PC PARTS COMPATIBILITY CHECKER WEBSITE

Caique Moran de Souza [1]
Davi Montandon de Siqueira [2]
Kayki Gabriel Figueiredo Ricardo [3]
Talles Santos Faria Silva [4]

The exponential evolution of computer hardware technology has resulted in a scenario where users have a wide variety of options for building their own machines. However, this abundance of choices can be overwhelming and lead to incompatibilities, a frequent problem faced by enthusiasts and beginners alike. In this context, there is a need for an innovative system that simplifies the selection of compatible components and provides detailed information about them. Choosing a CPU, motherboard, memory, graphics card and other components that work harmoniously can be complex and time-consuming. Furthermore, ensuring driver compatibility for these components is an additional and often forgotten task, which can lead to performance issues and system instability. To address this issue, it was proposed to create an innovative website that offers a comprehensive solution for evaluating the compatibility of computer components and checking the harmony of drivers. Users will be able to explore a wide range of hardware components such as CPUs, motherboards, RAM, graphics cards, storage and others. The system will allow the selection and comparison of these components based on criteria such as technical specifications, electrical and physical compatibility, and recommendations for use. Using intelligent algorithms, the website will perform a thorough analysis of selected components to identify possible incompatibilities. This includes detailed checks of interfaces, pins, slots, and other key parameters that ensure proper operation of hardware when combined. In addition to evaluating hardware compatibility, it will also check the compatibility of the drivers required for each component. This will help prevent software issues, ensuring users have a stable, functional system. In the current scenario, where the demand for personalization and optimization of computers is increasingly present, the issue of component compatibility becomes a significant barrier for many people. In this context, the project, developed with the SCRUM methodology, which is an agile and collaborative approach, was also carried out with the aim of mitigating this problem. To this end, research was carried out with user personas, empathy maps and interviews with the target audience. Process mapping using BPMN charts and the implementation of workflow control through WIP were important factors for the satisfactory results obtained. Our solution represents an innovative advancement that can transform the way users approach building their systems. In addition to offering a practical solution to the problem, this project challenged us, as software engineering students, to integrate acquired knowledge, apply sophisticated algorithms and collaborate effectively to achieve our goals.

Keywords: Compatibility; Components; Computers; Hardware.

[1] Graduando, Evangelical University of Goiás, montanhagot@gmail.com:
[2] Graduando, Evangelical University of Goiás, davi.siqueira@aluno.unievangelica.edu.br:
[3] Graduando, Evangelical University of Goiás, kaykigabriel15@gmail.com:
[4] Especialista: