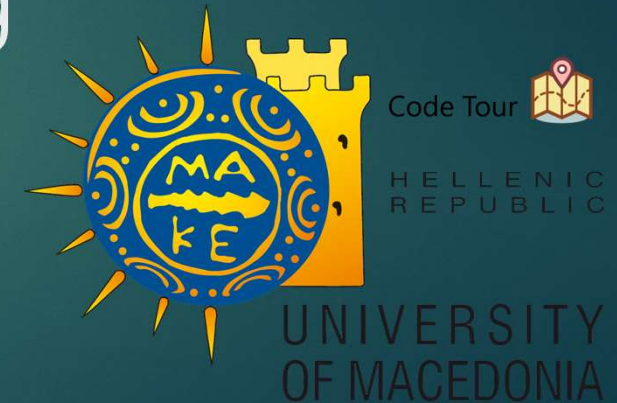


Personalized Developer Navigation in Software Projects Aiming at Comprehensibility Improvement and Faster Project Onboarding

Eleftherios Chrysochoidis
MSc Thesis
mai21066



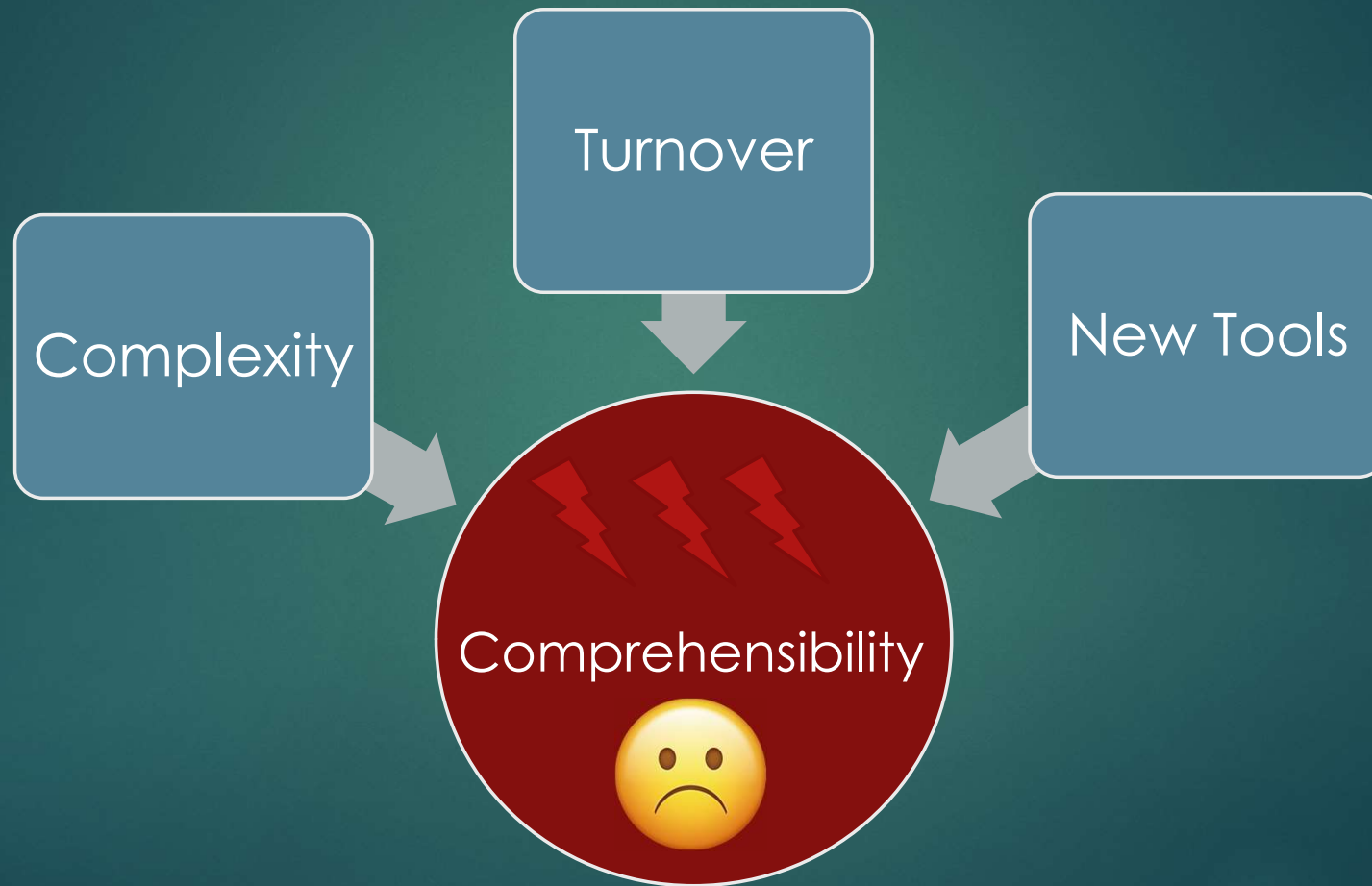
Agenda

2

- ▶ Topic Overview
- ▶ Research & Survey
- ▶ CodeTour Plugin
- ▶ Demonstration
- ▶ Future Work

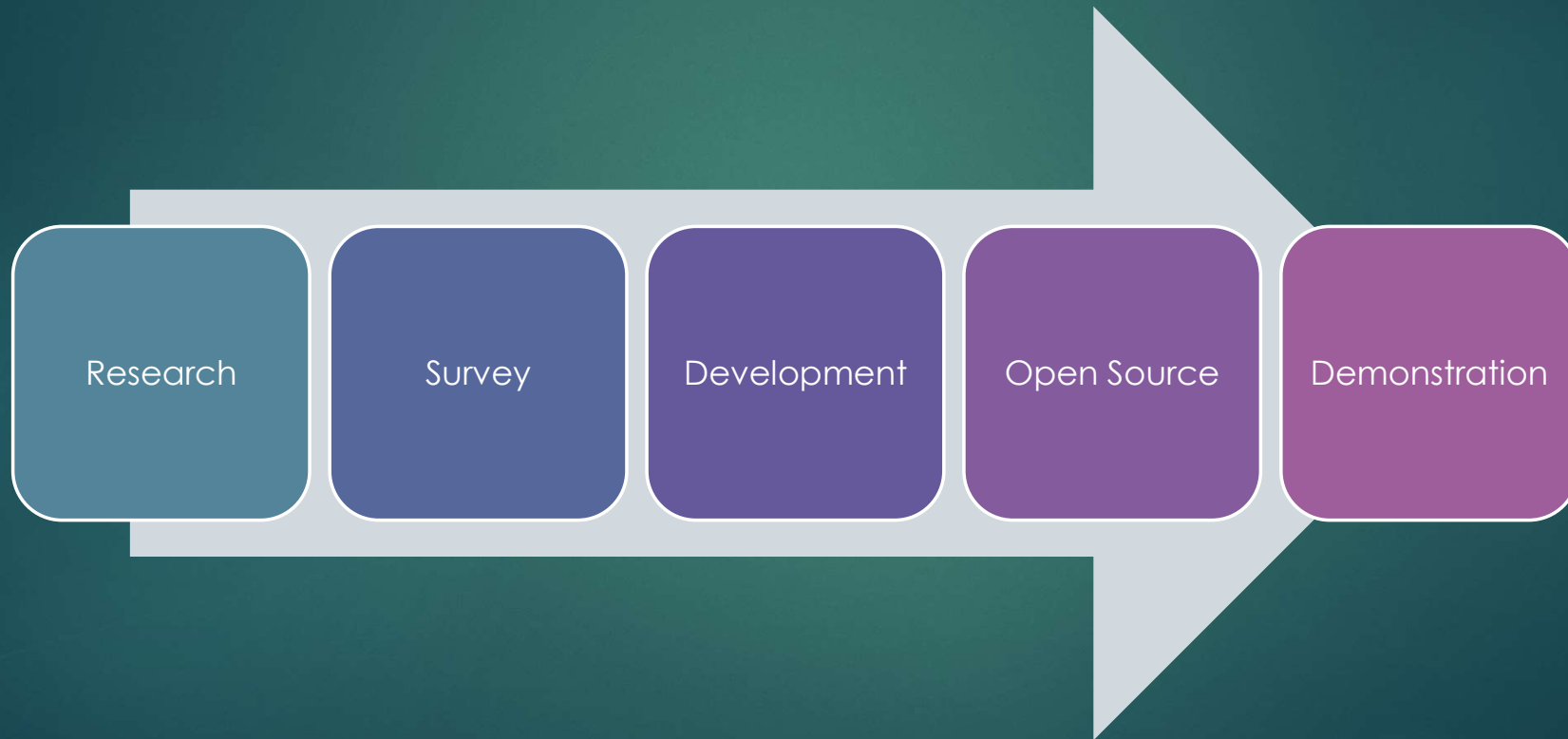
Topic Overview

3



Thesis Stages

4



Bonus: Speaker!

