RAMNIRANJAN JHUNJHUNWALA COLLEGE

Department of Computer Science

Ghatkopar (West), Mumbai-86

An Internship report submitted for the fulfilment of the program

"M.Sc. In Computer Science"

By

Mr. SAYED MOHAMMED OWAIS

Seat no: 532

M.Sc.-II (Computer Science)

University of Mumbai 2022-23

RAMNIRANJAN JHUNJHUNWALA COLLEGEGHATKOPAR (W), MUMBAI – 400 086

CERTIFICATE

M.Sc. Part II

Computer Science

2022-23

This is to certify that Mr. SAYED MOHAMMED OWAIS of M.Sc. Part II (Semester – IV) Seat no: 532 has satisfactorily completed the internship at Cling Multi Solutions Pvt.Ltd During the semester IV of 2022 – 23 as specified by University of Mumbai.

External Examiner

Prof. Mrs. Vaidehi Deshpande

In-Charge

Dept. of Computer Science.

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CERTIFICATE

This is to certify that Mr/Ms___**SAYED MOHAMMED OWAIS** of
Ramniranjan Jhunjhunwala College/Institution worked as an intern
as part of her MSc course in Computer Science of University of
Mumbai. Theparticulars ofinternship are given below:

Internship starting date: **06-12-2022**
Internship ending date: **Till Date**
Actual number of days worked: **80**   Tentative
number of hours worked: **464**   Hours

Broad area of work: **FLUTTER DEVELOPER**

A small description of work done by the intern during the period:

Sayed Mohammed Owais worked on a Flutter application development project, where he contributed to the design and development. He worked closely with the development team ,design and implement new features, which required them to write clean and maintainable code.

Signature : *Harsh*

Name: Harsh Chauhan

Designation: Sr. Software Developer

Contact Number: 7668012882

Email: harsh.chauhan@clingmultisolutions.org

Director
Cling Multisolutions

Professional Evaluation of intern/employee Name
of intern/employee: **SAYED MOHAMMED OWAIS**
College/institution: **Ramniranjan Jhunjhunwala College**

Sr No	Particular	Excellent	Very Good	Good	Moderate	Satisfactory
1	Attendance		✓			
2	Punctuality		✓			
3	Adaptability					
4	Ability to shoulder responsibility	✓				
5	Ability to work in a team	✓				
6	Written and oral communication skills		✓			
7	Problem solving skills		✓			
8	Ability to grasp new concepts		✓			
9	Ability to complete task		✓			
10	Quality of work done		✓			

Comments:

Sayed Mohammed Owais consistently demonstrated punctuality and good time management skills. He had great adaptability and showed a willingness to learn. Additionally, He had good communication skills, actively participating in team meetings and assignments.

