Brief and Execution

1. Proceed with the following steps to create the environment for the Library Management System.
    a. Open MySQL Workbench
    b. From Ribbon: Database > Connect to Database > OK
    c. Write the following Queries:
        i. *create database library;*
        ii. *use library;*
        iii. *create table book_records(code int(11), title varchar(122), author varchar(100), genre varchar(122));*
        iv. *create table issued(regid int(11), admin int(11), code int(11), idate date);*
        v. *create table submitted(regid int(11), admin int(11), code(11), sdate date);*
    d. Navigator > Schemas > library > Tables > Right click book_records to open drop-down menu
    e. Select Table Data Import Wizard > Write the path of the books.csv file > Proceed with the dialogue box instructions and import data.
2. Now execute the libmansys.py file. as the program is executed, the user is asked to enter the valid username (admin) and the password (lib123) for administrator access in the Sign-in Window. Correct sign-in details opens the Library Management System in Python Shell.
3. The Sign-in window is made using Tkinter library and ImageTk module of the Pillow (PIL) library.
4. I have used the Tkinter, Pillow, mysql.connector, sys, getpass and the functools libraries in python.
    a. Tkinter: I used it to create GUI elements using the widgets found in the Tk toolkit.
    b. Pillow: It is a Python Imaging Library (PIL), which adds support for opening, manipulating and saving images.
    c. MySQL.connector: It is a self-contained Python package for communicating with MySQL servers and to use Python for database development.
    d. Sys: It provides various functions and variables that are used to manipulate different parts of the Python runtime environment.
    e. Getpass: This module provides a platform-independent way to enter a password in a command-line program.
    f. Functools: This module is for higher-order functions that work on other functions.
5. I have defined the following functions in the program: addbook(), issuebook(), submitbook(), display_issued(), display_submitted(), admin_issue(), admin_submit(), deletebook(), displaybook(), main().
6. I defined two classes for the two tkinter windows: Login and Exit Class.
7. Login: This class is for the sign-in window and defines its contents and their positions. __init__(), sign_in() are its defined functions.
8. Exit: This class is for the Exit/Continue window. It has three functions: __init__(), exit_(), continue_()