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Crew Mate- Connecting You with Local Taskers

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Abstract

Hiring workers for domestic work or wage-based works has become difficult these days. Workers getting proper payment based on their ability has also become rare. In this paper, development of a website called CrewMate is given in detail. It is an Online Platform which connects you with local taskers or workers to hire for your day-to-day chores. It is a One stop Solution for workers who are looking to get hired and For people who are in need of workers help to finish their tasks. This website contains Hirer Interface and Worker Interface for easy understanding of any type of user. It has worker recommendation system for hirers who are looking for skilled taskers. Payment methods are also provided within the platform to avoid conflicts. Taskers can be booked by talking to them throught chat or a call based on their availability.

Index Terms: CrewMate, Hirer Interface, Worker Interface, Recommendation System

1. INTRODUCTION

Development in digital communication technologies has made transacting work remotely far easier and more econom- ical. At the forefront of this phenomenon are so-called online labour platforms. They allow workers to serve multiple clients at varying hours remotely from their homes or co-working spaces instead of working full-time for a single employer. Online labor marketplaces facilitate the efficient matching of employers and workers across geographical boundaries. The exponential growth of this nascent online phenomenon holds important social and economic implications, as the hiring decisions made on these online platforms implicate the incomes of millions of workers worldwide[1]. Generally, Online Labor markets are for working online, but Crew- Mate is about hiring employees for physical work or offline work. Workers affiliated with an agency have substantially higher job-finding probabilities and wages at the beginning of their careers compared to similar workers without an agency affiliation. This advantage declines after high-quality non- affiliated workers receive good public



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feedback scores. The results indicate that intermediaries have arisen endogenously to permit a more efficient allocation of workers to jobs[2]. This chapter argues that the use of online platforms for managing work, although it appears to have emerged suddenly, in fact represents the evolution of several pre-existing trends. The convergence of these trends, now reaching critical mass, has introduced not just quantitative changes in terms of the num- bers of people working in digitally enabled 'just-intime' labor markets but also qualitative changes in work organization, with far-reaching implications for skills, career development, occupational safety and health, and the sustainability of work in the long term. It concludes by summarizing the implications of these changes for public policy[3]. An online labor market transaction starts with an employer creating an opening by posting a job description. The job description reveals a series of characteristics that the employer is looking for, such as the required set of skills and experience. The job description and the related characteristics are job-specific and they are fully observed by the interested contractors[1]. The common understanding of the expression" digital work" relates to a number of diverse situations, in the context of the digitalization of the economy,'in which a person is engaged in performing one or more tasks using digital devices, irrespective of the physical, temporal, or organizational context of such work performance. In this broad sense, digital work places itself squarely in the middle of an unbounded workplace. While that expression may, for many, immediately bring up images of precarious work situations, not every form of digital work is characterized by precariousness, as the massive use of technology has also brought, among other things, benefits to those" traditional" workers who need or would simply prefer a more flexible arrangement in their working life.

2. LITERATURE REVIEW

Online platforms support so many of our daily activities that we have become dependent on them in our personal and professional lives. We rely on them to buy and sell goods and services, to find information online and to keep in touch with each other. We use them for entertainment, news, transportation, accommodation, finding jobs and employees, finding apps and for many other purposes. Online platforms have also raised new and important policy questions, but the businesses themselves can be more complex than they appear so they are not always well understood.

A. Direct Messaging System:

SAMP, the Simple Application Messaging Protocol, is a hub-based communication standard for the exchange of data and control between participating client applications.SAMP is based on a star topology, and its central component is a Hub through which all communications are passed. Clients first perform a resource discovery step to locate the Hub, and then register with it, establishing a private communication channel through which subsequent calls to the Hub's services can be made. These services include accepting metadata about the registering client, providing information about other registered clients, and forwarding messages to those clients. These mes- sages may elicit responses, which may optionally be passed back to the message sender, again via the Hub. All registered clients are able to send messages in this way. Any client may optionally declare itself callable, in which case it is also able to receive messages sent by others[4]. The Intent mechanism for inter-process communication that forms part of the Android operating system, while its target environment clearly differs from that of SAMP, shares with it some characteristics in terms of design and usage. For instance, message semantics may be defined in a way that is either app-specific or vague, in the latter case resulting in



a user choice at runtime between candidate-receiving apps[5].