Signature : Harsh
Name: Harsh Chauhan
Designation: Sr. Software Developer
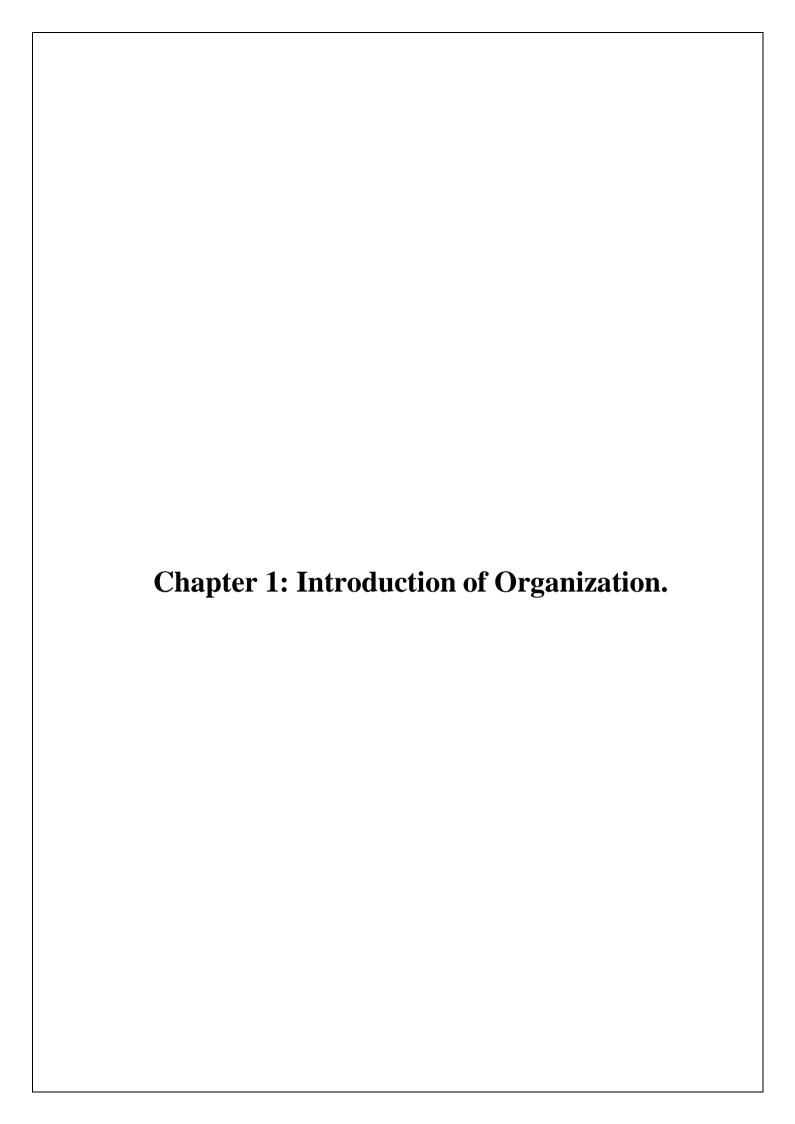Contact number:7668012882
Email: harsh.chauhan@clingmultisolutions.org

ashikastogi

Director
Cling Multisolutions

Flutter Developer

(Application development)

for Cling Multi Solutions Pvt.Ltd.

Chapter 1: Introduction of Organization.

Description of the Organization.

Cling Multi Solutions is a dynamic and innovative technology company that specializes in providing comprehensive solutions for businesses and individuals across various sectors. With a diverse range of expertise and experience, Cling Multi Solutions offers cutting-edge solutions in areas such as software development, web design and development, mobile app development, artificial intelligence, cloud computing, and more.

At Cling Multi Solutions, the team of highly skilled professionals is committed to delivering exceptional results, leveraging the latest technologies and best practices. The company takes a client-centric approach, understanding the unique requirements of each client and tailoring solutions to meet their specific needs. Cling Multi Solutions focuses on creating solutions that are scalable, reliable, and secure, helping clients optimize their operations and achieve their business goals.

With a customer-oriented mindset, Cling Multi Solutions maintains a strong emphasis on quality, innovation, and customer satisfaction. The company is known for its collaborative approach, working closely with clients to understand their vision, providing expert guidance, and delivering solutions that exceed expectations. Cling Multi Solutions has built a reputation for delivering projects on time and within budget, while maintaining open communication channels and providing exceptional support throughout the entire project lifecycle.

In summary, Cling Multi Solutions is a leading technology company that offers comprehensive solutions to businesses and individuals, leveraging cutting-edge technologies, and maintaining a customer-centric approach. With a focus on quality, innovation, and customer satisfaction, Cling Multi Solutions is a trusted partner for businesses seeking advanced technology solutions to drive their success.

Here are some additional details about Cling Multi Solutions:

1- Services: Cling Multi Solutions offers a wide range of services to cater to various technology needs. This includes software development, web design and development, mobile app development (for iOS, Android, and cross-platform), UI/UX design, e-commerce solutions, custom application development, cloud computing and hosting, artificial intelligence (AI) and machine learning, Internet of Things (IoT) solutions, digital marketing, and more. They provide end-to-end solutions, from concept to deployment and maintenance, to help businesses achieve their digital goals.

