Cloud Native Development with Kubernetes Workshop

Project Proposal
By MTAPizza

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Sympoll

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Project Track

Entrepreneurial

Sympoll

1. Background

Sympoll is an online surveying platform engineered for optimal scalability through the utilisation of Kubernetes' advantages. The concept arose from challenges encountered while attempting to leverage the "surveys" feature on WhatsApp, where the effectiveness of surveys was consistently compromised by competing conversations within the group. This resulted in unsuccessful endeavours to gather comprehensive feedback from all group members.

2. What is the problem you are trying to solve?

Today, there is no all-encompassing solution for a surveying platform, leaving individuals with disparate methods for various survey needs. Whether it's voting for the local council, suggesting a surprise party idea for friends on a WhatsApp group, or conducting an academic survey through a shared Google Forms page, each scenario requires a distinct approach. Our platform aims to address this fragmentation by providing a comprehensive solution, enabling users to conduct and participate in surveys seamlessly across their diverse social circles.

3. Describe briefly, in high level your presumed solution

Solution Overview:
Our application shines a spotlight on polling, aiming to deliver a comprehensive polling system featuring a hierarchical structure and multiple groups. Within these groups, users can take on roles ranging from simple voters to key figures with the authority to create polls, possess votes of greater significance, and even exercise veto power over decisions.

Implementation Highlights:
Our software comprises a web client for user interaction, along with multiple servers dedicated to handling authentication, databases, and logic. Emphasising high scalability, the system effortlessly adapts to accommodate new features and efficiently manages heavier user workloads. Leveraging Kubernetes' self-healing and rolling updates features ensures high availability, while deployment on a cloud computing platform adds flexibility to resource utilisation.

In summary, our application not only prioritises an enriched polling experience but also demonstrates adaptability, scalability, and resilience through its thoughtfully designed architecture and deployment strategies.

4. Who are the expected users of the application?

Our surveying platform is designed for a diverse audience, ranging from neighbours making decisions on HOA matters, friends coordinating events and outings, to students conducting research, and corporate leaders seeking valuable feedback. We aim to streamline the surveying process across various social circles, ensuring accessibility for everyone, whether you're a community organiser, a social planner, a student, or simply someone gathering opinions from friends. Our objective is to provide a user-friendly platform that meets your survey needs, regardless of the specific context.

5. What will be the main features and flows of the (different) user(s)?

Key Features:

- High Availability
- High Scalability
- Polling System
- Archive for Polls
- Notifications
- User Profiles
- Public and Private Group Functionality

Optional Features:

- Advanced Security Measures (HTTPS and Reverse Proxy Configuration)
- Integrated Chat
- Statistical Insights
- Customizable Website Themes
- Poll Observers (Users with viewing privileges but without voting rights)

User Roles:

- Average User: Regular member with a single voting weight.
- Role-Endowed User: Ordinary member granted a role, enhancing their voting weight.
- Moderator: Group member with specific admin-assigned permissions, including user management and role assignments.
- Group Leader (Admin): Possesses full group control, with capabilities such as closing the group, modifying moderator permissions, and initiating polls.

User Status:

The status of an average user varies based on their group affiliation. For instance, a minister may serve as a regular member in their daughter's kindergarten group while holding a leadership role in their workplace. This dynamic status reflects the diverse roles users can embody within different groups.

6. Tech stack

The technology stack for the project, designed for Kubernetes and built on a microservices architecture, is expected to be extensive and subject to potential changes.

7. Submission Details

GitHub Link:
https://github.com/Ronenii/Sympoll

Workshop Website Registration Link:
[Provide the link to the project registration on the workshop website]