B. Recommendation:

Indeed, recommendation systems have a variety of prop- erties that may affect user experience, such as accuracy, robustness, scalability, and so forth. We also review a set of previous suggestions for evaluating recommendation sys- tems, describing a large set of popular methods and placing them in the context of the properties that they measure. We especially focus on the accuracy and ranking measurements that are widely researched, describing a large set of evaluation metrics for these properties. In many realistic recommendation applications, the designer of the system wishes to influence the behavior of users. We are therefore interested in measuring the change in user behavior when interacting with different recommendation systems[8]. The real effect of the recommendation system depends on a variety of factors such as the user's intent, the user's, and the interface through which the recommendations are presented. Thus, the experiment that provides the strongest evidence as to the true value of the system is an online evaluation, where the system is used by real users that Evaluating Recommendation Systems 11 perform real tasks. It is most trustworthy to compare a few systems online, obtaining a ranking of alternatives, rather than absolute numbers that are more difficult to interpret. As recommender systems are expected in many cases to provide rapid recommendations online, it is also important to measure how fast does the system provides recommendations [6]. As recommender systems are designed to help users navigate in large collections of items, one of the goals of the designers of such systems is to scale up to real data sets. As such, it is often the case that algorithms trade other properties, such as accuracy or coverage, for providing rapid results even for huge data sets consisting of millions of items[7].

C. Review System:

As a general rule, it seems that learners value feedback more when it is given by someone they respect as a role model. feedback aims to develop performance to a higher level by dealing with underperformance in a constructive way. If we do not give feedback, this will come with a cost. The learner can assume that everything is fine and will continue practicing in the same way. This leads into a false assessment of their own skills and abilities, and builds up a false perception. In professional life, your workers and anyone you are working for as a team can give you feedback. Feedback in these cases is meant to be given reciprocally. They are meant to act as your mentor, monitor your working and behavioural progress at a work pace, and ensure you receive appropriate career guidance and planning. Generalised feedback is unhelpful and can be confusing. The person receiving feedback remains unclear about the actual purpose of the session and usually starts exploring hidden agendas that might have triggered the feedback. It disrupts professional relationships and causes unnecessary suspicion. Feedback needs to be given in a supportive, empathic and relaxed manner, and on a background of a working relationship based on mutual respect. A person given feedback who lacks confidence may exhibit shyness, difficulty in being assertive, or lack of awareness of their own rights and opportunities. Giving feedback loudly in a noisy corridor, or in the presence of other colleagues or patients, is inappropriate. Such feedback loses its objectivity and the recipient may consider this as an insult that will impact their professional relationship with their peers and patients[9].



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D. Payment Methods:

Efficiency and convenience appear to be the primary moti- vations for buyers and sellers to use online payment systems and, albeit to a lesser extent, the factors that differentiate the systems from one another. Other relevant intrinsic char- acteristics include reliability, security and finality[10]. Online payments enable transactions to be completed more quickly and often with less effort. A buyer who has bid on and won an item at an online auction site can submit payment via the web rather than by mail. The seller immediately receives payment or, in the case of BidPay and online escrow services, notification that payment has been made and authorization to proceed with the transaction. Thus the seller can ship the goods promptly rather than waiting a few days to receive payment or possibly much longer for a check to clear. A great number of new Internet-based payment mechanisms have been created in recent years, although some of the pioneering efforts disappeared after failing to gain sufficient acceptance[11]. Most of these mechanisms require the use of a third party to serve as an intermediary to the transaction. Introduced in late 1998, PayPal is the leading online payment service, with over 7 million registered users[12].PayPal operates in 26 countries. Its daily transaction volume is over dollars 7 million[13] PayPal advertises its services as "free to consumers," although moderate and high-volume users are required to upgrade to fee-based accounts.PayPal can be used for fund transfers and purchases unrelated to auction sites, but its most common application is for online auction purchases[14]. A seller must be registered with PayPal in order to receive payments through the service.55 If the buyer is also a registered user, he or she may initiate a payment by logging into PayPal's web site and entering information about the purchase, including the amount and the seller's e-mail address.

3. IMPLEMENTATION

Developing the website crewmate uses frontend, backend and data base management. The languages and software used to develop the website are detailed below.

A. FrontEnd React.Js

React.js is a widely used JavaScript library for building user interfaces, especially single-page applications (SPAs), where you need a fast and interactive user experience. It was developed by Facebook in 2013 and has since become one of the most popular libraries for building web applications.

