Technical Report - **Product specification**

KeyUsageProfiler

Course:	IES - Introdução à Engenharia de Software
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Project abstract:	Monitoring of key stroke presses and gathering of statistics around them

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1 Introduction

Within the scope of the IES course this project assignment has 3 main objectives:

- Development of a Product Specification – From the analysis of usage scenarios formulate user stories that encapsulate the software's functionalities from an end-user perspective and build a corresponding technical design;
- Propose, justify, and implement a software architecture, based on enterprise frameworks. The software architecture solution must be aligned with the project's objectives and the key requirements;
- Apply collaborative work practices, both in code development and agile project management. More specifically, we'll use git as a version control system and github as a code repository with project management features like issue tracking and project boards.

2 Product concept

Vision statement

Our project focuses on developing a keylogger that tracks the inputs of various keyboards and stores usage data for each user. This data is given to the user through a webpage according to the user 's authorization. If the user is a team leader, he will have access to all the team members' information. However, each team member will only have access to self-related data and a leaderboards table if the team leader decides so.

This system was idealized mainly to help users obtain statistics about their typing data, which can be done as a self-evaluation, comparison between peers or as a monitorization tool for a manager in a company. The last one is more business oriented, allowing a visualization of workers' performance.

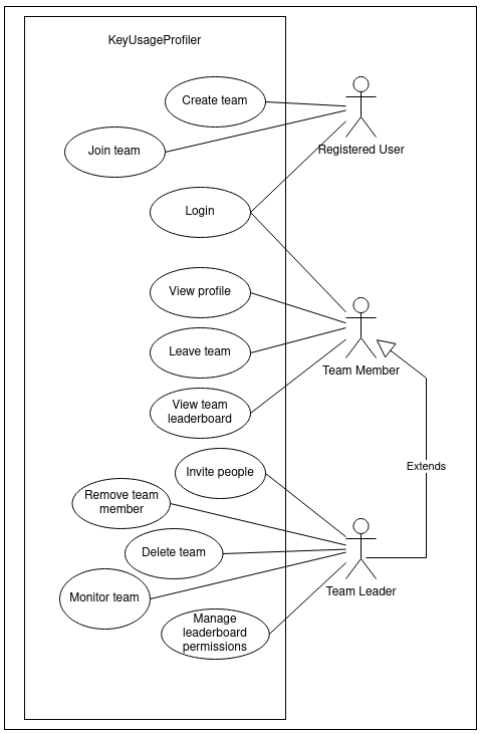

Image 1 - Use Case Diagram

Personas

Persona 1 – Edward: a 51-year-old, male, development team leader and SCRUM master.

- **Motivation:** Wants to get a general and detailed view of the developers' performance in his team.
- **Requires** a service that gathers and presents relevant information about his overall team and each member when it comes to coding time per workday.

Persona 2 – Emily: a 23-year-old, female, university student

- **Motivation:** Wants to compare her typing skills with her friends and compete with them.
- **Requires** a service that collects the typing data while she writes her essays and summarizes it while also allowing for a competitive view between the people in her friends group.

Scenarios

Scenario 1

Edward has been noticing a decline in productivity in his team members and wants to monitor their productivity. So, in KeyUsageProfiler, he creates an account and subsequently a team, and invites his colleagues to the team to see keypress statistics.

Scenario 2

Edward has been paying attention to key stroke statistics using KeyUsageProfiler, and noticed a certain team member has been slacking, so he enters his profile and checks his keypress heatmap to check for certain patterns.

Scenario 3

Emily is focusing on competing with her friends to see who has the fastest typing speed. To do that, she receives an invite link for a team in KeyUsageProfiler from one of her friends. Then she will install the program and run it with her credentials. After that, on the website, she logs in and will regularly check the leaderboards to see who is on top.

Scenario 4

Edward divided the team and distributed the tasks for the day. To guarantee that each group progresses at the same rate he watches each group's statistics separately. Then he can allocate new members to the group that's underperforming.

Scenario 5

Edward's has not been able to meet the last sprint deadline. Because of that he decided to closely track each member to see what they are up to. Following that, he discovered that one of the members has been gaming instead of coding.

Scenario 6

Edward is responsible for assuring that new members of a team can set up their environment to start development. With that in mind he checks for team members that use the same IDE as the new member and asks those members to help the newcomers with the setup process.

Scenario 7

Edward fired one member of its team to cut costs. Now that he doesn't need to monitor him, he can remove that member from the team.

Product requirements (User stories)

User authentication:

- User login
- User Registration

Team Management:

- Create Team
- Invite Team Members
- Become part of a Team
- Remove team member from team
- Leave current Team
- Delete Team

Statistics gathering and presentation:

- Key Heatmap
- User Profile Statistics
- Activity Analysis
- Live Virtual Keyboard
- Estimation of IDE or editor
- Leaderboards
- Leaderboard Permissions
- Homepage Members Selection
- Reset Team Statistics
- Reset Statistics Periodically