```python
"""
Ryan Kennedy, Gabriel Waldner
Cmdr. Schenk
Cloud Computing
7th Period
May 5, 2025
"""

from enum import Enum

class GUIStates(Enum):
    REGISTER_USER = 0
    LOGIN_USER = 1
    USER_INFO = 2
    TASK_BROWSER = 3
```

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class TaskRecord:

    def __init__(self):
        self.id = -1
        self.user_id = -1
        self.short_name = "blank"
        self.description = "blank"

    def fill(self, id, user_id, short_name, description):
        self.id = id
        self.user_id = user_id
        self.short_name = short_name
        self.description = description

    def to_string(self):
        result = "id: {}".format(self.id)
        result += "\nuser_id: {}".format(self.user_id)
        result += "\nshort_name: {}".format(self.short_name)
        result += "\ndescription: {}".format(self.description)
        return result
```

```python
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# CREATE TABLE users (
#         id INTEGER PRIMARY KEY AUTO_INCREMENT NOT NULL UNIQUE,
#         name TEXT NOT NULL,
#         username TEXT NOT NULL,
#         hashed_password TEXT NOT NULL,
# );

class UserRecord:

    def __init__(self):
        self.id = -1
        self.name = "blank"
        self.username = "blank"
        self.hashed_password = "blank"

    def fill(self, id, name, username, hashed_password):
        self.id = id
        self.name = name
        self.username = username
        self.hashed_password = hashed_password

    def to_string(self):
        result = "id: {}".format(self.id)
        result += "\nname: {}".format(self.name)
        result += "\nusername: {}".format(self.username)
        result += "\nhashed_password: {}".format(self.hashed_password)
        return result
```

```python
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import mysql.connector
import random

from user_record import UserRecord
from task_record import TaskRecord

# CREATE DATABASE RyanKennedyAndGabrielWaldner;
# USE RyanKennedyAndGabrielWaldner;
# CREATE TABLE users (
#       id INTEGER PRIMARY KEY AUTO_INCREMENT NOT NULL UNIQUE,
#       name TEXT NOT NULL,
#       username TEXT NOT NULL,
#       hashed_password TEXT NOT NULL
# );

# CREATE TABLE tasks (
#       id INTEGER PRIMARY KEY AUTO_INCREMENT NOT NULL UNIQUE,
#       user_id INTEGER NOT NULL,
#       short_name TEXT NOT NULL,
#       description TEXT,
#       FOREIGN KEY(user_id) REFERENCES users(id)
# );

class Database():

    def __init__(self):
        # self.conn = mysql.connector.connect(host = "192.168.0.100", user = "student", passwd = "jchs", database = "RyanKennedyAndGabrielWaldner")
        # self.conn = mysql.connector.connect(host = "127.0.0.1", user = "root", passwd = "#Whalez17", database = "RyanKennedyAndGabrielWaldner")
        # self.conn = mysql.connector.connect(host = "127.0.0.1", user = "root", passwd = "mysqlpassword", database = "RyanKennedyAndGabrielWaldner")
        self.conn = mysql.connector.connect(host = "127.0.0.1", user = "root", passwd = "ryansmiles", database = "RyanKennedyAndGabrielWaldner")
        self.cursor = self.conn.cursor()

    def close(self):
        self.conn.close()

    def users_get_all_records(self):
        # get raw data
        self.cursor.execute("SELECT id, name, username, hashed_password FROM users;");
        arr_data = self.cursor.fetchall()

        result = []

        # return empty array if there is no data to pack into array
        if(len(arr_data) == 0):
            return result

        # pack into array of BookRecord for easier access
        for record in arr_data:
            rec = UserRecord()
            rec.fill(id=int(record[0]), name=str(record[1]), username=str(record[2]), hashed_password=str(record[3]))
            result.append(rec)