2-Industries served: Cling Multi Solutions serves clients across diverse industries, including but not limited to, healthcare, finance, e-commerce, retail, education, real estate, hospitality, logistics, and transportation. They have a deep understanding of industry-specific requirements and can customize solutions to suit the unique needs of each sector.

3-Technology expertise: Cling Multi Solutions has expertise in a wide range of technologies and frameworks, such as Java, Flutter, Python, .NET, PHP, Ruby on Rails, Angular, React, Vue, Node.js, Laravel, Django, AWS, Azure, Google Cloud, Docker, Kubernetes, TensorFlow, PyTorch, and more. They stay up-to-date with the latest advancements in the tech industry and adopt industry best practices to deliver high-quality solutions.

4- Approach: Cling Multi Solutions follows a collaborative and agile approach to software development and project management. They involve clients in every stage of the development process, from initial consultation to final delivery, ensuring transparency and alignment with client expectations. They also prioritize cybersecurity and data privacy, implementing robust security measures to protect sensitive information.

5- Client satisfaction: Cling Multi Solutions has a strong track record of customer satisfaction. They have a dedicated customer support team that provides timely assistance and support to clients, even after project completion. They value long-term relationships with their clients and strive to become a trusted technology partner, helping businesses achieve digital transformation and success.

6- Customization and Flexibility: Cling Multi Solutions understands that every business has unique requirements. They offer customizable solutions that can be tailored to suit the specific needs of each client. Their flexible approach allows them to adapt to changing project requirements, timelines, and budgets, ensuring client satisfaction and successful project outcomes.

7- Skilled Team: Cling Multi Solutions boasts a team of highly skilled and experienced professionals who are experts in their respective domains. Their team includes software engineers, web developers, mobile app developers, UI/UX designers, data scientists, AI experts, digital marketers, project managers, and more. They are adept at using the latest technologies and tools to deliver innovative and high-quality solutions.

8- Quality Assurance: Cling Multi Solutions places a strong emphasis on quality assurance throughout the software development lifecycle. They follow industry best practices and conduct thorough testing and quality checks to ensure that their solutions are robust, scalable, and reliable. This helps in delivering bug-
free solutions and minimizing risks associated with software development.

Industry	Information technology Software Development
Founded	12 June 2017 ; 5 years
Founders	• Ramesh Singh • Ashi Rastogi
Headquarters	Pune,Maharashtra, India
Area served	India
Key people	Akshay Gupta (Ceo) Harsh Gupta (Tech lead) Harsh Chauhan (Sr. SD)
Number of employees	40-50
Website	www.clingmultisolutions.org

Chapter 2: Description of Intern's activity

Description about the activities done by the section where the intern has worked:

Designation: Flutter Developer

Job Description:

As a Flutter Developer, you will be responsible for designing, developing, and maintaining cross-platform mobile applications using the Flutter framework. You will work closely with a team of software engineers, designers, and product owners to create high-quality mobile applications that meet the needs of end users. Your primary focus will be on building user interfaces, implementing business logic, and integrating with backend services. You will also be responsible for troubleshooting and resolving issues, optimizing performance, and ensuring the application is delivered on time and within budget.

Currently posted: Permanantly Remote

Project working on: Cling Connect.

Technologies Used:

- **Software :** Visual Studio, Android Studio

- **Language:** Dart

- **Database:** Django and Firebase

- **Others:** Github, Figma

About the project:

Cling Connect: Cling Connect is a user-friendly Flutter-based mobile app that connects software development users to experts.

In today's digital era, software development is one of the most important and rapidly growing industries. The demand for software developers and experts is continuously increasing as technology is advancing at a faster pace. However, finding the right expert for a particular software development-related problem is a time-consuming and challenging task. To address this problem, the Cling Connect App has been developed to connect software development users with experts.

