# CODIFYK – COMMUNITY PLATFORM FOR CODERS

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## ABSTRACT

Codifyk is a cross platform application which is designed to tackle the problems faced by programmers. The coding space is fragmented as there are multiple websites for the coders to use. Also, there is no dedicated space for only programmers to contact while coding at the same time. The application serves as a centralized hub for the coding community, providing a platform for users to connect, collaborate and share information and knowledge. Using modern technologies such as flutter and firebase, our application provides a user-friendly coding environment with an efficient event management system and supportive community features. Through of the major features of the application, which is chatroom, coders get a virtual space to interact and communicate with each other efficiently. This creates a sense of competition and provides a platform for users to seek and provide help to those in need. Users can also collaborate to work on projects which increases efficiency and output.

**Keywords:** Codifyk, Flutter, Firebase, Chatroom.

## I.    INTRODUCTION

In the vast world of coding, there is a problem of effective and efficient communication. Across various platforms that have been created for coders. Programmers who share a common drive for coding often find themselves dispersed across various websites and platforms that have been created for coding while catering to the needs of different users and their needs. Even within the existing platforms, there is a lack of communication medium which makes it harder for users even on the same platform to communicate.

This fragmentation and lack of communication creates a void which isolates users from others of the same mindset or even from people with experience who can serve as a mentor. People often have to refer to different platforms to initiate a conversation which is not very efficient. This hinders growth as human beings learn and grow together.

Apart from this, there is an abundance of information present on the internet. There are countless activities, scattered across various platforms that take place. The sheer volume of information makes it hard for users to keep track of information and often creates confusion which results in missed opportunities. Navigating through different websites is a hassle and with all the visual clutter on these websites, one may miss out on necessary information.

Additionally, the already present community platforms lack a compiler. Often users have to navigate to different apps or websites to do coding. This slight inconvenience can cause procrastination in users as navigating to and forth between platforms continuously can be tiring.

These challenges call for a solution, a platform which identifies the needs of the users and provides whatever is required by them in a single location.

## II.    LITERATURE REVIEW

The digital revolution has transformed every aspect of modern life. There has been a shift in how most things work. More and more businesses and technologies have gone online, and the amount of internet users is

increasing at an exponential rate as the internet has become cheaper and more easily accessible to every corner of the world. This shift has created a high demand for individuals with technical skills which can contribute to the creation of new products and technologies. From development to artificial intelligence and machine learning, many various fields have emerged, and coding has become an important part of countless industries. Coding itself is not directly related to these fields as it is a very vast domain but learning to code is very important as a means of cracking lucrative career opportunities as this field is booming and has potential for skilled candidates. These technological advancements have given rise to coding education. Many online platforms have emerged such as LeetCode, HackerRank, CodeForces etc. which offer various activities which caters to learners at all levels. This flexibility has given users from diverse backgrounds to engage in coding as a career.

The rise of coding as a hobby is rewarding in nature. According to book written by Antti Laaksonen[1] , solving coding problems stimulates critical thinking, increases problem solving skills and creativity. For some it is leisurely activity that provides intellectual stimulation. They enjoy the thrill of trickling new problems and refining their techniques while competing with their fellow individuals due to the rating system provided by these platforms. This creates a sense of competition in individuals as they actively try to compete with their friends and rivals in an attempt to become better and get better ratings which leads to healthy competition. An algorithm for a problem has to be both correct and efficient without eating up resources that are not required and wasting time. There are several test cases and conditions in competitive coding by which a solution is evaluated and is given a rating based on the efficiency of the solution. The goal is not just to produce a solution by hook or by crook, it is to create an efficient solution.

The number of individuals engaging in coding activities have skyrocketed which leads to a vibrant and dynamic coding community. But there exists a problem. There are plethora of coding websites and online communities present on different backgrounds. Due to the rise of several platforms, which have their own benefits and features, the coding space has been fragmented. There are different coding platform communities and collaboration channels which gives rise to many problems and complications. As programmers navigate through tons of websites forums and social medial platforms, they face the problem of maintaining communications with peers and friends both for causal tasks or when collaboration on a project .This fragmentation leads to scattered ecosystem where valuable insights opportunities and mentorships are dispersed across different platform which hinders seamless collaboration and knowledge sharing often leading users to navigate to other communication platforms to communicate which is one more extra step. A study done on open source [2] shows that open-source projects lead to community coding where liked minded individuals who has same interests pool their efforts which leads to overall betterment of the project.