        return result

    def users_get_record_by_id(self, id):
        self.cursor.execute("SELECT id, name, username, hashed_password FROM users WHERE id = {};".format(id));
        arr_data = self.cursor.fetchall()
```

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        if (len(arr_data) == 0):
            return UserRecord()

        record = arr_data[0] # db record
        rec = UserRecord() # function result of type UserRecord
        rec.fill(id=int(record[0]), name=str(record[1]), username=str(record[2]), ha
shed_password=str(record[3]))
        return rec

    def users_get_records_with_username_and_hashed_password(self, username, hashed_p
assword):
        # get raw data
        self.cursor.execute("SELECT id, name, username, hashed_password FROM users W
HERE username = '{}' AND hashed_password = '{}';".format(username, hashed_password))
        arr_data = self.cursor.fetchall()

        result = []

        # return empty array if there is no data to pack into array
        if(len(arr_data) == 0):
            return result

        # pack into array of BookRecord for easier access
        for record in arr_data:
            rec = UserRecord()
            rec.fill(id=int(record[0]), name=str(record[1]), username=str(record[2])
, hashed_password=str(record[3]))
            result.append(rec)

        return result


    def users_insert(self, record):
        query = "INSERT INTO users (name, username, hashed_password) VALUES ('{}', '
{}', '{}');".format(record.name, record.username, record.hashed_password)
        self.cursor.execute(query)
        self.conn.commit()

    def users_update(self, record):
        query = "UPDATE users SET name = '{}', username = '{}', hashed_password = '{
}' WHERE id = {};".format(record.name, record.username, record.hashed_password, str(
record.id))
        self.cursor.execute(query)
        self.conn.commit()

    def users_delete(self, id):
        # delete books that reference the author then delete the author
        self.cursor.execute("DELETE FROM tasks WHERE user_id = {};".format(str(id)))
        self.cursor.execute("DELETE FROM users WHERE id = {};".format(str(id)))
        self.conn.commit()

    # ================== TASKS STUFF ======================

    def tasks_get_all_records_with_user_id(self, user_id):
        # get raw data
        self.cursor.execute("SELECT id, user_id, short_name, description FROM tasks
WHERE user_id = {};".format(user_id))
        arr_data = self.cursor.fetchall()

        result = []

        # return empty array if there is no data to pack into array
        if(len(arr_data) == 0):
            return result

        # pack into array of BookRecord for easier access
        for record in arr_data:
            rec = TaskRecord()
            rec.fill(id=int(record[0]), user_id=int(record[1]), short_name=str(recor
d[2]), description=str(record[3]));
            result.append(rec)

        return result
```

```python
    def tasks_insert(self, record):
        self.cursor.execute("INSERT INTO tasks (user_id, short_name, description) VA
LUES ({}, '{}', '{}');".format(str(record.user_id), record.short_name, record.descri
ption))
        self.conn.commit()

    def tasks_update(self, record):
        self.cursor.execute("UPDATE tasks SET user_id = {}, short_name = '{}', descr
iption = '{}' WHERE id = {};".format(str(record.user_id), record.short_name, record.
description, str(record.id)))
        self.conn.commit()

    def tasks_delete(self, id):
        self.cursor.execute("DELETE FROM tasks WHERE id = {};".format(id))
        self.conn.commit()
```

```python
"""
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"""

import tkinter as tk
from tkinter import ttk
from tkinter import messagebox

import bcrypt

from user_record import UserRecord
from task_record import TaskRecord
from database import Database
from gui_states import GUIStates

class LoginUser:

    def __init__(self, root, db):
        self.frame = tk.Frame(root)
        self.db = db

    def init_resources(self):
        style = ttk.Style()
        style.theme_use('clam')  # Try also: 'alt', 'vista', etc.

        # Title Label
        style.configure("TitleLabel.TLabel", font=("Segoe UI", 20, "bold"))

        # Field Labels
        style.configure("FieldLabel.TLabel", font=("Segoe UI", 20), foreground="#444
")

        # Field Entry
        style.configure("Field.TEntry", font=("Segoe UI", 20), padding=10)

        # Action Buttons
        style.configure("Action.TButton", font=("Segoe UI", 20), padding=10)



        ttk.Label(self.frame, text="User Login", style="TitleLabel.TLabel").place(x=
400, y=30, anchor="center")

        # Username label
        ttk.Label(self.frame, text="Username:", style="FieldLabel.TLabel").place(x=1
00, y=150)
        self.username_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.username_ent.place(x=100, y=200, width=600, height=50)

        # Password
        ttk.Label(self.frame, text="Password:", style="FieldLabel.TLabel").place(x=1
00, y=375)
        self.password_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.password_ent.place(x=100, y=425, width=600, height=50)

        #Buttonss
        ttk.Button(self.frame, text="Login", command=self.login).place(x=425, y=600,
 width=225, height=75)
        ttk.Button(self.frame, text="Register", command=self.goto_register_user).pla
ce(x=125, y=600, width=225, height=75)

    def login(self):
        record = UserRecord()
        password = self.password_ent.get()
        hashed_password = bcrypt.hashpw(password.encode(), b'$2b$12$zm4/D56Ntli/hWPK
nmLSgu')
        record.fill(-1, "", self.username_ent.get(), hashed_password.decode("utf-8")
)
```

