e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:06/Issue:11/November-2024 Impact Factor- 8.187 www.irjmets.com

STUDENT COMMUNITY (FREELANCING)

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DOI: https://www.doi.org/10.56726/IRJMETS63605

ABSTRACT

In the present digital era, being skilled and updated on modern software development practices has become of crucial importance for software engineering graduates. Moreover, the freelancing industry has grown immensely in recent years, and individuals, more than ever before, are fascinated by the opportunities it offers and have greater assurance that it can be a successful and satisfying alternative to regular employment. Unlike others, in the case of software, industry is leading the education. This makes Software Engineering Education (SEE)additionally responsible for minimizing the gap between the skills of the graduating students and the skills needed by the employers out there. This study aims to dissect the software industry needs and trends related to the freelancing industry and to uncover suggestions for training in this dynamic field. The data was extracted through different freelancing platforms using the Scrapy framework of Python, and then LDA analysis was performed on the scraped data using Python to find the most trending topics in the SE field and better analyze the situation. Using LDA analysis, the dataset extracted at two distinct time periods is investigated to describe how the software industry changes from time to time. For validity, the updated data was scraped on runtime from freelancing application

Keywords: Scrapy, LDA Analysis, Freelancing, Python, Ratings, SEE.

I. INTRODUCTION

Over the past few decades, Software Engineering Education (SEE) has evolved with the objective of producing graduates equipped with the required skills for future jobs. The software engineering curriculum is designed by local bodies in compliance with international organizations, taking into account the integration of industry views. Nonetheless, meeting industrial demands remains a challenge for software engineering education. SE education provides students with essential programming knowledge to enable them to work with emerging technologies in industrial set tings. In this regard, SEE provides a longer-duration curriculum that uses a variety of courses to equip students with the abilities to solve real-world software problems. Despite this, it has become a challenge for software engineering education to prepare students to keep up with the rapidly changing needs of the industry. The advances in modern software development technologies created new platforms, development environments, programming languages, libraries, innovative software development methodologies, and specialized jobs, whereas the students are still engaged in a typ ical four-years software engineering degree program. This situation leads to a gap between the software industry and software engineering education. In broader terms, a gap means a mismatch between students' skills acquired during a degree program and what is being expected by industry.

II. LITERATURE SURVEY

Author	Title	Source	Finding
D. Akdur	Analysis of software engineering skills gap in the industry	ACM Trans. Comput. Educ.	Identifies the skills gap between industry and academia in software engineering.
D. Oguz and K. Oguz	Perspectives on the gap between the software industry and the software engineering education	IEEE Access	Examines the discrepancies between industry expectations and academic curricula.
C. Litecky, A. Aken, A. Ahmad, and H. J.	Mining for computing jobs	IEEE Softw.	Analyzes job postings to understand industry demands for software

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Nelson			engineering skills.
V. Garousi, G. Giray, E. Tuz¨ un, C. Catal, and M. Felderer	Aligning software engineering education with industrial needs: A meta-analysis	J. Syst. Softw.	Conducts a meta-analysis to identify common themes in the literature regarding the skills gap.
C. Scaffidi	Employers' needs for computer science, information technology, and software engineering skills among new graduates	Int. J. Comput. Sci. Eng. Inf. Technol.	Surveys employers to understand their expectations of new graduates.
V.P, P.Pinto, and R.D'Souza	Framework for identification of curriculum gaps: A systematic approach	J. Eng. Educ. Transfor.	Proposes a framework to identify gaps between industry needs and academic curricula.

RELATED WORK

1. Fateh Bahadur Kunwar, Giriraj soni, mohit jangid, veer Bhadra Singh rao in their work Job recommendation system for freelancer designed to optimize workforce placement and enhance organizational efficiency. By harnessing advanced algorithmic methods, this system offers a comprehensive platform for matching candidates with suitable job roles based on their skills, experience, and preferences. The system integrates various features, including personalized job recommendations tailored to individual profiles, interactive skill assessments to gauge candidate proficiency, and real-time job market analysis to identify emerging opportunities.
2. Labeeb Ahmed, Imran Khan, Naveen Singh, Himendra kumar in their work Developers Community-devcom, Devcom is an android application which aims to provide a platform for the technically skilled people to seek job opportunities while at the convenience of their homes. It also provides a platform for a layman to get computer science related tasks done easily. Our application not only caters to the needs of the qualified but also of that of the skilled. In this project we have tried to do something similar to this but in a very different and a very emerging field. We have also created a platform where customers can post their requirements which can be any computer science related task and freelancers can apply for the work depending on their skill set.

