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| **M4S-06: Software engineering for real-time electricity market bidding**  **Sameer Baruwal** |
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# Abstract

This study’s main goal is to find the time and memory bottlenecks in the ASSUME framework and find a proper solution for it.

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# Introduction

The electricity market is very different from the publicly known markets such as the stock market. The main difference lies in the nature of the commodity being traded and how it is used. The electricity market trades electricity, which is an instantaneous and non-storable commodity while the stock market trades ownership of companies. There are some other differences as well but this is the core difference.

This research delves into the ASSUME framework to simulate an energy market with 10 000 residential agents. The framework is an easy-to-use market simulation toolbox with integrated reinforcement learning methods, though these methods are not used. **Are personal pronouns used? (I, we, etc).** The framework was chosen so that we did not need to develop a market from scratch, which can be quite complex. The main goal of this project is to simulate 10 000 residential agents on the Belgian electricity market in 5 minutes. To do this, we need to optimize the ASSUME framework efficiently and decrease its simulation time. Therefore, we need to find the key performance bottleneck by means of profiling. So the research questions that can asked are

* **How can we optimize the ASSUME framework efficiently to simulate 10 000 agents?**
* **What are the key performance bottlenecks?**

# Literature Review

# Methodology

# Results

# Conclusion

# Acknowledgements

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