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        matched_users = self.db.users_get_records_with_username_and_hashed_password(
record.username, record.hashed_password)

        if (len(matched_users) == 0):
            tk.messagebox.showerror("Failed to Login", "Invalid Login Credentials");
            return

        self.hide()
        self.show_map[GUIStates.USER_INFO](matched_users[0].id)

    def goto_register_user(self):
        self.hide()
        self.show_map[GUIStates.REGISTER_USER]()

    def clear_entries(self):
        self.username_ent.delete(0, "end")
        self.password_ent.delete(0, "end")

    def show(self):
        self.clear_entries()
        self.frame.place(x=0,y=0,width=1000,height=1000)

    def hide(self):
        self.frame.place_forget()

    def assign_show_map(self, show_map):
        self.show_map = show_map
```

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import tkinter as tk
from tkinter import ttk
from tkinter import messagebox

import bcrypt

from user_record import UserRecord
from task_record import TaskRecord
from database import Database
from gui_states import GUIStates

class RegisterUser:

    def __init__(self, root, db):
        self.frame = tk.Frame(root)
        self.db = db

    def init_resources(self):
        style = ttk.Style()
        style.theme_use('clam')  # Try also: 'alt', 'vista', etc.

        # Title Label
        style.configure("TitleLabel.TLabel", font=("Segoe UI", 20, "bold"))

        # Feedback Label
        style.configure("FeedbackLabel.TLabel", font=("Segoe UI", 9, "italic"))

        # Field Labels
        style.configure("FieldLabel.TLabel", font=("Segoe UI", 20), foreground="#444
")

        # Field Entry
        style.configure("Field.TEntry", font=("Segoe UI", 20), padding=10)

        # Action Buttons
        style.configure("Action.TButton", font=("Segoe UI", 20), padding=10)


        ttk.Label(self.frame, text="User Registration", style="TitleLabel.TLabel").p
lace(x=400, y=30, anchor="center")

        self.feedback_lbl = ttk.Label(self.frame, text="", style="FeedbackLabel.TLab
el")
        self.feedback_lbl.place(x=50, y=30)

        # name
        ttk.Label(self.frame, text="Name:", style="FieldLabel.TLabel").place(x=100,
y=125)
        self.name_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.name_ent.place(x=100, y=175, width=600, height=50)

        # Username label
        ttk.Label(self.frame, text="Username:", style="FieldLabel.TLabel").place(x=1
00, y=260)
        self.username_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.username_ent.place(x=100, y=310, width=600, height=50)

        # Password
        ttk.Label(self.frame, text="Password:", style="FieldLabel.TLabel").place(x=1
00, y=400)
        self.password_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.password_ent.place(x=100, y=450, width=600, height=50)

        # buttons
```

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        ttk.Button(self.frame, text="Register", command=self.register_user, style="A
ction.TButton").place(x=425, y=600, width=225, height=75)
        ttk.Button(self.frame, text="Goto User Login", command=self.goto_login_user,
 style="Action.TButton").place(x=125, y=600, width=225, height=75)

    def register_user(self):
        record = UserRecord()
        password = self.password_ent.get()
        hashed_password = bcrypt.hashpw(password.encode(), b'$2b$12$zm4/D56Ntli/hWPK
nmLSgu')
        record.fill(-1, self.name_ent.get(), self.username_ent.get(), hashed_passwor
d.decode("utf-8"))
        self.db.users_insert(record)

        self.goto_login_user()

    def goto_login_user(self):
        self.frame.place_forget()
        self.show_map[GUIStates.LOGIN_USER]()

    def clear_entries(self):
        self.name_ent.delete(0, "end")
        self.username_ent.delete(0, "end")
        self.password_ent.delete(0, "end")

    def show(self):
        self.clear_entries()
        self.frame.place(x=0,y=0,width=1000,height=1000)

