

Take the Stairs to Improve Your Fitness – A Project for Developing a Stair Test Mobile Application for Monitoring Fitness

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The purpose of this project is to develop a mobile application that provides users with a tool to monitor their aerobic fitness level and its development using a simple sub-maximal fitness test done on publicly available staircases. The societal goal of the project is to improve the fitness of citizens who are in poor physical condition, thereby improving the ability for physical activity. The stair test application aims to direct users' attention to their own physical fitness, which is a prerequisite for managing daily activities and thus sets limits on increasing physical activity. Integrated fitness tests have been developed before but have required a lot of time and initiative from the user, and do not allow automatic monitoring of fitness levels or digital documentation of results. In addition to measuring fitness, the stair test application can send encouraging reminders to the user to repeat the stair test at regular intervals.

The test algorithm and mobile application are developed at the University of Jyväskylä using the Research for JYU mobile application platform. Performing the fitness test takes only a few minutes, and the performance data is collected anonymously, utilising artificial intelligence and automation. Users receive their results and feedback immediately after the test. The application is pilot tested during the summer 2025 in Jyväskylä using four public staircases users may choose from. The aim of the pilot test was to investigate a) Does the physical fitness of the application users improve during the monitoring period? b) What types of users adopt the application and use it regularly? c) Which test environments best reach the target group? and d) How do users' physical activity level and exercise self-efficacy change during the test period? After pilot testing the target is to extend the test locations to other cities in Finland and potentially in Europe.

The expected impact of the project is to offer citizens an easy way to receive more information about their fitness level and encourage them to climb stairs regularly. The data received from the application will provide important information for future research regarding physical activity promotion and for further application development.