1) Component-Based Architecture: React encourages build- ing UI using components. Each component is a self-contained unit that can have its own state, logic, and rendering behav- ior.[15]

2) JSX (JavaScript XML): JSX is a syntax extension for JavaScript that looks similar to HTML. It allows you to write HTML elements in JavaScript code, making it easier to define the UI structure.[16]

3) CSS (Cascading Style Sheets): CSS is a stylesheet lan- guage used to define the presentation (or style) of a web page written in HTML or XML . CSS controls how the elements on a web page should look — such as their layout, colors, fonts, spacing, positioning, and many other visual aspects.

B. BackEnd: JavaSCript

JavaScript is a programming language that allows you to create dynamically updated content, control multimedia, animate images, and do a variety of other things. It was previously known as a client-side language that was used to make websites look more dynamic and interactive.

There are many different JavaScript frameworks available which can make back-end development simpler and more efficient. When a client requests something from the client side of the application, the



request is first sent to the server. Then, some processing or calculations take place in that server to validate the request[15].

Finally, a response is sent to the client side. The Node.js framework is primarily used for all such calculations and processing.

Node.js is used to build I/O-intensive applications such as video streaming sites and online chatting applications, among many others. Numerous established tech giants and newly formed start-ups use the Node.js framework in their opera- tions[16].

1) BackEnd implementation: below is the flow chart for the back-end implementation



Fig. 1. flowchart for the Backend implementation

C. DataBase: Firebase

Firestore is a schema less serverless database with real-time notification capabilities that greatly simplifies the development of web and mobile applications. It scales to millions of queries per second and petabytes of stored data; notable current and past users include the New York Times and BeReal, as well as a prominent social media app and a mobile game each with over a hundred million users. To scale with an increase in database size, Firestore executes all queries using secondary indexes[19].

To reduce the burden of index management, Firestore automat- ically defines an ascending and a descending index on each field across all documents on a per-collection basis.

Firestore supports point-in-time queries that are either strongly consistent or from a recent timestamp, and strongly consistent real-time queries. Both modes support the same query features: projections, predicate comparisons with a constant, conjunc- tions, orders, limits, and offsets[20]. A query can have at most one inequality predicate, which must match the first-order.

The Firebase Realtime Database is a cloud-hosted database. Data is stored as JSON and synchronized in realtime to every connected client. When you build cross-platform apps with our Apple platforms, Android, and JavaScript SDKs, all of your clients share one Realtime Database instance and automatically receive updates with the newest data.

The Realtime Database provides a flexible, expression-based rules language, called Firebase Realtime Database Security Rules, to define how your data should be structured and when data can be read from or written to. When integrated with Firebase Authentication, developers can define who has access to what data, and how they can access it.



- 1) Database implementation:
 - : This is the flow chart for the Database implementation.



Fig. 2. DataBase Implementation .

4. **RESULTS**

Here we will see in detail how the website works step by step. Flow chart below clearly explains the flow of the website for better understanding follow below images. These are the results of developed website.

A. Website Work Flow

This is the flow chart for the Website Work Flow.



Fig. 3. website workflow

According to your local language, you can select any language. This page is selected with Hindi



language.

These are the images from the developed website.

Given below is the homepage of the crewmate website. Here users can easily log in through their credentials or they can sign up if they are new to this website. Further, the process will be navigated through upcoming figures.



Fig. 4. Login page

Once the user enters the website. They face two interfaces they are workers' space and Hirer's space. User can select their space according to their requirement.



Fig. 5. Homepage

If you are a Hirer then you can enter your requirements of a worker such as the type of work needed, the age of the worker, the amount you are willing to pay, and details of the date and time the worker is required to work for you. This would help us to retrieve All suitable workers for your job description.



Fig. 6. Hirer Space



When the user is a worker they can enter their details such as the type of work they are willing to do, the amount they would like to charge to the hirer, their address, etc.

	I Need a Worker	I'm a Worker			
Register as a worker	and start earnin	g			
Name		Age			
Gender Select Gender		Type of Work Select Service			
Availability Time e.g., Mon-Fri 9AM-5PM		Service Area e.g., Downtown, North Side			
Hourly Rate (1)					
			Register		

Fig. 7. Worker Space

This page contains contact details to reach out to helping crew in case of any queries of conflicts.

