Applied Database Technology

Project Proposal

DevPath Insight: A Stack Overflow Data-Driven Career Tool

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Team Name: Group 2

Project Summary:

In today's dynamic tech landscape, the Developer Career Insight Tool emerges as a pivotal resource for developers eager to advance their careers through informed decisions. Built on the extensive dataset from the Stack Overflow 2023 Survey, which compiles insights from over 90,000 developers, this database-driven web application is ingeniously crafted to offer personalized career insights. It encourages users to navigate their professional journey by allowing them to input their educational background, work experience, and technical skills to receive tailored advice, including an estimated salary for their desired role. This tool is much more than just a salary estimator. It meticulously analyzes survey data to identify the skills users need to improve, providing them with a personalized plan that keeps pace with changes in the developer job market.

More than helping in career growth, this tool also serves as a learning platform. It promotes ongoing personal and professional development by pinpointing areas for improvement and providing salary estimates based on real-world data. Through a detailed analysis of Stack Overflow survey data, the Developer Career Insight Tool becomes an indispensable support for developers. It assists them in navigating the complexities of the tech job market and aligning their career strategies with both current trends and future projections. Essentially, the tool not only forecasts salary expectations and identifies skill gaps but also guides developers toward strategic decisions that enhance their career trajectories in the rapidly evolving tech industry.

Project Description

Objective:

The primary goal of the Developer Career Insight Tool is to furnish individualized career guidance to users by utilizing data from the Stack Overflow 2023 Survey. It aims to assist users in comprehending the potential salary range for their preferred job roles and recognizing any disparities in skills between their current expertise and their desired job positions.

Therefore, the tool empowers developers to make informed decisions about their career paths and professional development strategies.

Usefulness:

The database-driven web application will be very helpful to developers seeking career advice and advancement. The application offers accurate and current information about salary expectations and skill requirements in the IT sector by utilizing data from the Stack Overflow Survey. Through an interactive interface, users can input their education, job history, and skill set to receive personalized insights that can aid in making well-informed professional choices.

The Developer Career Insight Tool is unique in its focus on providing tailored career insights for developers, setting it apart from other databases or tools that might be comparable. Unlike generic career advising platforms, this application uses industry-specific data from the Stack Overflow survey and is specifically designed for developers. Moreover, the tool's emphasis on skill gap analysis offers users actionable advice for enhancing their qualifications and successfully advancing their careers.

The primary demographic for the database application encompasses developers at different points in their careers, ranging from students and novice developers to seasoned professionals pursuing progression prospects. Moreover, recruiters and hiring managers may also find the tool beneficial for assessing candidates' credentials and salary projections

Dataset:

We chose our dataset from the Stack Overflow 2023 Developer Survey dataset, which consists of 89184 entries with 84 columns. It covers a wide range of information from basic demographics like age and country of residence to more detailed professional aspects such as employment status, remote work preferences, development activities, education level, coding experience, and desired technologies to work with.

The survey questions of this dataset include:

1. Basic Information
2. Education, Work, and Career
3. Technology and Tech Culture
4. Stack Overflow Usage + Community
5. Artificial Intelligence
6. Professional Developer Series (Optional)
7. Final Questions

This survey encompasses a broad range of questions designed to gain insights into the experiences, preferences, and opinions of software developers and coding professionals. The survey is organized into seven main sections that address basic information about respondents, their education, work and career, technology and tech culture, usage and views on Stack Overflow and its community, attitudes, and uses of artificial intelligence, and a series of final questions to gather feedback on the survey itself. Additionally, it includes an optional Professional Developer Series focused on productivity and learning opportunities in the workplace. The survey is structured to cover a comprehensive set of topics relevant to the developer community.
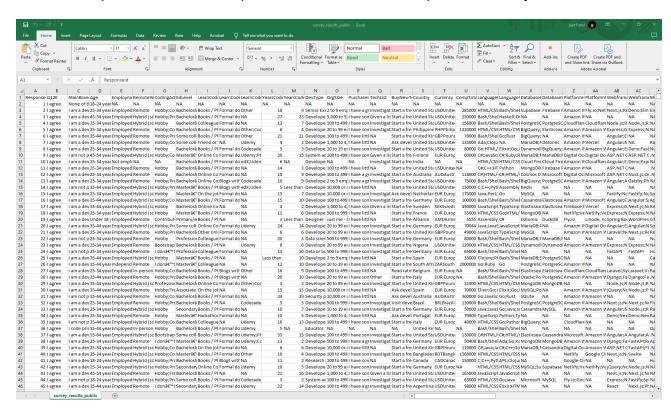

Image 1: Sample of the raw dataset

Dataset link - https://insights.stackoverflow.com/survey

Sharing:

We will utilize a GitHub repository and Google Docs for code and technical documents. The GitHub repository will organize our works, enabling version control and collaboration, while Google Docs will facilitate real-time editing and sharing of project proposals and notes.

Github: https://github.iu.edu/patejeet/ADT-Project-DevPath-Insight

Group Contribution

Name	Tasks	Average Time Spent (per milestone)
Minju Kim	- Project Ideation and Tool Utilization - Project Research Work - Dataset Shortlisting - Drafting Project Proposal	4 hours
Jeet Rakesh Patel	- Project Ideation and Tool Utilization - Project Research Work - Dataset Shortlisting - Drafting Project Proposal	4 hours
FNU Aditi	- Project Ideation and Tool Utilization - Project Research Work - Dataset Shortlisting - Drafting Project Proposal	4 hours