

Assignment 1: Kotlin TODO Desktop Application **using Sqlite database for storing**

Student Amirhossein Zeinali Dehaghani (std ID: 1225496)
Professor Dr. Sabah Mohammed
Lakehead University

Overview

This To-Do List Application is designed and Built on the Kotlin programming language using JavaFX for the graphical UI and SQLite for storing and retrieving from Database.

Features

- **Add a todo:** Users can add new tasks.
- **Render the todo items:** Retrieving todo items from DB and displaying in the user interface.
- **Mark a task as completed:** Checkbox functionality allows users to mark tasks as completed.
- **Delete todo items:** Delete tasks with a trash icon.
- **Help Functionality:** A Help button in order to provide instructions on using the application.

Technologies Used

- **Kotlin**
- **JavaFX:** graphical UI
- **SQLite:** Using database for retrieving and storing the TODO list

Development Process(Class Structure)

- **Task Class:** Represents individual todo items, including properties for ID, description, and completion status. This class is responsible for the data representation of tasks.
- **Database Object:** A singleton object managing the SQLite database connection. It contains methods for initializing the database and creating the necessary tables.
- **ToDoList Class:** This class contains methods (addTask, markTaskAsCompleted, markTaskAsIncomplete, deleteTask, getAllTasks) for interacting with the tasks in the database. It handles logic related to task management.
- **MainApp Class:** The main application class that initializes the UI components using JavaFX. It handles user interactions and event handling for adding, deleting, and updating tasks. This class orchestrates the overall functionality of the application.

output

DB Browser for SQLite - C:\Users\AmirHossein\Desktop\Academ\Winter Semester\PL\Assignment\amirhossein_zeinali_dehaghani_Ass1\MyDB.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragma Execute SQL

sqlite_sequence tasks

Table: tasks

	id	description	isCompleted
	Filter		Filter
1	39	Programming	1
2	40	NLP	0
3	41	ML	0
4	42	Big data	1

↑

Storing in DB
by SQLite

TO-DO App

To-Do List with SQLite DB Help

- ☒ Programming
- ☐ NLP
- ☐ ML
- ☒ Big-data

Add a TODO +

AmirHossein Zeinali Dehaghani (Student ID: 1225496)

← Output

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Figure 1: output of Application + Database