The Cling Connect App is a user-friendly mobile application developed using Flutter, a Google-backed mobile app development framework. The app provides a platform for users and experts to connect and seek solutions to software development-related problems. The app's user interface is intuitive and easy to use, with various functionalities.

User Verification:
The app begins with a login screen where users and experts can log in with their phone numbers and verify their accounts using OTP. The verification process ensures that only genuine users and experts can use the app. After verification, users and experts can select avatars and names before proceeding to the home screen.

Home Screen:
The home screen of the app displays suggested videos, speakers, blogs, and testimonials based on the categories selected by users and experts during registration. The categories are related to programming languages, frameworks, and other software development-related fields. The app's algorithm recommends content based on user preferences, making it easier for users to find relevant information.

Points System:
The app includes a popup where users and experts can select categories to initiate chats or voice calls with experts using points. Points in the app are equivalent to rupees, with 1 point equal to 1 rupee. The point system ensures that experts are compensated for their time and effort in helping users solve software development-related problems.

Request System:
The app also includes a request system where users and experts can send requests to specific experts in their field for problem-solving. The request system ensures that users can connect with the right expert for their problem, making the problem-solving process quicker and more efficient.

Wallet:
The app includes a wallet section where users and experts can add points using payment gateways and view offers and payment history. The wallet section ensures that users and experts can keep track of their transactions, making it easier for them to manage their points and use the app efficiently.

Vertical Swipeable Pattern:
The app also features a vertical swipeable pattern, similar to reels and shorts, where users can view related videos based on their selected field of interest. The vertical swipeable pattern makes it easier

for users to browse through content and find relevant information quickly.

Conclusion:
The Cling Connect App is a convenient platform for users and experts in the software development field to connect, seek solutions, and exchange knowledge using chats, voice calls, and videos. The app's user interface is intuitive and easy to use, making it accessible to users with different levels of technical expertise. The app's point system ensures that experts are compensated for their time and effort, while the request system ensures that users can connect with the right expert for their problem. Overall, the Cling Connect App is a useful tool for software development users and experts, making the problem-solving process quicker and more efficient.

Flutter Packages used in the project:

The below packages are dependencies used in a Flutter-based project.

zego_uikit_prebuilt_call: This package is used for building video calling and live streaming features. It provides pre-built UI components and functionality for creating a user interface for video and audio calls.

shared_preferences: This package provides a simple way to store and retrieve key-value pairs on the device. It is commonly used for persisting user preferences and settings.

twilio_conversations: This package provides a client for Twilio's Conversations API, which allows for the creation of real-time messaging and chat applications.

http: This package provides a way to make HTTP requests in Flutter. It supports a variety of HTTP methods, including GET, POST, and PUT.

url_launcher: This package provides a way to launch URLs in the user's preferred browser. It supports launching URLs with custom schemes and parameters.

cupertino_icons: This package provides icons that are designed for the iOS-style user interface.

google_fonts: This package provides a way to use custom fonts in Flutter applications. It includes a collection of open-source fonts from Google Fonts.

pinput: This package provides a customizable input widget for PIN codes, passwords, and other sensitive information.

table_calendar: This package provides a customizable calendar widget for Flutter applications. It includes support for custom events and multiple languages.

enum_to_string: This package provides a utility for converting between enums and strings in Dart.

provider: This package provides a state management solution for Flutter applications. It uses the Inherited Widget pattern and provides a simple API for managing state.

intl: This package provides internationalization and localization support for Flutter applications. It

includes support for formatting dates, times, and currencies.

mime_type: This package provides a way to determine the MIME type of a file based on its extension.

image_picker: ^0.8.4+2: This package provides a way to select images and videos from the device's gallery or camera. It includes support for cropping and resizing images.

twilio_flutter: This package provides a client for Twilio's Programmable Voice API, which allows for the creation of voice calling applications.

video_player: This package provides a way to play videos in Flutter applications. It includes support for streaming videos and displaying subtitles.