Considering these shortcomings, scholars have identified the need and potential of a centralized platform which consolidates communication channels, event management and provides a healthy learning environment for programmers. A centralized platform which offers a unified space where programmers can converge, connect, and collaborate with people with similar interests thereby fostering a sense of community and facilitating the exchange of ideas and expertise. According to a conference paper published [3], community coding provides a way to aggregate resource to maximize performance by allowing users to coordinate their knowledge and skills which ultimately leads to better understanding and results. A unified platform will allow us to harness and use the power of multiple people to perform tasks which would lead to better and efficient results as compared to when done by individuals. As per a study[4],existing coding platforms such as Stack Overflow and GitHub contribute greatly to coding community. It expands on the topic of collaborative coding and tells us how such online platforms contribute to knowledge sharing and collaboration while developing projects. Another study [5] supports the idea of coding together which leads to better result and overall increased efficiency and workflow.

## III.     PROBLEM STATEMENT

In today's coding landscape, programmers face several problems and challenges that hinder effective communication, collaboration, and skill development. The coding community is fragmented across various platforms with no existing centralized space for users to connect, interact and engage in meaningful

conversations which can help them grow and be better. This leads to missed opportunities, information overload and disconnected coding experience.

Proper collaboration cannot be made possible to due communication obstacles. The abundance of information on websites as well as visual clutter results in information overload which leads to decreased engagement and loss of interest. Also, the existing community platform lacks a compiler which again leads to users navigating to different platforms to fulfill their requirement.

There is a need for a complete platform that goes beyond the limitations of the existing platforms to address these issues and make coding easier. This platform should act as a centralized hub for the coding community where users can engage in meaningful interactions, seek and provide help, keep track of contests and create a friendly supportive yet competitive environment.

## IV.     PROPOSED SYSTEM

The proposed system aims to transform the coding experience by providing a unified platform for users which addresses the several challenges faced by programmers. This includes problems arising in communication, collaboration and skill development. Users will have access to a centralized portal to connect with fellow enthusiasts, people with similar mindset and mentors, and opportunities. This application seeks to bridge the gaps between the various coding platforms by integrating them into the application, providing user friendly interface and a virtual space for communication between the users and an event tracking system. Built on technologies such as flutter and firebase, Codifyk promises to deliver a seamless and secure user experience for users who are spread across various devices and platforms.

### System Architecture

The app's database is designed on Google Firebase which is a real time database provided by tech giant google that enables data synchronization and real time updates which makes the app responsive and up to date. The application's front end is designed using flutter which is also an open-source app development framework which uses Dart programming language which is an effective object-oriented programming language. The app has a login and sign-up screen that authenticates the user and ensures no one unwanted accesses the app while also providing security to existing accounts. New users are welcome to sign up to our app. Since the app uses Firebase, Google's trust and security makes it a reliable platform to store user information and other private information.

### Chat Room

Codifyk consists of a feature which helps users engage in real time text-based conversations with other users. Users can seek out other users based on their interests, topics, events or programming languages. In short, one can find or create a space based on their interest or their needs. It can be dedicated to some purpose or just be a public space. This allows the user to interact and coordinate better which leads to better results. According to a study[6], chatting provides many benefits. As more of the younger generation is online, internet is easily available, and they are used to chatting. It enhances their level of learning. It acts as a medium for communication between individuals since not everyone can be available on call every time and chats remain as long as we don't delete them. It holds records of the conversation we previously had and we can refer to them anytime we want and we can also evaluate what we are writing which prevents miscommunication and ensures our message goes through properly without being ambiguous which is an essential part while coding.

### Event Tracker and Notification

Codifyk contains a list of events that are upcoming as well as events that are going on within the app itself. It includes a notification system to remind users about the upcoming contest, events, workshops and other relevant events that the user might be interested in. This prevents users from missing out on important events and it is better than an email system as a user gets tons of email daily so the important ones may be overlooked. The notification system directly informs the users about upcoming events.

### Coding compiler and Workspace

This feature provides the user with a user-friendly coding environment where they can write, edit and compile codes directly from their phones without needing to refer to any websites. Users need not navigate to different platforms to do coding and it can be done within the application itself.

### Progress Tracker and Visualizer

Tracking stats play an important role in understanding users' performance and engagement. Codifyk progress tracker encompasses various metrics regarding user's activity on the platform including number of questions done, types of questions done, user's efficiency etc. It also visualizes it to help the user understand the data better. According to a study[7], gamifying or producing results in terms of performance metrics leads to better performance in students. It creates a sense of reward for students when they compare themselves to others. Scoring a higher rating or being higher in terms of stats creates a sense of healthy competition between students which helps them to perform better and work harder to come out on top.

