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Keywords:

social networks, electronic payments, fintech products, mobile payments, payment systems, privacy, blockchain, nodes, transactions, emerging technologies, Java, REST API, services, storage, databases, mobile applications, JSON, network communication, software architecture, software development, microservices, API Gateway, Eureka Server

Summary

In recent times, social networks and electronic payments have become more and more present in people's lives. Technological development and the degree of coverage of the Internet network in the world, access to increasingly high-performance devices, the need to communicate or make payments online quickly and securely have contributed to the development of the two technologies that we consider indispensable at the present time.

The way mobile payments have developed and been adopted by people is mainly due to the advantages and innovations they bring, among which we can list ease of use, integration into various complex IT solutions, high security, privacy, low costs of trading or social influence.

Based on new technological innovations in the field of electronic payments, the fintech ecosystem in Romania is constantly developing. We notice the agility and innovation that characterize fintech companies, and they have the opportunity to transform the market through novelty and simplicity. In Romania and in the world, technology will change the financial sector, everything will become simpler, faster, cheaper and safer, and in the near future a series of technologies such as electronic payments, artificial intelligence, machine learning or blockchain will have a major impact on the financial market.

This research aims to develop the software architecture of an IT solution that offers users the possibility to make money transfers through an electronic wallet attached to the social network account. Thus, using concepts of software architecture, software development and emerging technologies (blockchain, electronic payments), a series of objectives are pursued, such as: transaction processing method, use cases, solution modules, architecture levels, payment module architecture, data storage management.

In order to achieve the objectives listed above, it is necessary to analyse previously developed works to assess the state of knowledge at the moment. Also, clear stages of selection,

analysis and evaluation of sources are needed, as well as the development of a solid theoretical and applied framework. The present work aims to systematically evaluate the articles regarding various software architecture approaches with the aim of proposing a new solution that can overcome the limitations identified in the specialized literature.

The methodology includes a data collection stage, the sources being represented by scientific articles, conference proceedings and journals available online, as well as personal practical experience. Primary resources will be scientific databases such as IEEE Xplore, ACM Digital Library, SpringerLink and others. In addition, articles published on specialized platforms, such as technical blogs or materials developed by companies in the software industry, will also be included.

Based on the results obtained from the analysis, a software architecture proposal was formulated in the work. This stage was conducted iteratively, including activities such as identifying existing problems (by critically evaluating available solutions, current gaps in software architectures of similar products are identified). The model was developed taking into account modern concepts such as web services, blockchain, database storage, JSON files, distributed systems and network communication. Finally, the paper presents two ways of validating the presented architecture, the first through the evaluation of users' perception, and the second way through a system of metrics and indicators.

The solution proposed for analysis was decomposed into three main modules so that further development or treatment of problems arising in their execution can be carried out separately, without influencing the other modules. Also, the presented architecture has the advantage of low development costs compared to a monolithic architecture and efficiency in the implementation cycle.

In the recent period, data privacy is one of the most discussed topics, both from the point of view of protecting user data, and from the point of view of vulnerabilities and attacks to which they are subject.

In conclusion, the methodology proposed for the present research paper involves a systematic and detailed approach to the analysis of the existing literature, followed by the development of a new software architecture based on the observations made. Through this approach, the aim is both to understand current trends in software architecture and to make original contributions to the field.