    def hide(self):
        self.frame.place_forget()

    def assign_show_map(self, show_map):
        self.show_map = show_map
```

```python
"""
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import tkinter as tk
from tkinter import Canvas, ttk
from tkinter import messagebox
from PIL import ImageTk, Image

from user_record import UserRecord
from task_record import TaskRecord
from database import Database
from gui_states import GUIStates

class TaskBrowser:

    def __init__(self, root, db):
        self.frame = tk.Frame(root)
        self.db = db
        self.user = UserRecord()
        self.tasks = []
        self.selected_task = 0 # index into self.tasks
        self.filename= 'src/med.jpeg'
        self.is_inserting = False  # Track if we are in insert mode
        #defining the image so it can be placed later on:
        self.my_img = ImageTk.PhotoImage(Image.open(self.filename).resize((500, 550)
))

    def init_resources(self):
        self.canvasMain = Canvas(self.frame, width=1000, height=1000)
        #Places the image on the canvas:
        self.canvasMain.create_image(260, 100, image=self.my_img , anchor="nw") #ima
ge=self.my_img,

        #CREATING LABELS AND ENTIRES FOR CREATE A LOGIN SCREEN, DONE BY GABRIEL WALD
NER
        #Placing the canvas:

        # Style setup (once, in __init__ or init_resources)
        style = ttk.Style()
        style.theme_use('clam')  # Options: 'clam', 'alt', 'default', 'vista'
        style.configure("TButton", font=("Segoe UI", 10), padding=6)

        # Title Label
        style.configure("TitleLabel.TLabel", font=("Segoe UI", 20, "italic"))

        style.configure("HeaderLabel.TLabel", font=("Segoe UI", 12, "italic"))


        # Field Labels
        style.configure("FieldLabel.TLabel", font=("Segoe UI", 10), foreground="#444
")

        # Field Entry
        style.configure("Field.TEntry", font=("Segoe UI", 20), padding=10)

        # Info Buttons
        style.configure("Info.TButton", font=("Segoe UI", 7), padding=10)

        # Action Buttons
        style.configure("Action.TButton", font=("Segoe UI", 10), padding=10)

        # Delete Buttons
        style.configure("Delete.TButton", font=("Segoe UI", 20), padding=10, backgro
und="#d32f2f")

        ttk.Label(self.frame, text="Task Browser", style="TitleLabel.TLabel").place(
x=50, y = 20)
```

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        # gui state change buttons

        ttk.Button(self.frame, text="Goto User Info", command=self.goto_user_info, s
tyle="Info.TButton").place(x=500, y=20)
        ttk.Button(self.frame, text="Logout", command=self.logout, style="Info.TButt
on").place(x=650, y=20)

        # entries and their respective labels

        self.task_num_lbl = tk.Label(self.frame)
        self.task_num_lbl.place(x=50, y=100)

        ttk.Label(self.frame, text="Short Name:", style="HeaderLabel.TLabel").place(
x=50, y=200)
        self.short_name_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.short_name_ent.place(x=50, y=250)

        ttk.Label(self.frame, text="Description:" , style="HeaderLabel.TLabel").plac
e(x=50, y=350)
        self.description_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.description_ent.place(x=50, y=400)

        # CRUD buttons
        ttk.Button(self.frame, text="New", command=self.add_record, style="Info.TBut
ton").place(x=75, y=500)
        ttk.Button(self.frame, text="Update", command=self.update_record, style="Inf
o.TButton").place(x=75, y=600)
        ttk.Button(self.frame, text="Delete", command=self.delete_record, style="Inf
o.TButton").place(x=75, y=700)

        # nav buttons
        ttk.Button(self.frame, text="<", command=lambda:self.increment_selected_task
(-1), style="Info.TButton").place(x=415, y=700)
        ttk.Button(self.frame, text="<<", command=lambda:self.increment_selected_tas
k(-3), style="Info.TButton").place(x=335, y=700)
        ttk.Button(self.frame, text="|<", command=lambda:self.increment_selected_tas
k(-1 * self.selected_task), style="Info.TButton").place(x=265, y=700)
        ttk.Button(self.frame, text=">", command=lambda:self.increment_selected_task
(1), style="Info.TButton").place(x=500, y=700)
        ttk.Button(self.frame, text=">>", command=lambda:self.increment_selected_tas
k(3), style="Info.TButton").place(x=575, y=700)
        ttk.Button(self.frame, text=">|", command=lambda:self.increment_selected_tas
k(len(self.tasks) - 1 - self.selected_task), style="Info.TButton").place(x=655, y=70
0)

    def show(self, id):
        self.canvasMain.pack()
        self.user = self.db.users_get_record_by_id(id)
        self.selected_task = 0
        self.refresh()

        self.frame.place(x=0, y=0, width=1000, height=1000)

    def add_record(self):
        if not self.is_inserting:
            # Clear fields and change button text to "Insert"
            self.short_name_ent.delete(0, "end")
            self.description_ent.delete(0, "end")
            self.is_inserting = True
            self.createBtn = ttk.Button(self.frame, text="Insert", command=self.add_
record, style="Info.TButton").place(x=75, y=500)

        else:
            # Insert the record and refresh
            task = TaskRecord()
            task.fill(id=-1, user_id=self.user.id, short_name=self.short_name_ent.ge
t(), description=self.description_ent.get())
            self.db.tasks_insert(task)
            self.refresh()
            self.is_inserting = False
            self.createBtn = ttk.Button(self.frame, text="New", command=self.add_rec
ord, style="Info.TButton").place(x=75, y=500)
            # Select and display the newly added task
```

