

Start Program

function connectDatabase():

try:

- Open a connection to the 'students system.db' database
- Get a cursor for the database connection
- Execute queries to create 'students' and 'lessons' tables if they don't exist
- Join the two tables with each others
- Commit changes to the database
- Return the database connection and cursor

except DatabaseError as e:

- Print an error message
- Exit the program with an error code

function doesStudentExist(cursor, studentId):

- Execute a query to check if a student with the given ID exists in the database
- Return True if a student is found, else return False

function getStudentInput(cursor):

- Loop until valid student ID is entered:
 - Prompt the user to enter a student ID
 - Check if the student ID already exists
 - Break the loop if the ID is unique, otherwise prompt again
- Loop until valid name is entered:
 - Prompt the user to enter a name

- Check if the name contains only letters without spaces
 - Break the loop if valid, otherwise prompt again
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- Loop until valid last name is entered:
 - Prompt the user to enter a last name
 - Check if the last name contains only letters
 - Break the loop if valid, otherwise prompt again
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- Loop until valid age is entered:
 - Prompt the user to enter an age
 - Break the loop if a valid numeric value is entered, otherwise prompt again
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- Loop until valid school year is entered:
 - Prompt the user to enter a school year
 - Break the loop if a valid numeric value is entered, otherwise prompt again
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- Loop until valid registration date is entered:
 - Prompt the user to enter a registration date in the format '1/1/2024'
 - Check if the input matches the date format
 - Break the loop if valid, otherwise prompt again
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- Loop until valid lesson name is entered:
 - Prompt the user to enter lessons separated by commas
 - Check if the input contains only letters
 - Break the loop if valid, otherwise prompt again
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- Loop until valid lesson id is entered:
 - prompt the user to enter lesson id
 - Break the loop if a valid numeric value is entered, otherwise prompt again

- Return the gathered student information

function getStudentInputForUpdate():

- Similar to getStudentInput but without checking for unique student ID and lesson ID

function addStudent(cursor, connection):

- Print a message to add a student
- Call getStudentInput to get student information
- Check if the student ID is unique
- Insert the student and lessons data into the database
- Print a success message
- Commit changes to the database

function deleteStudent(cursor, connection):

- Prompt the user to enter a student ID to delete
- Check if the student exists
- Delete the student and related lessons from the database
- Print a success message
- Commit changes to the database

function updateStudent(cursor, connection):

- Prompt the user to enter a student ID to update
- Check if the student exists
- Call getStudentInputForUpdate to get updated information

- Update the student and lessons data in the database
- Print a success message
- Commit changes to the database

function showStudent(cursor):

- Prompt the user to enter a student ID to display
- Check if the student exists
- Retrieve and display the student information from the database

function main():

- Call connectDatabase to establish a connection
- Loop until the user chooses to exit:
 - Display a menu for operations (add, delete, update, show, exit)
 - Call the corresponding function based on the user's choice

End Program