flutter_cache_manager: This package provides a way to cache files downloaded from the internet. It includes support for storing cached files in memory, disk, or both.

card_swiper: This package provides a customizable card swiper widget for Flutter applications. It includes support for multiple card layouts and animations.
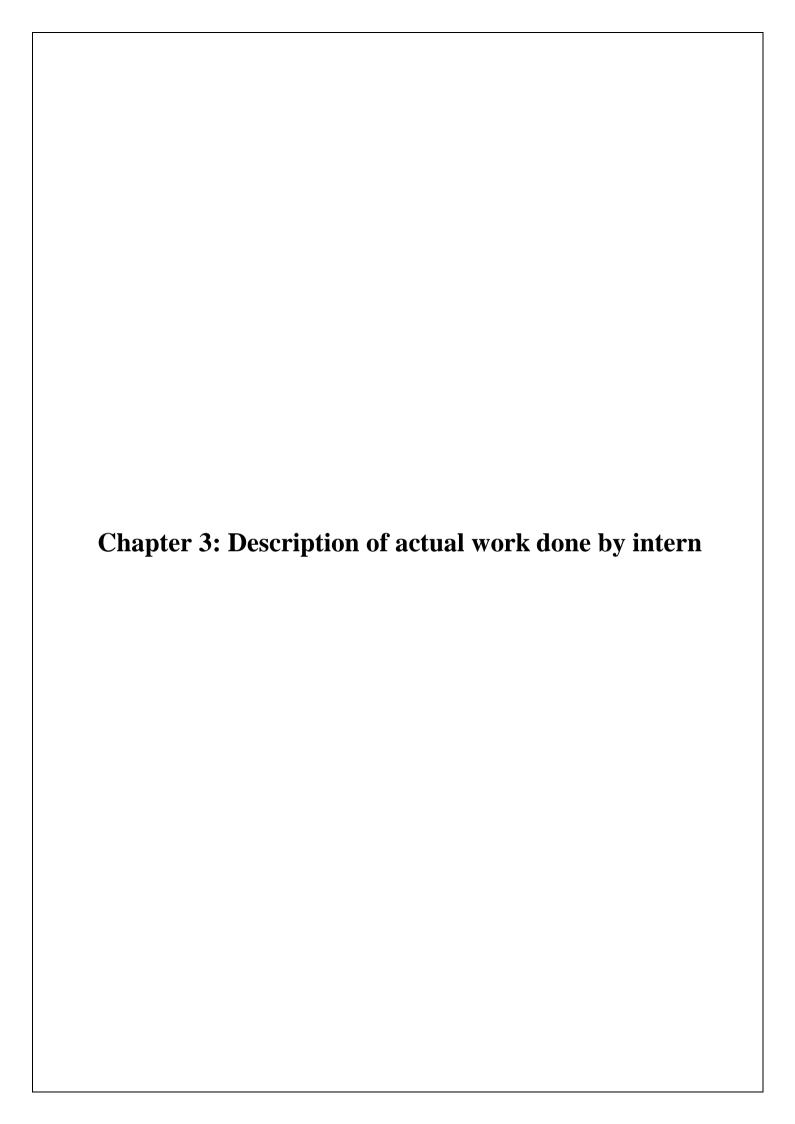
chewie: This package provides a way to play videos with custom controls in Flutter applications. It includes support for displaying subtitles and changing video quality.

razorpay_flutter: This package provides a client for Razorpay's payment gateway. It includes support for making payments and managing transactions.

fluttertoast: This package provides a way to display toast.

Activities to perform on above applications :

- We need to check that application is working fine and if not then we need to analyze the issues and solve that issues so user's of the application can use the application smoothly.

- If user is facing any issues then we need to analyze the issue and solve that issue within proper period of time.

- If any issue is repeating then we need to fix that by doing analysis and we can make changes into the code to fix the issue

- We need to Co-ordinate with seniors to implement or integrate any new services as per Company's requirements.