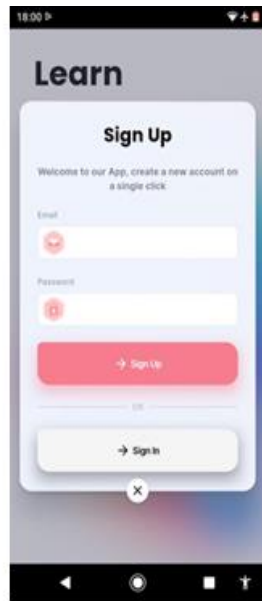### User Interface



Figure 1 (b) Sign Up Screen



Figure 1 (a)On boarding Screen



Figure 1 (c)Home Screen

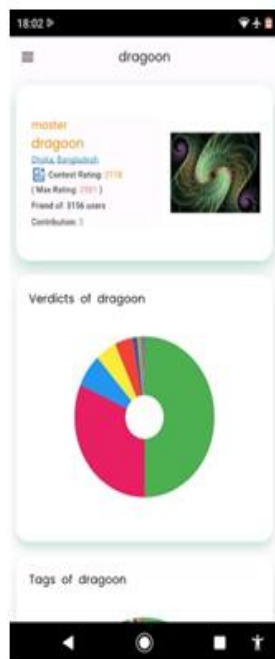

Figure 1(d)Ongoing Contest



Figure 1(e) Previous Screen



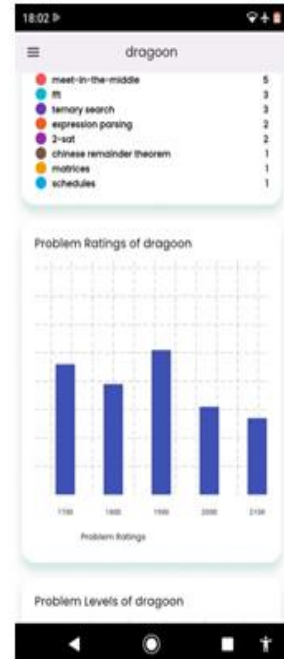Figure 1(f) User coding Profile



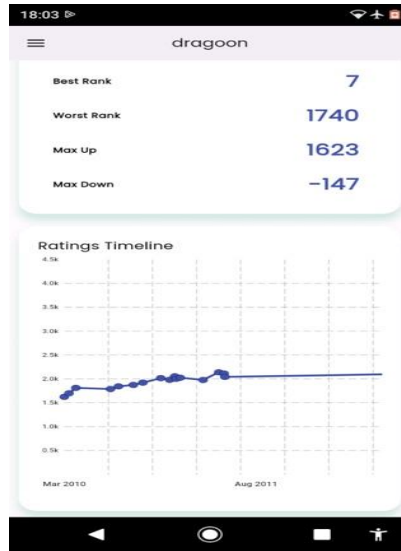Figure 1(g) User Coding Profile



Figure 1(h) User Coding Profile

**Figure 1** (i) User Coding Profile

## V.    ADVANTAGES OF CODIFYK-COMMUNITY PLATFORM FOR CODERS

**UNIFIED PLATFORM**

Acting as a centralized platform for coding community, bringing together programmers and coders together on a single platform. This enhances communication and collaboration between users and acts as a medium for better knowledge sharing between the users.

**SECURITY**

Firebase offers several advantages in terms of security, which makes it a preferred choice for our applications which is going to contain a lot of personal data. Firebase Authentication provides robust authentication mechanisms which includes email-password and phone number authentication and social media sign in. Only authorized users can access the app which enhances the overall security. Unauthorized access and attempts can be prevented[8]. Firebase transits data in both transit and rest which ensures data remains secure during transmission over a network.

**EVENT MANAGEMENT**

Codifyk is also included with a feature to assist users by providing user the data about upcoming contests and hackathons. Users can also find out about the previously happened events. By integrating this functionality in the app, users can get the information about the events on a single click without needing to refer to websites and the information is also presented in a simplified and clean format which avoids confusion and provides information straight to the point.

**USER-FRIENDLY CODING ENVIRONMENT**

Codifyk comes with a compiler which helps the user to compile code from the app itself. This feature helps the user to code while staying within the app without the need to navigate to different sources which makes it more convenient for user to stay engaged. Since the app is also made for mobile phone users, one can simply code on the app itself instead of relying on the laptops or desktops which provides easy accessibility for the users who want to code.

**SUPPORTIVE COMMUNITY**

Codifyk, being a community platform, provides a supportive environment enabling users to connect with like-minded people which enables users to help and each other while also instilling a sense of competition in them. This further helps the user to improve their coding and problem-solving skills.

**COMPETITIVE ENVIRONMENT**

Codifyk includes features like coding contests, and leaderboards which can help encourage a healthy competition among users. This competitive environment drives the user to excel and enhance their coding skills to be better than their peers.

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**CROSS PLATFFORM COMPATIBILITY**

Built using technologies like Firebase and Flutter[9], Codifyk offers cross-platform compatibility, which enables users to access the application seamlessly across a wide range of devices and operating systems. Users are not limited by the devices they own, which greatly increases the user base.

**REAL-TIME COMMUNICATION**

Codifyk comes with chat rooms and messaging features which provides real time communication between the users which fosters sense of collaboration and connection. Users can engage in seamless conversations, share ideas, and help each other while also providing assistance to others which enhances the core idea of the application which is to bring coders together.

**EVENT NOTIFICATION**

Codifyk's event notification system ensures that users never miss out on important coding events, contests, or workshops. Users can customize their notification preferences to receive alerts about events that match their interests and availability.

# VI.    CONCLUSION

Codifyk represents a game changing solution to the challenges faced by the programmers in today's changing coding landscape. Presence of a unified platform fosters communication, collaboration, and development of skills among individuals. Codifyk has the potential to revolutionize the coding experience for the users.

Through its user-friendly interface, efficient event management system, and supportive community environment, Codifyk empowers new programmers to connect with fellow enthusiasts and participate in coding events and enhance their skills in a competitive yet collaborative setting. The platform's cross-platform compatibility ensures accessibility for users across various devices and operating systems, while its real-time communication features enable instant collaboration and support with other users.

Codifyk's emphasizes on community building and knowledge sharing which sets it apart as a hub for the coding community, where users can network, learn from each other, and stay updated on the latest trends and opportunities in the field. By bridging the gap between fragmented coding platforms and providing an ecosystem for programmers, Codifyk paves the way for a more engaging, collaborative, and a fun coding journey for all its users.

In short, Codifyk stands to make a significant impact on the coding community, offering a versatile platform that serves to the need diverse need of programmers worldwide. As the coding scene continues to evolve, this application will remain committed to empowering users, fostering innovation, and shaping the future of programming platforms.

# VII.    FUTURE WORK

The scope of this application is vast and there are many possibilities and features that can be added to the app. Various advanced collaboration tools can be added to the app to facilitate real time coding which can help maximize the efforts of the app users which are coding together and cannot be present in person. Every website out there can be integrated inside the app to make it a truly unified coding space. The virtual communication space can be made more advanced and interactive by adding several more features which are present in other community applications to make the application more committed to being a true coding community application. Apart from the initial goal of the appeal can take a different approach by turning the app into an ed-tech platform by introducing interactive tutorials, exclusive challenges, and personalized learning paths. With more resources and manpower, the integrations with coding websites can be made more seamless and interactive for the users.

# ACKNOWLEDGEMENTS

## VIII.     REFERENCES

[1]     Laaksonen, "Competitive Programmer's Handbook," 2018.

[2]     C. Gacek and B. Arief, "The Many Meanings of Open Source," IEEE Software, vol. 21, no. 1. 2004. doi: 10.1109/MS.2004.1259206.

[3]     F. Li and A. Lippman, "Community coding," in 2013 47th Annual Conference on Information Sciences and Systems, CISS 2013, 2013. doi: 10.1109/CISS.2013.6552281.

[4]     B. Vasilescu, V. Filkov, and A. Serebrenik, "Stack Over flow and GitHub: Associations between software development and crowd sourced knowledge," in Proceedings – Social Com/ PASSAT/ BigData/ Econ Com/ BioMed Com 2013, 2013. doi: 10. 1109/SocialCom. 2013. 35.

[5]     J. D. Herbsleb and D. Moitra, "Global software development," IEEE Software, vol. 18, no. 2. 2001. doi: 10.1109/52.914732.

[6]     "Shodhganga@INFLIBNET: A Study On Attitude Towards Internet Chatting And Its Usage Among College Students." Accessed: Mar. 14, 2024. [Online]. Available: https://shodhganga.inflibnet.ac.in/handle/10603/99419

[7]     M. D. Hanus and J. Fox, "Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance," Comput Educ, vol. 80, 2015, doi: 10.1016/j.compedu.2014.08.019.

[8]     "Firebase | Google's Mobile and Web App Development Platform." Accessed: Apr. 08, 2024. [Online]. Available: https://firebase.google.com/

[9]     "Docs | Flutter." Accessed: Apr. 08, 2024. [Online]. Available: https://docs.flutter.dev/