

Lab 13 + 14 - Creating GUI applications

Script Languages

Learning goals

1. Create a window application in Python.
2. Interact with a database.

Exercises

1. Preparation

1. Find a web site that provides data in the JSON format e.g. download it from [Kaggle](#).
2. Read about different GUI frameworks available in Python (e.g. [tkinter](#), [kivy](#), [wxpython](#), [PyQt](#)). Choose one.
3. As it is a final project handle exceptions to prevent your application from crashing.

2. Developing a GUI application

1. Create a main container of your application. It should include a menu with a following options:
 1. clear the content of the database,
 2. get data from the Internet (see next task),
 3. set download criteria (see next task).
2. Download data in the JSON format, process it using approaches from previous assignments and store it in the SQLite database. Save only a subset of downloaded data (size, name, status, length, date range etc.) based on criteria set in your application (see task 2.1.3). If the database is not empty display the question whether to clear the database. If the user choses „no“ then the application should not download the data.
3. Inside the main window:
 1. Display the content of the database. Choose a reasonable number of displayed rows to avoid cluttering the main window.
 2. Add a button that displays some aggregations of the downloaded data (e.g. sum or an average of chosen value). Use SQL query to calculate a result.

3. Add a button to display data from the database as a chart.
4. Create a status line at the bottom of the main window and use it to display information about the status of the last operation.

3. Extended Version

1. Use ORM (e.g. PonyORM, SQLAlchemy) to interact with a database.
2. Prepare a set of test to verify your applications.
3. Separate business logic from handling GUI event.