III. METHODOLOGY

We are using waterfall model for our project.

1. Requirement Gathering and Analysis: In this step of waterfall we identify whatare various requirements are need for our project such are software and hardware required, database, and interfaces.
2. System Design: In this system design phase we design the system which is easilyunderstood for end user i.e. user friendly. We design some UML diagrams and data flow diagram to understand the system flow and system module and sequence of execution.
3. Implementation: In implementation phase of our project we have implementedvarious module required of successfully getting expected outcome at the different module levels. With inputs from system design, the system is first developed in small programs called units, which are integrated in the next 10 phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.
4. Testing: The different test cases are performed to test whether the project module are giving expected outcome in assumed time. All the units developed in the implementation phase are integrated into a system after testing of is tested for any faults and failures.
5. Deployment of System: Once the functional and non-functional testing is done, the product is deployed in the customer environment or released into the market.
6. Maintenance: There are some issues which come up in the client environment.To fix those issues patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment. All these phases are cascaded to each other in which progress is seen as flowing steadily downwards like a waterfall through the phases. The next phase is started only

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after the defined set of goals are achieved for previous phase and it is signed off, so the name Waterfall Model. In this model phases do not overlap.

PROBLEM STATEMENT

Freelancing jobs present a unique set of challenges and opportunities. Freelancers often face unpredictable income streams due to fluctuating demand for their services, making it difficult to budget and plan for the future. Finding and retaining clients can be challenging, particularly for new freelancers without established networks or portfolios. Balancing multiple projects, deadlines, and client expectations can lead to time management issues, resulting in burnout or missed deadlines.

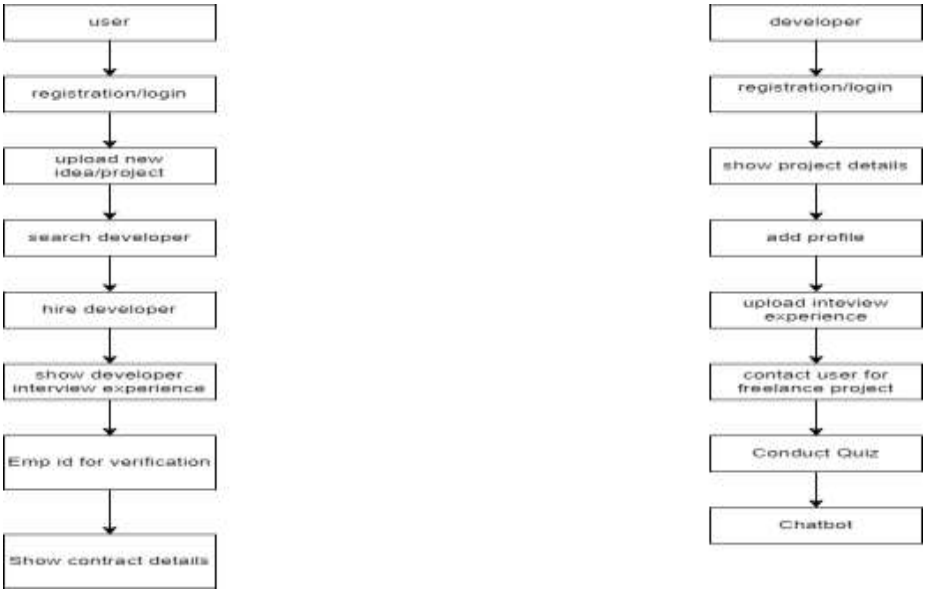
OBJECTIVES

- Flexibility and Autonomy Freelancers often seek the freedom to choose their working hours and locations, al lowing for a better work-life balance.
- Diverse Opportunities Freelancing allows individuals to work on a variety of projects across different in dustiest, which can enhance their skills and experience.
- Income Generation Freelancers aim to generate income by leveraging their skills and expertise, often setting their own rates and choosing how much work to take on.

