ABSTRACT

The purpose of this bachelor's thesis project is to develop an automated lighting system for the interfloor staircase of a cottage. In the course of the project, various types of lighting were studied, and existing analogues of automated lighting systems for stairs were analyzed.

After the analysis, the optimal type of lighting was chosen that best meets the requirements of efficiency, energy saving, and ease of use. To implement the system, the appropriate components were selected to ensure the required quality and functionality.

Next, structural, functional and electrical schematic diagrams were prepared to show the interconnection of the system components and how they work.

In addition, a program code was developed for the automated lighting system, in particular to control the lighting depending on the level of illumination and the movement of people on the stairs. The code was written with the system's reliability, accuracy, and efficiency in mind.

The completion of the project proves that all the tasks were successfully completed. The result is an automated lighting system for the cottage's interfloor staircase that provides optimal lighting on the stairs, taking into account the level of illumination and people's movement. This project helps to improve the comfort and safety of users, as well as promotes the efficient use of electricity through an automated lighting system.

Keywords: LED, automation, LED strip, stairs, lighting, smooth switching on/off, microcontroller.