Report – Exam Creative applications of Python and AI

The aim of this task was to create a piece of art using Python, which is not an easy task for a beginner like me, with only some minor experience in Python from the first semester. During the brainstorming session, I decided to use one of the codes we had previously worked with in the seminar to avoid major difficulties. However, to create a unique piece of art rather than simply reproducing the one from the seminar, I decided to combine different codes and the resulting art.

I reviewed the various lectures and thought about which types of art I wanted to combine. I then had the idea of merging the lecture on AI-generated music, which I found very interesting, with the lecture on visual art. Specifically, I envisioned creating a kind of Lofi music-type YouTube video. These are well-known YouTube videos or livestreams where Lofi music is played. Lofi stands for "low fidelity," a cozy, relaxing style of music often streamed on YouTube. These videos or streams often feature endless loops, where a static image or GIF is displayed while various Lofi songs play in the background. The most famous livestream is titled *lofi hip hop radio - beats to relax/study to*, featuring an animated girl sitting at a desk. This character, known as the "Lofi girl," has become a symbol of Lofi music.

The target audience for these videos is often students or pupils seeking relaxing yet motivating background music to study to. Since I also enjoy these videos, and the seminar codes were suitable for this, I decided to create my own Lofi video using Python and AI. To further integrate what I had learned, I uploaded the video privately to YouTube and generated a QR code that links to it.

Now, for the methodological part: my first step was to create the song. I used the code from Lecture 4 and modified it with a Lofi prompt that matched my taste. I also slightly adjusted the length, but this was limited by my laptop's computing power, which almost crashed when generating a 20-second song. As a result, my Lofi video can't be as long as the originals and consists of a loop. Otherwise, I made no significant changes to the code.

In the second part, I used the code from Lecture 9. I slightly adapted the Python script example.py to fit my requirements and executed it in the terminal. Then, I used the image\_to\_video.py script to merge the generated images into a video. To connect the content from Lecture 4 with that of Lecture 9, I placed the song behind the video in an editing program and adjusted the synchronization a bit. I then uploaded the final Lofi video privately to YouTube to make it accessible via a link. Finally, I used the code from Lecture 10 to create a QR code in a Jupyter Notebook, which I included in my GitHub repository.