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            self.selected_task = len(self.tasks) - 1
            self.display_record()


    def update_record(self):
        if (self.selected_task == -1):
            messagebox.showerror("Can't update a nonexistent record.", "Can't update
 a nonexistent record.");
            return

        task = TaskRecord()
        task.fill(id=self.tasks[self.selected_task].id, user_id=self.tasks[self.sele
cted_task].user_id, short_name=self.short_name_ent.get(), description=self.descripti
on_ent.get())

        result = messagebox.askquestion("Task Update Confirmation", "Are you sure th
at you would like to update this task?\n\n"+self.tasks[self.selected_task].to_string
()+"\n\nTo This Task\n\n"+task.to_string())
        if (result != "yes"):
            return


        self.db.tasks_update(task)
        self.refresh()

    def delete_record(self):
        if (self.selected_task == -1):
            messagebox.showerror("Can't delete a nonexistent record.", "Can't delete
 a nonexistent record.");
            return

        result = messagebox.askquestion("Task Delete Confirmation", "Are you sure th
at you would like to delete this task?\n\n"+self.tasks[self.selected_task].to_string
())
        if (result != "yes"):
            return

        self.db.tasks_delete(self.tasks[self.selected_task].id)

        self.refresh()

    def refresh(self):
        self.tasks = self.db.tasks_get_all_records_with_user_id(self.user.id)

        self.increment_selected_task(0) # bounds check self.selected_task

        self.display_record()

    def increment_selected_task(self, amt):
        self.selected_task += amt

        # check if there are no tasks
        if (len(self.tasks) == 0):
            self.selected_task = -1
            return

        # cap to within bounds

        if (self.selected_task >= len(self.tasks)):
            self.selected_task = len(self.tasks) - 1

        if (self.selected_task < 0):
            self.selected_task = 0

        self.display_record()


    def display_record(self):
        self.short_name_ent.delete(0, "end")
        self.description_ent.delete(0, "end")

        task = TaskRecord()
        if (self.selected_task == -1):
```

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            task.fill(id = -1, user_id = self.user.id, short_name = "", description
= "")
            self.task_num_lbl["text"] = "Task #: {}".format("No Tasks")
        else:
            task = self.tasks[self.selected_task]
            self.task_num_lbl["text"] = "Task #: {}".format(self.selected_task + 1)

        self.short_name_ent.insert(0, task.short_name)
        self.description_ent.insert(0, task.description)

    def logout(self):
        self.goto_login()

    def goto_login(self):
        self.hide()
        self.show_map[GUIStates.LOGIN_USER]()

    def goto_user_info(self):
        self.hide()
        self.show_map[GUIStates.USER_INFO](self.user.id)

    def hide(self):
        self.frame.place_forget()
        self.canvasMain.pack_forget()

    def assign_show_map(self, show_map):
        self.show_map = show_map
```

