











## V. CONCLUSION

Import and export methods are very important for transferring data between databases, or for restoring data in the database. When working with databases, it is good to know what possibilities the database system offers for data transfer and loading, what methods for import and export are available and which of them are more efficient.

This paper is focused on an overview of import and export methods, which are described in the second and the third chapter. The fourth chapter of the article is focused on the comparison of import and export methods in terms of time. Three types of experiments were performed. Each of them was tested on the same dataset.

The first experiment was focused on comparison of the import methods. As shown, the impdp method was the fastest in time. This was mainly because it is running at the server level and therefore the additional costs of connecting to the client are eliminated.

The second experiment was focused on comparison of the export methods. As shown, the expdp method was the fastest in time. It is due to the same reason as impdp method.

The last experiment was focused on comparing the execution time of the select statement in the internal and external table. Select statement, executed in internal table, was faster than in external table, because the data are directly stored in the database table. So, there is no need to connect to an external data source.

The main aim of this paper was to introduce methods of data transfer, compare execution time of import methods, export methods and external table in transaction processing. Server-side tools as impdp and expdp were much faster than

client-server side tools. This is because there is no need to transfer data between client and server.

## ACKNOWLEDGMENT

This article was created in the framework of the National project IT Academy – Education for the 21st Century, which is supported by the European Social Fund and the European Regional Development Fund in the framework of the Operational Programme Human Resources.

The work is also supported by the project VEGA 1/0089/19 *Data analysis methods and decisions support tools for service systems supporting electric vehicles* and the *Grant system* of the University of Žilina.

## REFERENCES

- [1] Oracle, *Oracle Database Utilities Data Pump – Best Practices for Export and Import*. 2019.
- [2] B. Thomas, “Do More with Data Pump: Tips and Techniques”, unpublished.
- [3] Oracle, *Oracle Database Utilities: Full Transportable Export/Import, 2018*
- [4] M. Kvet, K. Matiaško, M. Kvet, “Complex time management in databases”, *Central European Journal of Computer Science* vol.4, 2014, pp. 269-284, doi: 10.2479/s13537-014-0207-4
- [5] M. Kvet, K. Matiaško, “Transaction Management in Temporal System”, *Iberian Conference on Information Systems and Technologies*, CISTI, 2014, doi: 10.1109/CISTI.2014.6876998
- [6] M. Kvet, K. Matiaško, “Time as the Important Factor of the Data Retrieval – Table type Classification”, *Advances in Intelligent systems and Computing*, vol. 569, 2017, pp. 492-502, doi:10.1007/978-3-319-56535-4\_50
- [7] T. Laszewski, P. Nauduri, *Migrating to the cloud – Chapter 5 Database Schema and Data Migration*, 2012, pp. 93-130
- [8] J. Clarke, *SQL Injection Attacks and Defense – Chapter 6 Exploiting the Operation System*, 2009, pp 271-315
- [9] Oracle, *Express Mode Loading with SQL\*Loader in Oracle Database 12c*, 2013.