೫ Crewmate		Ð	⊜ Home	岱 Services	% Contact	C+ Logou
	Contact Us					
	Get in Touch	Your Name				
	Have questions? We're here to help! Reach out to us through any of these channels.	Your Email				
	 € +91 9392969957 ☑ crewmate@gmail.com 	Your Message				
	Follow Us				4	
	0 in 🥲 🕅		Send Messag	e		

Fig. 8. Contact page

This website provides help with languages as well. According to your local language, you can select any language. This page is selected with telugu language.

유 Crewmate		•	ఉ హూమ	🕮 సేనలు	% సంప్రదంచంద	ව පතිමකුති
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Fig. 9. Contact page in Telugu

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R Crewmate						
	संपर्क करें	English (ଟିଏ) ୧୨୯୦/ସ	~			
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	ତ +91 9392969957 ସ crewmate@gmail.com	आपका संदेश				
	हमें फ़ॉलो करें 💿 🚂 📁 🥊		सं	देश भेजें		

Fig. 10. Contact page in Hindi

5. CONCLUSION AND FUTURE WORK

In this paper, we have discussed the development of Crew- Mate, an online platform designed to bridge the gap between workers and individuals seeking help with their daily tasks. CrewMate provides a simple, user-friendly interface that caters to both hirers and workers, making it easier for both parties to communicate, schedule, and complete tasks efficiently.

The platform features a recommendation system that helps hirers find skilled workers based on their needs, and it inte- grates secure payment methods to ensure smooth transactions and prevent conflicts. By offering both a Hirer Interface and a Worker Interface, CrewMate addresses the challenges faced by workers in getting fair compensation and offers a reliable service to those in need of assistance.

While CrewMate is designed to meet the current needs of workers and hirers, there is still much room for growth and improvement. Future work on the platform will focus on the following areas:

1) Expansion of Worker Recommendation System:: Improv- ing the recommendation algorithm by incorporating machine learning techniques that analyze past interactions and user feedback will help provide more accurate matches between hirers and taskers, enhancing the quality of service.

2) Mobile App Development:: Currently, CrewMate is ac- cessible via the web, but to reach a wider audience, the development of mobile applications for iOS and Android will be a key next step. This will allow users to access the platform on the go, improving convenience for both hirers and workers.

3) User Ratings and Reviews:: To further improve trust and accountability, adding a rating and review system for both hirers and workers can provide transparency and build confidence among users.

4) Geolocation and Task Optimization:: Integrating ge- olocation features to match hirers with nearby workers and optimize the time and cost involved in task completion could enhance the platform's efficiency.

5) Expansion to Other Markets:: Initially focused on local workers, CrewMate could be expanded to serve broader geo- graphical regions, including international markets, to provide services on a larger scale.