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"""

import sys
import tkinter as tk
from tkinter import ttk
from tkinter import messagebox

import bcrypt

from user_record import UserRecord
from task_record import TaskRecord
from database import Database
from gui_states import GUIStates

class UserInfo:

    def __init__(self, root, db):
        self.frame = tk.Frame(root)
        self.line_canvas = tk.Canvas(self.frame, width=800, height=800, bg="white",
highlightthickness=0)
        self.db = db
        self.user = UserRecord() # stores the user that we are currently displaying
the information of, currently blank but gets set in self.show(...)

    def init_resources(self):
        style = ttk.Style()
        style.theme_use('clam')

        # Title Label
        style.configure("TitleLabel.TLabel", font=("Segoe UI", 20, "italic"))

        style.configure("HeaderLabel.TLabel", font=("Segoe UI", 12, "italic"))

        # Field Labels
        style.configure("FieldLabel.TLabel", font=("Segoe UI", 10), foreground="#444
", background="white")

        # Field Entry
        style.configure("Field.TEntry", font=("Segoe UI", 7), padding=10)

        # Info Buttons
        style.configure("Info.TButton", font=("Segoe UI", 7), padding=10)

        # Action Buttons
        style.configure("Action.TButton", font=("Segoe UI", 10), padding=10)

        # Delete Buttons
        style.configure("Delete.TButton", font=("Segoe UI", 20), padding=10, backgro
und="#d32f2f")



        ttk.Label(self.frame, text="Account Info", style="TitleLabel.TLabel").place(
x=400, y=30, anchor="center")

        # change name

        ttk.Label(self.frame, text="Change Name", style="HeaderLabel.TLabel").place(
x=20,y=60)

        ttk.Label(self.frame, text="Name:", style="FieldLabel.TLabel").place(x=100,
y=125)
        self.name_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.name_ent.place(x=100, y=150)

        ttk.Button(self.frame, text="Save", command=self.change_name, style="Info.TB
utton").place(x=100, y=225, width=150, height=50)
```

```python
        # change credentials

        ttk.Label(self.frame, text="Change Credentials", style="HeaderLabel.TLabel")
.place(x=20, y=350)

        ttk.Label(self.frame, text="Username:", style="FieldLabel.TLabel").place(x=1
00, y=400)
        self.username_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.username_ent.place(x=100, y=425)

        ttk.Label(self.frame, text="New Password:", style="FieldLabel.TLabel").place
(x=100, y=500)
        self.password_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.password_ent.place(x=100, y=525)

        ttk.Label(self.frame, text="Old Password:", style="FieldLabel.TLabel").place
(x=100, y=600)
        self.old_password_ent = ttk.Entry(self.frame, style="Field.TEntry")
        self.old_password_ent.place(x=100, y=625)

        ttk.Button(self.frame, text="Save", command=self.change_credentials, style="
Info.TButton").place(x=100, y=700, width=150, height=50)

        # buttons for action

        ttk.Button(self.frame, text="Goto Task Browser", command=self.goto_task_brow
ser, style="Action.TButton").place(x=500, y=80, width=225, height=100)
        ttk.Button(self.frame, text="Logout", command=self.logout, style="Action.TBu
tton").place(x=500,y=280, width=225, height=100)
        ttk.Button(self.frame, text="Quit App", style="Action.TButton", command=lamb
da:sys.exit(0)).place(x=500, y=466,width=225, height=100)
        ttk.Button(self.frame, text="Delete Account", command=self.delete_user, styl
e="Delete.TButton").place(x=500 - 8, y=650, width=240, height=100)


    def show(self, id):
        self.clear_entries()
        self.user = self.db.users_get_record_by_id(id)
        self.name_ent.insert(0, self.user.name)
        self.username_ent.insert(0, self.user.username)
        self.line_canvas.place(x=0,y=0)
        self.frame.place(x=0,y=0,width=800,height=800)

        self.line_canvas.create_line(400, 75, 400, 800, fill="black", width=5)

    def delete_user(self):
        result = messagebox.askquestion("Account Deletion Confirmation", "Are you su
re that you would like to delete your account?")
        if (result != "yes"):
            return

        self.db.users_delete(self.user.id)
        self.goto_login()

    def change_credentials(self):
        result = messagebox.askquestion("Change Credentials Confirmation", "Are you
sure that you would like to update your credentials?")
        if (result != "yes"):
            return

        old_password = self.old_password_ent.get()
        hashed_old_password = bcrypt.hashpw(old_password.encode(), b'$2b$12$zm4/D56N
tli/hWPKnmLSgu').decode("utf-8")

        if (hashed_old_password != self.user.hashed_password):
            tk.messagebox.showerror("Failed to change credentials", "Old Password is
 Incorrect")
            return

        password = self.password_ent.get()
        hashed_password = bcrypt.hashpw(password.encode(), b'$2b$12$zm4/D56Ntli/hWPK
nmLSgu').decode("utf-8")
```

