We live in an era where Internet is one of the daily needs of human life and modern countries. Instead of going to banks, people use Internet banking and instead of sending a physical letter they use digital ways of communication. This leads to a robust digital way of living, but this also means people are trusting middle companies and third parties for their online services. The most important ones are banks and financial middle man (e.g., credit card companies) and there has been many downsides to the trust, such as banks failing, government collapses that leads to the country’s currency exchange rate decrease to pennies (e.g., Zimbabwean dollar) and many more examples on smaller scale. The need of having a digital form of money that is not being controlled by one entity is plain to see.

Bitcoin is the first decentralized virtual currency and by far has the most number of users. It is based on cryptographic functions to remove the need of a central bank and regulates the generation of new units. Bitcoin is still in its early stages and there have not been that many practical applications of this digital currency that could offer an ultimate solution for financial problems.

In this thesis, we would like to look at available tools to facilitate users in holding and using Bitcoin by a perspective on usability and security, and then evaluate the possibilities for a small business to be able to accept Bitcoin payments. This could be a summary for the usage of any kind of a currency, as there only should be two entities involved in a monetary transaction, the payee and the payer.

**Thesis Statement:** End-to-end usable payment systems using Bitcoin, and its components, can be designed for real-world deployability while maintaining a strong notion of usability and security.