Chapter 3: Description of actual work done by intern

Description of work allotted and actually done by intern:

Work in Cling Connect Project :

In Cling Connect Project currently I am working on User interface and userexperience and apis integration.

The intern was responsible for creating UI screens and integrating APIs to display data from the backend in a Flutter-based mobile application. This involved working closely with the development team to understand the requirements and design specifications for each screen.
The intern started by creating wireframes and UI designs using tools like Figma and Sketch. They then implemented these designs using Flutter widgets, ensuring that the UI was responsive and functional across different devices and screen sizes.
In parallel, the intern worked on integrating APIs to fetch and display data from the backend. This involved understanding the data schema and API endpoints, and using packages like http and provider to make API calls and manage state.
The intern also worked on optimizing the app's performance, implementing features like lazy loading and caching using packages like flutter_cache_manager.

UI designed by Intern:

Login screens: The intern have been responsible for creating three different login screens. These screens would have allowed users to enter their phone number and verify their account using an OTP.

Splash screens: The intern have created three different splash screens to display when the app is launched. These screens would have featured branding and messaging related to the Cling Connect app.

Avatars selector screen: The intern have been responsible for creating a screen where users and experts can select an avatar for their profile. This screen may have included a grid of images to choose from and a confirmation button to save the selection.

Home screen: The intern have created the home screen for the Cling Connect app. This screen would have displayed suggested videos, speakers, blogs, and testimonials based on the categories selected by users and experts during registration. Users and experts would have been able to select categories of their interest, such as programming languages, frameworks, or other software development-related fields.

Wallet screens: The intern have created three different wallet screens for users, experts, and admins. These screens would have allowed users and experts to add points using payment gateways, view offers and payment history, and perform other transactions related to the app's points system.

Expert and user categories screens: The intern have been responsible for creating screens where users and experts can select categories related to their field of interest. These screens would have allowed users to initiate chats or voice calls with experts using points and also send requests to specific experts in their field for problem-solving.

Overall, creating UI screens for a complex app like Cling Connect would have been a significant task for an intern. The intern may have needed to have a good understanding of Flutter framework and UI design principles to create screens that are visually appealing, user-friendly, and functional.
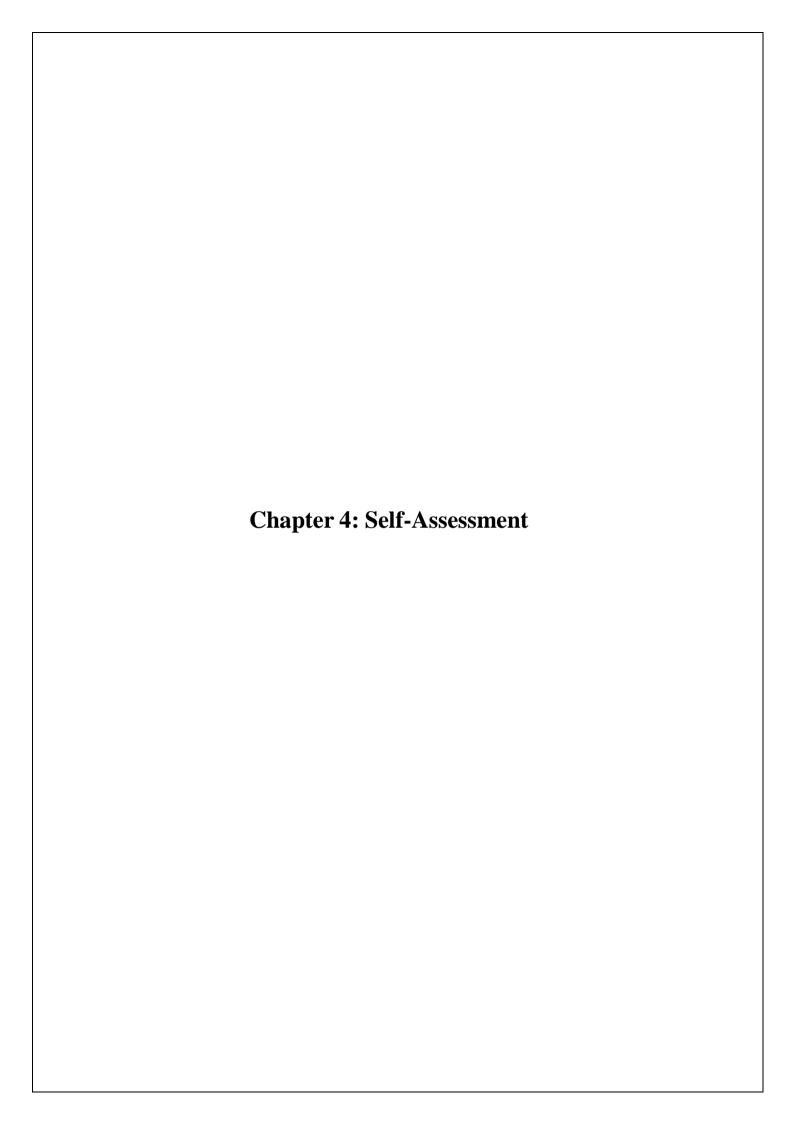
Integration of Api's done by Intern:

Get OTP API: The Get OTP API is used to request a One Time Password (OTP) from the server for user authentication. The intern integrated this API by making a POST request to the API endpoint using the http package in Flutter. The request contained the user's phone number as a parameter. Once the request was successful, the server sent an OTP to the user's phone number via SMS.

Verify OTP API: The Verify OTP API is used to verify the OTP sent to the user's phone number during the login process. The intern integrated this API by making a POST request to the API endpoint using the http package in Flutter. The request contained the user's phone number and the OTP entered by the user as parameters. If the OTP was valid, the server sent back a response with a token that was used for subsequent API requests.

Avatars API: The Avatars API is used to retrieve a list of avatars that the user can choose from to represent their profile picture. The intern integrated this API by making a GET request to the API endpoint using the http package in Flutter. The response contained a list of avatars with their respective URLs, which were then displayed in the app's UI for the user to choose from.

Categories API: The Categories API is used to retrieve a list of software development-related categories that the user can select based on their interests. The intern integrated this API by making a GET request to the API endpoint using the http package in Flutter. The response contained a list of categories with their respective names and IDs, which were then displayed in the app's UI for the user to select from. Once the user selected a category, the app would display related videos, speakers, blogs, and testimonials according to selected category.

The intern also worked on handling API errors and exceptions, implementing retry logic, and ensuring that the app's API requests were secure and used appropriate authentication and authorization mechanisms. They collaborated with the backend team to ensure that the API responses were consistent with the app's UI requirements and made changes as needed based on feedback.

Chapter 4: Self-Assessment

Self-Assessment

Overall, my experience working on the Cling Connect as an intern has been a valuable learning opportunity. I have gained practical experience in mobile app development, database management, and have developed a strong work ethic and professionalism

Flutter development: Over the past six months, I have gained a deep understanding of the Flutter framework and have become proficient in developing mobile applications using Flutter.

UI/UX Design: Through my work on the Cling Connect App, I have honed my skills in designing visually appealing user interfaces and user experiences that are easy to use and navigate.

Database Management: I have gained experience in designing and implementing a database architecture that is scalable, secure, and efficient.

Team Collaboration: Working collaboratively with other team members, I have learned to effectively communicate and contribute to the success of the project.

Troubleshooting and Debugging: I have developed proficiency in identifying and resolving issues with the app, including debugging code and testing for quality assurance.

Time Management: Through my work on the Cling Connect App, I have gained experience in managing my time effectively to ensure that I meet deadlines and deliver quality work.

Professionalism: Working as an intern has allowed me to develop my professionalism and work ethic, including maintaining a positive attitude, being proactive, and taking ownership of my work.

Skills Gained: Designing, Coding, Debugging, Time Management, solving issues raised by client

THANK YOU