5

DEVELOPERWEEK. FEBRUARY 7-9, 2022
VIRTUAL


ProductWorld • CloudWorld



Eleftherios Chrysochoidis
Accenture
Software Development Specialist

📍 OPEN Expo Skills Stage

🏷️ COMMUNITY PARTNER SUMMIT OPEN TALKS

 **Eleftherios Chrysochoidis**
Accenture, Software Development Specialist

In our days, the demand for developers is increasing with more and more companies looking to hire new developers to join their projects. Sometimes this "joining" is painful, and leads to huge costs for companies, as adapting and understanding a project is not an easy thing.

Are companies aware of that cost? What can a developer do for that? Are there any best practices?

We are going to explore some best practices from 2 main aspects: a) Project Management i.e. making a Software more comprehensible and easy to understand during the whole development process and b) From-zero-to-hero i.e. exploring a whole new project relying only on any existing documentation for example on open source projects, or any legacy project (either for maintenance or for incubation)

Research & Survey

6



codetour | Code Reading Challenges & Best Practices

Default Report

Explore the data behind your survey responses. Gain a better perspective of your survey data and uncover insights for further planning.

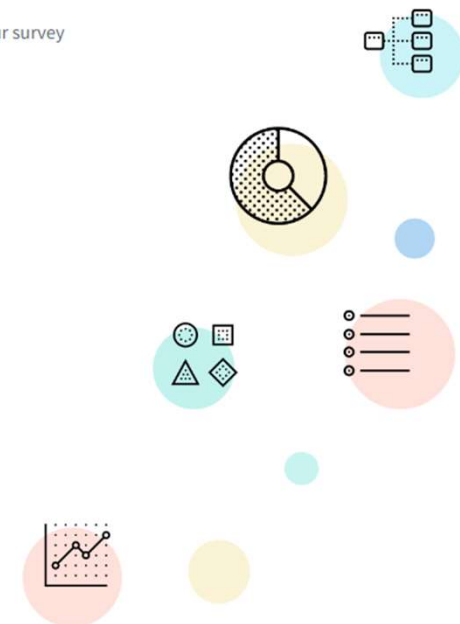
Visited
279

Started
81

Avg. Time to Complete
9m

Completed
81

Completion Rate
100.00%



Code Reading Challenges

7



Poor/Outdated Docs and training

Lack of time for one-to-one (but is always preferred)