IV. METHOD OF IMPLEMENTATION

1. Requirement Gathering and Analysis: In this step of waterfall we identify what are various requirements are need for our project such are software and hardware required, database, and interfaces.
2. System Design: In this system design phase we design the system which is easily understood for end user i.e. user friendly. We design some UML diagrams and data f low diagram to understand the system flow and system module and sequence of execution.
3. Implementation: In implementation phase of our project we have implemented various module required of successfully getting expected outcome at the different module levels. With inputs from system design, the system is first developed in small programs called units, which are integrated in the next 10 phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.
4. Testing: During the system development, the overall project is broken down into smaller, manageable parts called units. Each unit designs a small unit.
5. Deployment of System: This system means putting the financial work in our model and uses it in a proper way. This product is useful for users and developers.
6. Maintenance: In that model there are some is issues created. When customer start using the product. That time we have to provide updates.

SYSTEM ARCHITECTURE



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LIMITATION

Income Instability: Freelancers often face fluctuating income levels, making it difficult to predict earnings and plan for financial stability. Lack of Benefits: Freelancers typically do not receive benefits such as health insurance, retirement plans, or paid time off, which can lead to higher out-of pocket expenses. Client Dependence: The success of a freelancer often depends on finding and retaining clients, which can be challenging and time-consuming.

V. CONCLUSION

The study aims to identify and highlight the needs and challenges of the software industry, mainly the freelancing industry, and to uncover suggestions for training in this dynamic field through experimental investigation. Based on the findings of the study, important guidelines and commitments to SE education are proposed. The experiments were based on a semantic topic analysis of the SE job postings .

VI. REFERENCES

[1] D. Akdur, "Analysis of software engineering skills gap in the industry," ACM Trans. Comput. Educ., vol. 23, no. 1, pp. 1–28, Dec. 2022, doi: 10.1145/3567837

[2] D. Oguz and K. Oguz, "Perspectives on the gap between the software industry and the software engineering education," IEEE Access, vol. 7, pp. 117527–117543, 2019.

[3] C. Litecky, A. Aken, A. Ahmad, and H. J. Nelson, "Mining for com puting jobs," IEEE Softw., vol. 27, no. 1, pp. 78–85, Jan. 2010, doi: 10.1109/MS.2009.150.

[4] A. M. Moreno, M. I. Sanchez-Segura, F. Medina-Dominguez, and L. Carvajal, "Balancing software engineering education and industrial needs," J. Syst. Softw., vol. 85, no. 7, pp. 1607–1620, 2012

[5] V. Garousi, G. Giray, E. Tuz¨ un, C. Catal, and M. Felderer, "Aligning software¨ engineering education with industrial needs: A meta-analysis," J. Syst. Softw., vol. 156, pp. 65–83, Oct. 2019.

[6] C.Scaffidi,"Employers' needs for computer science, information technology and software engineering skills among new graduates," Int. J. Comput. Sci. Eng. Inf. Technol., vol. 8, no. 1, pp. 1–12, Feb. 2018, doi: 10.5121/ijc seit.2018.8101.

[7] F. Gurcan and C. K¨ ose, "Analysis of software engineering industry needs and¨ trends: Implications for education," Int. J. Eng. Educ., vol. 33, no. 4, pp. 1361–1368, Jan. 2017. Accessed: Aug. 9, 2020.

[8] V.P, P. Pinto, and R. D'Souza, "Frame work for identification of curriculum gaps: A systematic approach," J. Eng. Educ. Transfor., vol. 35, no. S1, pp. 61–68, Jan.2022,
doi:10.16920/jeet/2022/v35is1/22009

[9] J. Conde, S. Lopez-Pernas, A. Pozo, A. Munoz-Arcentales, G. Huecas, and´ A.´ Alonso, "Bridging the gap between academia and industry through students' contributions to the FIWARE European open-source initiative: A pilot study," Electronics, vol. 10, no. 13, p. 1523, Jun. 2021,
doi: 10.3390/electronics10131523.