**Task 1:**

You are a researcher trying to organize the ECG recordings you obtained from various units at university hospital cologne. It took you multiple months to collect those samples, so you want to store meta-data about them in a smart way, so you can easily get an overview and search through your samples.

Apart from this signal data you also want to be able to store information about images of the patients hearts. In case this would be useful in your later research

Since this little program is just for your own overview, reidentification of the participants of the study is fine.

From former experience you know you are interested in

- the sample rate of the recording
- the duration of the recording
- the gender and age of the participant and a list of their health conditions
- which unit of which hospital the data was obtained in, so you can contact your research partners for possible questions
- the date of the recording

Preferably use Python or Java to solve this problem.

- Fill your collection with 5 datasamples, from at least 3 different participants.
- Add a functionality that allows you to search all data samples that are at least 10 seconds long.
- Add a functionality that allows you to see how many data samples for patients at least 50 years old long you have collected

**Task 2:**

Take a look at this dataset from physionet: ECG Fragment Database for the Exploration of Dangerous Arrhythmia v1.0.0 (physionet.org)

Make a classifier, based on an algorithm of your choice, that differentiates between fragments that contain a Ventricular Flutter or Fibrillation and the ones that do not.

Provide the performance of the classifier please.