Ping IDE

Specifications

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1 Introduction

1.1 Purpose

The purpose of this specification document is to provide a detailed outline of the Ping IDE project. Ping IDE is an integrated development environment (IDE) specifically designed for Tiger and Java programming languages. This document serves as a comprehensive guide for the development team and stakeholders of the client company that intends to utilize Ping IDE as a specialized IDE for internal use. It provides a clear overview of the objectives, features, technical specifications, and implementation details of the Ping IDE.

1.2 Background

In today's dynamic business landscape, software development plays a pivotal role in meeting the evolving needs of organizations. Our client company recognizes the significance of efficient and productive software development practices and has identified the need for a specialized IDE tailored to Tiger and Java programming languages. The Ping IDE project was initiated to address this requirement and empower the client company's developers with a robust development environment.

1.3 Objective

The primary objective of the Ping IDE project is to deliver an advanced development environment that caters to the unique demands of Tiger and Java programming languages. By leveraging specialized features and functionalities, Ping IDE aims to enhance the coding experience, streamline development workflows, and boost productivity within the client company's internal development teams. This document outlines the main goals and objectives that the Ping IDE project aims to achieve.

By establishing a clear purpose, providing relevant background information, outlining objectives, and identifying the target audience, this introduction sets the stage for the subsequent sections of the specification document. The following sections will delve into the technical specifications, features, and implementation details of the Ping IDE, enabling the development team and stakeholders to align their efforts and successfully implement the specialized IDE within the client company's internal development processes.

2 Technical Specifications

2.1 Development of the IDE

The IDE is developed using Dart language and Flutter framework. The development team is using Git as a Version Control System.

2.2 Supported Operating Systems

The Ping IDE will be compatible with the following operating systems:

- NixOS
- ArchLinux
- Windows
- MacOS

2.3 Supported Programming Languages

The Ping IDE will support the following programming languages:

- Java
- Tiger

2.4 Performance Requirements

The Ping IDE aims to deliver an optimal performance experience to ensure developer productivity. The following performance requirements will be targeted:

- **Responsiveness**: The IDE should exhibit minimal lag and provide a smooth and responsive user interface to support efficient coding and navigation.
- **Memory Usage**: The IDE should employ efficient memory management techniques to minimize memory usage and avoid excessive resource consumption.

3 Submission of the IDE

3.1 Submission Date

The project will be submitted on the 6th of July 2023.

3.2 Submission Format

The project will be delivered in a single tar archive. It will contain this document, a user guide, and everything needed to run the IDE.

4 Features

In this section, we are defining the different features that will be implemented in the Ping IDE. Their purpose and the expected outcome are also described.

4.1 File Editing

Description: The Ping IDE will provide robust file editing capabilities, allowing developers to create, modify, and save their code files.

Purpose: To enable developers to seamlessly edit their code and manage their project files within the IDE.

Expected Outcome: Developers will be able to edit and save files directly in the IDE.

4.2 Code Execution

Description: The Ping IDE will allow developers to execute their code within the IDE environment, providing a seamless and convenient way to develop their application.

Purpose: To enable developers to quickly run and test their code, ensuring its functionality and identifying any issues or errors.

Expected Outcome: Developers will be able to execute their code directly within the Ping IDE. A sound will be played during the compilation according to whether it is a Tiger or a Java project.

Implementation Details: The user will be asked for a Tiger compiler path, that he can provide. The IDE can use that provided compiler or use a remote one. The remote one will need a connection to the network.

4.3 Syntax Highlighting

Description: Syntax highlighting enhances code readability by applying distinct colors and styles to different elements of the code, such as keywords, variables, and comments.

Purpose: To improve code comprehension and make it easier for developers to identify and differentiate code elements.

Expected Outcome: The Ping IDE will visually highlight code syntax based on language-specific rules, making it more readable and intuitive for developers.

4.4 Auto-completion

Description: Auto-completion assists developers by suggesting and automatically completing methods, variables, and other language-specific constructs.

Purpose: To expedite the coding process, reduce errors, and increase productivity by providing intelligent suggestions and auto-completion options.

Expected Outcome: The Ping IDE will offer smart code completion capabilities that dynamically analyze the context and provide relevant suggestions, helping developers write code faster and with accuracy.

4.5 Theme Selection

Description: The Ping IDE will offer a theme selection feature that allows developers to customize the visual appearance of the IDE.

Purpose: To provide a personalized and visually appealing coding environment that aligns with the developer's preferences.

Expected Outcome: Developers can choose from different themes, including Tiger, Java, and Fusion, to create a customized look and feel for their IDE. The overall look of the IDE will be changed as well as the colors used for the syntax highlighting.

4.5.1 Themes Details

Tigrou Theme: The Tigrou theme will apply a Tiger background, orange and black color schemes, and suitable font styles throughout the IDE's interface. This theme aims to create a visually appealing environment for developers working on Tiger programming projects.

Java Theme: The Java theme will incorporate a coffee background. The color palette will consist of shades of orange, red, and blue to complement the coffee theme. This theme aims to create a visually appealing and cohesive environment for developers working on Java projects.

Fusion Theme: The Fusion theme will showcase Tigrou enjoying a cup of coffee as the background image. The color palette will combine elements from both the Tiger and Java themes, incorporating orange, black, red, blue, and other complementary colors. This theme aims to create a visually captivating and harmonious environment for developers who want a fusion of both themes.

4.6 Split Window

Description: The Ping IDE will support a split window functionality, allowing developers to view and edit multiple files simultaneously.

Purpose: To facilitate multitasking and ease code comparison between different files within the IDE.

Expected Outcome: Developers will have the flexibility to split the IDE's interface into multiple resizable windows, enabling efficient code editing and navigation across different files.

5 Bibliography

- Git Documentation: https://git-scm.com/docs
- Dart Documentation : https://dart.dev/guides
- Flutter Documentation : https://docs.flutter.dev/