```python
        record = UserRecord()
        record.fill(id=self.user.id, name=self.name_ent.get(), username=self.usernam
e_ent.get(), hashed_password=hashed_password)
        self.db.users_update(record)
        self.user = self.db.users_get_record_by_id(self.user.id)
        self.update_entries()
        tk.messagebox.showinfo("Successfully Updated Credentials", "Successfully Upd
ated Credentials")

    def change_name(self):
        record = UserRecord()
        record.fill(id=self.user.id, name=self.name_ent.get(), username=self.user.us
ername, hashed_password=self.user.hashed_password)
        self.db.users_update(record)
        tk.messagebox.showinfo("Successfully Updated Name", "Successfully Updated Na
me")

        self.user = self.db.users_get_record_by_id(self.user.id)
        self.update_entries()

    def update_entries(self):
        self.clear_entries()
        self.name_ent.insert(0, self.user.name)
        self.username_ent.insert(0, self.user.username)

    def clear_entries(self):
        self.name_ent.delete(0, "end")
        self.username_ent.delete(0, "end")
        self.password_ent.delete(0, "end")
        self.old_password_ent.delete(0, "end")

    def logout(self):
        self.goto_login()

    def goto_login(self):
        self.hide()
        self.show_map[GUIStates.LOGIN_USER]()

    def goto_task_browser(self):
        self.hide()
        self.show_map[GUIStates.TASK_BROWSER](self.user.id)

    def hide(self):
        self.line_canvas.place_forget()
        self.frame.place_forget()

    def assign_show_map(self, show_map):
        self.show_map = show_map
```

```python
"""
Ryan Kennedy, Gabriel Waldner
Cmdr. Schenk
Cloud Computing
7th Period
May 5, 2025
"""

import tkinter as tk
from tkinter import ttk
from tkinter import messagebox

from user_record import UserRecord
from task_record import TaskRecord
from database import Database
from gui_states import GUIStates

from register_user import RegisterUser
from login_user import LoginUser
from user_info import UserInfo
from task_browser import TaskBrowser

class GUI():

    def __init__(self):

        # tkinter init
        self.root = tk.Tk()
        self.root.geometry("800x800")

        # db init
        self.db = Database()

        # where you can create a new user
        self.register_user = RegisterUser(self.root, self.db)

        # where you can login to the user
        self.login_user = LoginUser(self.root, self.db)

        # where you can update/delete your user
        self.user_info = UserInfo(self.root, self.db)

        # where you can view/CRUD on the logged in user's tasks
        self.task_browser = TaskBrowser(self.root, self.db)

        # a map that stores the functions to show the different states so that a button in one state can change to another state
        show_map = {
            GUIStates.REGISTER_USER : self.register_user.show,
            GUIStates.LOGIN_USER : self.login_user.show,
            GUIStates.USER_INFO : self.user_info.show,
            GUIStates.TASK_BROWSER : self.task_browser.show
        }
        self.register_user.assign_show_map(show_map)
        self.login_user.assign_show_map(show_map)
        self.user_info.assign_show_map(show_map)
        self.task_browser.assign_show_map(show_map)

        # this is the actual init because now inside the states the self.show_map is valid
        self.register_user.init_resources()
        self.login_user.init_resources()
        self.user_info.init_resources()
        self.task_browser.init_resources()

    def __del__(self):
        self.db.close()

    def run(self):
        self.login_user.show()
        self.root.mainloop()
```

```python
"""
Ryan Kennedy, Gabriel Walder
Cmdr. Schenk
Cloud Computing
7th Period
May 5, 2025
"""

import sys
from gui import GUI

def main():

    # initializes the gui
    gui = GUI()

    # starts the gui
    gui.run()

    # exit successfully
    sys.exit(0)

if (__name__=="__main__"):
    main()
```