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REFERENCES

- 1. KDD '18: Proceedings of the 24th ACM SIGKDD International Con- ference on Knowledge Discovery and Data Mining Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, https://doi.org/10.1145/3219819.3220056.
- Christopher T. Stanton, Catherine Thomas, Landing the First Job: The Value of Intermediaries in Online Hiring, The Review of Eco- nomic Studies, Volume 83, Issue 2, April 2016, Pages 810–854, https://doi.org/10.1093/restud/rdv042
- 3. Working with an internet platform: facing old and new risks Stefano Caffio f3gl= iI: 11, 51, 2019
- 4. SAMP, the Simple Application Messaging Protocol: Letting applications talk toeach other M. B. Taylora, T. Bochb, J. Taylorc, 1 aH. H. Wills Physics Laboratory, University of Bristol, UKbCDS, Observatoire As- tronomique de Strasbourg, France Institute for Astronomy, Royal Obser- vatory, Blackford Hill, University of Edinburgh, UKarXiv:1501.01139v1 [astro-ph.IM] 6 Jan 2015
- 5. Sauro, H.M., Hucka, M., Finney, A., Wellock, C., Bolouri, H., Doyle, J., Kitano, H., 2003. Nextgeneration simulation tools: the Systems Biology Workbench and BioSPICE integration. OMICS 7,35572.
- Jonathan L. Herlocker, Joseph A. Konstan, and John T. Riedl. An empirical analysis of design choices in neighborhood-based collaborative filtering algorithms. Inf. Retr., 5(4):287–310, 2002. ISSN 1386-4564. doi:http://dx.doi.org/10.1023/A:1020443909834.
- Abhinandan S. Das, Mayur Datar, Ashutosh Garg, and Shyam Rajaram. Google news personalization: scalable online collaborative filtering. In WWW '07: Proceedings of the 16th international conference on World Wide Web, pages 271–280, New York, NY, USA, 2007. ACM. ISBN 978-1-59593-654-7. doi: http://doi.acm.org/10.1145/1242572.1242610.
- Recommendation systems: Principles, methods and evaluation F.O. Isinkaye a,*, Y.O. Folajimi b, B.A. Ojokoh c a Department of Mathemat- ical Science, Ekiti State University, Ado Ekiti, Nigeria b Department of Computer Science, University of Ibadan, Ibadan, Nigeria c Department of Computer Science, Federal University of Technology, Akure, Nigeria Received 13 March 2015; revised 8 June 2015; accepted 30 June 2015
- 9. Available online 20 August 2015
- 10. Hardavella G, Aamli-Gaagnat A, Saad N, et al. How to give and receive feedback effectively. Breathe 2017; 13: 327–333. International Social
- 11. Security Review 72 (3), 95-112, 2019
- 12. "Payment Methods For Consumer-to-Consumer Online Transactions," Akron Law Review: Vol. 35 : Iss. 1, Article 1. Available at: http://ideaexchange.uakron.edu/akronlawreview/vol35/iss1/1 79. Extrin- sic characteristics of various payment methods, including their effect on transaction-related risks, are discussed in Part V.B. infra.
- See generally Winn and Wright, supra note 37, § 7.04 (discussing DigiCash, First Virtual, and other early payment technologies); Jane Kaufman Winn, Clash of the Titans: Regulating the Competition between Established and Emerging Electronic Payment Systems, 14 BERKELEY TECH. L.J. 675, 691-95 (1999); Maggs, supra note 39,
- 14. at 759-63. Some of the new payment devices do not rely on the Internet at all, such as stored value cards, check-by-fax services, and 900-number telephone billing systems.
- 15. . PayPal, About Us, at http://www.paypal.com/cgi- bin/webscr?cmd=p/gen/about-outside (last



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visited March 30, 2001).

- 16. Matt Duffy, PayPal Secures 90 Million dollar, AuctionWatch.com (Mar. 7, 2001), http://www.auctionwatch.com/awdaily/dailynews/march01/1- 030701.html.
- 17. A "personal" account holder may receive up to 100 dollar in payments charged to other members' credit cards per month. PayPal, Fees for U.S. Accounts, at http://www.paypal.com/cgibin/ webscr?cmd=p/gen/fees- outside (last visited Apr. 4, 2001). PayPal's user agreement re- quires those who "use the Service for the purpose of conducting e-commerce on a regular basis" to obtain a "premier" or "busi- ness" account. PayPal, User Agreement for PayPal Service, § I(1), at http://www.paypal.com/cgi-bin/webscr?cmd=p/gen/terms-outside (last modified Apr. 19, 2001).
- Veeri, V. (2024). Performance Optimization Techniques in React Appli- cations: A Comprehensive Analysis. International Journal of Research in Computer Applications and Information Technology (IJRCAIT), 13(4).
- 19. Retrieved from https://ijrcait.com
- 20. Pati, S., Zaki, Y. (2025). Evaluating the Efficacy of Next.js: A Compar- ative Analysis with React.js on Performance, SEO, and Global Network Equity. Retrieved from https://academia.com
- 21. Kambhampati, V., Mohammed, N. H., Fard, A. M. (2024). Characterizing JavaScript Security Code Smells. arXiv. https://arxiv.org/abs/2411.19358
- 22. Kappagantula, A. (2024). The Evolution and Complex- ities of Asynchronous Programming in JavaScript: A Comprehensive Analysis. IJSRCSEIT, 24(6), 1221–1228. https://ijsrcseit.com/index.php/home/article/view/CSEIT241061221
- 23. Kesavan, R., Gay, D., Thevessen, D., Shah, J., Mohan, C. (2023). Fire- store: The NoSQL Serverless Database for the Application Developer. In IEEE 39th International Conference on Data Engineering (ICDE), 1234-1243. Retrieved from https://research.google.com
- 24. Semma, A. B., Ali, M., Saerozi, M., Mansur, M., Kusrini, K. (2021). Cloud Computing: Google Firebase Firestore Optimization Analysis. Indonesian Journal of Electrical Engineering and Computer Science, 23(3), 2200-2212. Retrieved from https://ijeecs.iaescore.com