play, pause, seek, and volume control.



STEP 7:

Testing and Optimization:

Test your streaming setup under various conditions (e.g., different devices, network speeds) to ensure a smooth user experience.
Optimize for performance and scalability, considering CDN integration, load balancing, and content caching

STEP 8:

Monitoring and Analytics:

Implement monitoring and analytics tools to track viewer metrics, diagnose issues, and make data-driven improvements.

STEP 9:

Moderation and Reporting Moderation and Reporting:

Implement moderation features to handle inappropriate content and user reports. Allow users to report abusive or spammy messages.

STEP 10:

Scalability and Compatibility Scalability and Compatibility:

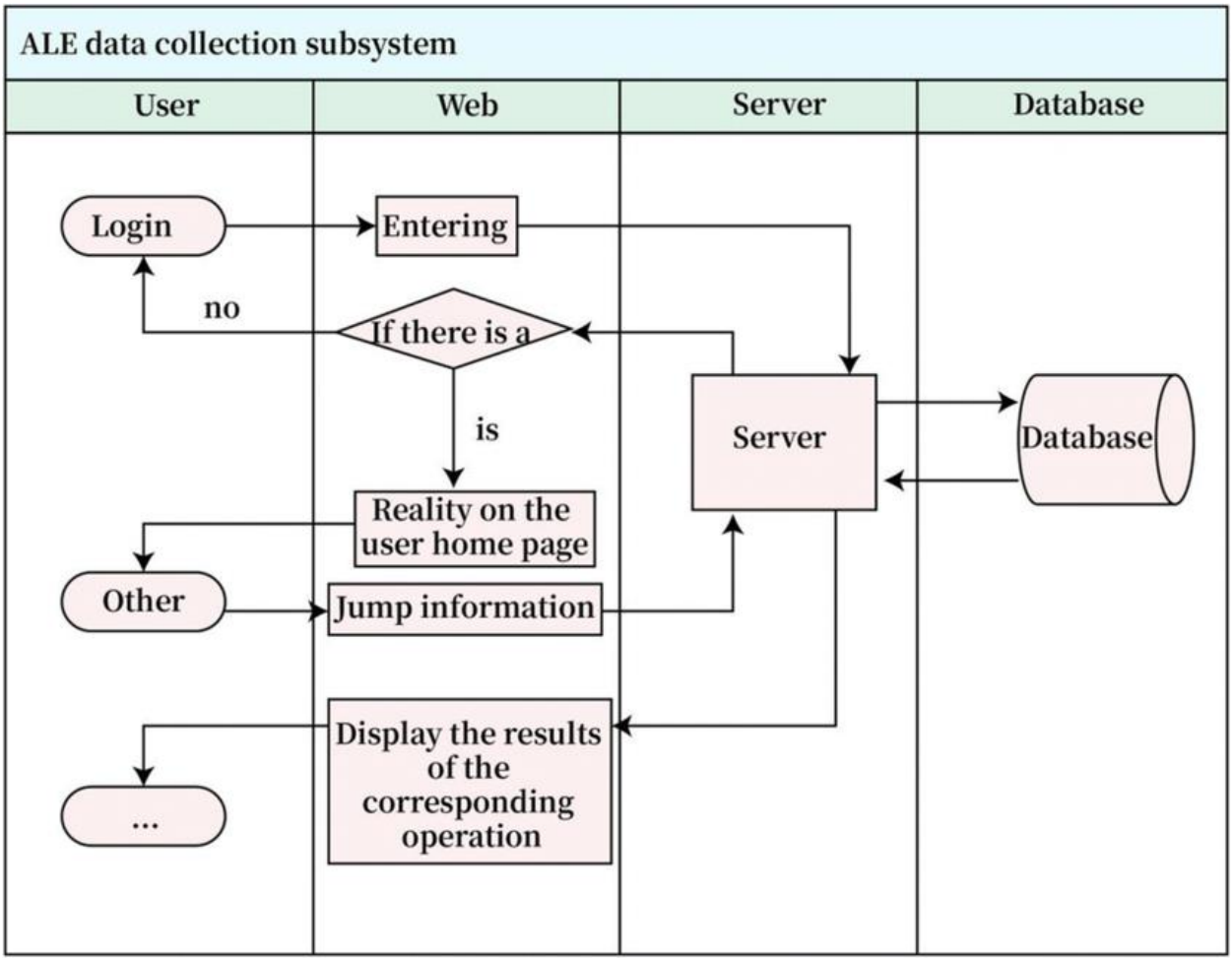
Ensure that your chat system can handle a large number of concurrent users. Optimize the chat interface for both mobile and desktop users, providing a consistent user experience.

STEP 11:

Documentation and User Support:

- Create documentation for users and provide support channels for any issues they encounter.

FLOW CHART FOR MEDIA STREAMING :



CONCLUSION:

Media streaming is a technology that allows the continuous delivery of multimedia content, such as video and audio, over the internet. It involves the preparation, storage, and efficient delivery of media files using various streaming protocols. Media streaming enables real-time or on-demand access to content, and it plays a significant role in modern entertainment, communication, and information distribution, making it a fundamental aspect of the digital age.