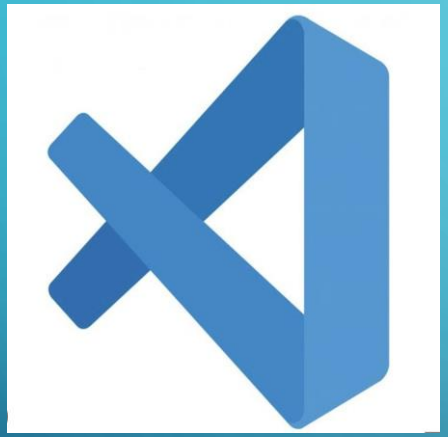
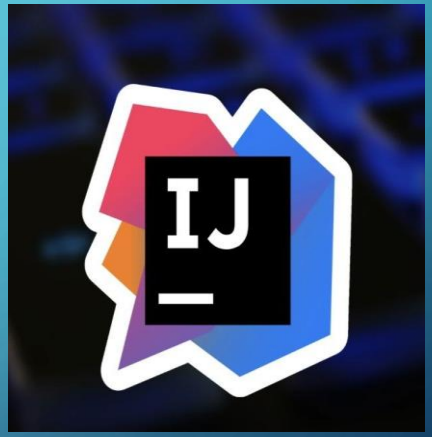
CS 520
FINAL PROJECT PRESENTATION
TOOLS COMPARISON





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THE PROBLEM

The purpose of this evaluation is to map out the needs of developers as users and the IDE characteristics they prioritize to better understand how the best performing IDE can be chosen for a set of unique design criteria and quality factors of one's application.

Tools compared (IDEs) :

Visual Studio code

IntelliJ

PROJECT DESIGN

Established a two-fold evaluation of the two IDE tools where we first manually compared every evaluation criteria defined for the project and then executed practical real-time evaluation by developing code that covers majority of the functionalities provided in the two tools.

Statistical analysis was then carried out based on ease of use, convenience and quality of the functionalities through latencies measured, manual quality testing and peoples' survey.

The Evaluation

Considering around 15-20 salient comparison parameters under the three categories of evaluation i.e. Process evaluation, Outcome & Impact evaluation, and continuous Performance monitoring.

Select the metric being evaluated

→

Apply the various use cases on both the IDEs w.r.t the metric for manual review of the tool

→

Document the resultant individual performance of the IDE and any significant gaps if found w.r.t the metric

EVALUATION METRICS

01 Price: Both IDEs available to users in a variety of options based on the subscription model

02 Specs Requirement: IntelliJ emphasizes language richness, extensive tooling. VSCode focuses on versatility, lightweightness, and a vast extension ecosystem.

03 Version Control: IntelliJ - Robust Git integration, advanced conflict resolution.
VSCode - Lightweight Git support, customizable interface.

04 Aesthetics: IntelliJ: Polished and professional UI design.
VSCode: Sleek and modern UI with customizable themes.

05 Language Independency: IntelliJ - Strong support for a wide range of programming languages. VSCode - Highly versatile and language-independent code editor

METRICS EVALUATED ON THE DEVELOPED CODE

01 Extensibility: VS Code has vast extension marketplace and broader language support and IntelliJ IDEA offers deep integration, specialized tooling, and exceptional performance.

02 Version Control: VS Code offers basic version control functionality via extensions & IntelliJ provides comprehensive built-in version control features with branch management, code merging & conflict resolution.

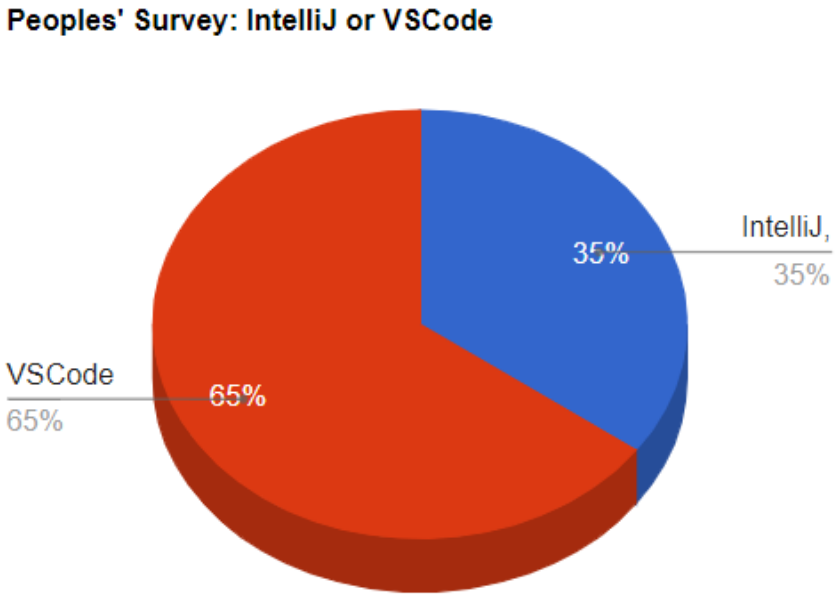
03 Build Automation: VS Code relies on external build systems & extensions for build automation & IntelliJ IDEA provides robust built-in support for Gradle & Maven, with advanced features like automatic build configuration & dependency management.

04 Debugger : VS Code provides a solid integrated debugger supporting many languages & IntelliJ IDEA offers advanced & seamless debugging experience with extensive tools, breakpoints & code analysis.

THE GENERAL CHOICE OF DEVELOPERS

WHAT DO DEVELOPERS WANT?

Carried out a small-scale peoples' survey where 53 students from Umass Amherst were asked about their preference between IntelliJ and VSCode.
VSCode came out to be the preferred choice if no other conditions were put to affect the decision.



Conclusion

IntelliJ: Comprehensive development environment with deep language integration and advanced tools.

VSCode: lightweight code editing experience with extensive customization options through its rich extension marketplace.

Choose IntelliJ for robust features and language-specific development, while VSCode excels in flexibility and adaptability.

Tasks Accomplished After Mid-Point

Week 01: Conduct background research on Visual Studio Code and IntelliJ IDEA, progressed on evaluation criterions.

Contribution - Venkata Samyukta, Mohini Jain, Christopher Gomez, Ran He

Week 02: Developed code and executed comparison during development

Contribution - Venkata Samyukta, Mohini Jain, Christopher Gomez, Ran He

Week 03-04: Analyzed results and prepared for Peoples' Survey.

Contribution - Venkata Samyukta, Mohini Jain, Christopher Gomez, Ran He

Week 04-05: Progressed on and completed final project deliverables

IDE. Contribution - Venkata Samyukta, Mohini Jain, Christopher Gomez, Ran He

Link to Git Repository: https://github.com/vmalapaka/520_Project.git