New Technologies

Lack of Cognitive (Soft) Skills

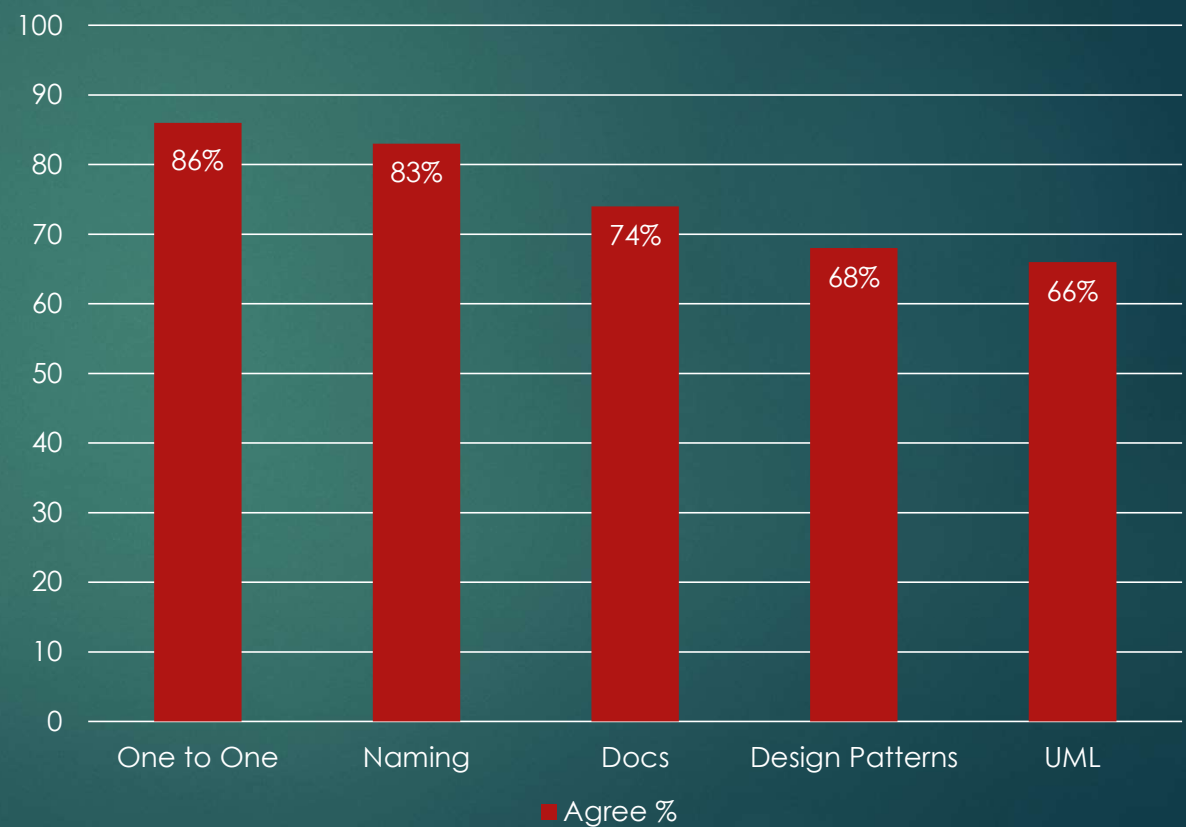
Absence of original authors

Survey Results – Dev Preferences

8

- ▶ One-to-one is preferred – 86%
- ▶ Consistent Naming, Structure – 83%
- ▶ Code Documentation (inline or external) – 74%
- ▶ Design Patterns – 68%
- ▶ UML – 66% (usage 23%)

Developers Tendencies



“

CodeTour



The Enhanced Onboarding Experience

”

A Plugin to effectively onboard to a new project and more...

CodeTour Plugin

10

Benefits

- ▶ Virtual Interactive Guide
- ▶ Onboarding Assistance
- ▶ Feature Execution Paths

Challenges

- ▶ Needs implementation
- ▶ Maintenance

Availability

- JetBrains [CodeTour - IntelliJ IDEs Plugin Marketplace](#) ©Chrysochoidis E.
- VS Code [CodeTour - Visual Studio Marketplace](#) ©Jonathan Carter

Demonstration

11

The screenshot displays the 'myCompany CRM' dashboard. At the top left, the text 'myCompany CRM' is visible. On the top right, there are three icons: a location pin, a GitHub logo, and a 'Sign out' button. The main content area features a large heading 'Welcome to myCompany CRM' with a hand icon. Below this is a subtitle 'Demonstration project for CodeTour' flanked by crossed wrench and screwdriver icons. A section titled 'Available Features' with a hand icon contains a blue button labeled 'Got to Employees Management Page'. Below this is a card for the 'CodeTour' plugin, which includes a map icon, the name 'CodeTour', a 4.5-star rating, a description stating it is an IntelliJ plugin for recording and playing back guided walkthroughs, and a button to 'Install to IntelliJ IDEA 2021.3.2'. The card also shows '60 downloads' and 'Free'.

myCompany CRM


📍 GitHub Sign out

👋 Welcome to myCompany CRM

🔧 Demonstration project for CodeTour 🔧

👉 Available Features

[Got to Employees Management Page](#)

 CodeTour ★★★★☆

CodeTour is an IntelliJ plugin, which allows you to record and play back guided walkthroughs of your codebases.

60 downloads Free

[Install to IntelliJ IDEA 2021.3.2](#)

Future Work

12

- ▶ Community driven features
- ▶ Automatic healing of broken Tours
- ▶ Use cases on demo project for CodeTour evaluation and feedback
- ▶ Type of Tours that professional developers may create and the maintenance overhead they add
- ▶ Experiments with Eye-tracking devices to study code navigation patterns on project onboarding

Resources

13

- ▶ Thesis Document: [Thesis Document - LefterisXris/CodeTour Wiki](#)
- ▶ Thesis Presentation: [Thesis Presentation - LefterisXris/CodeTour Wiki](#)
- ▶ CodeTour Github repo: [LefterisXris/CodeTour: IntelliJ Plugin - MSc Thesis](#)
- ▶ CodeTour JetBrains Marketplace: [CodeTour - IntelliJ IDEs Plugin | Marketplace](#)
- ▶ Survey Questions: [Code Reading Challenges & Best Practices](#)
- ▶ Survey Questions with Results: [Results Code Reading Challenges & Best Practices](#)
- ▶ DeveloperWeek 2022 Session Card [Eleftherios Chrysochoidis from Accenture at DeveloperWeek 2022](#)

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