PROJECT LOG AND IDEAS:

**22/03/23: (14:18 PM )** Currently working on choosing the idea to work with for the database since I can’t work with anything relating to soccer.   
Initial Ideas:  
1. Online Shopping System  
2. Travel Booking system  
3. Game Shop  
  
Decided to with Travel Booking system, seems like something I haven’t done for any other module and would like to work on something new.  
  
**22/03/23: (14:55 PM )** Want to setup the entities for the **TRAVEL BOOKING SYSTEM** and the fields they will entail.  
For a travel booking system, these are the entities I will work on implementing

1. User: This entity will contain information about users who use the system for booking travel services. Fields can include an **integer ID**, a **string field for the username**, and **string fields for the user's name, email address, and phone number.**
2. Trip: This entity will contain information about the trips available for booking. Fields can include an **integer ID**, a **string field for the trip name**, a **string field for the trip description**, a **floating field for the trip cost,** and an **integer field for the maximum number of people** allowed on the trip.
3. Booking: This entity will contain information about the bookings made by users. Fields can include **an integer ID**, an **integer field for the user ID**, an integer **field for the trip ID**, a **string field for the booking status** (such as "pending", "confirmed", or "cancelled"), and a **floating field for the booking cost**.
4. Payment: This entity will contain information about the payments made by users for their bookings. Fields can include an **integer ID**, an **integer field for the booking ID**, a **string field for the payment method,** and a **floating field for the payment amount**.
5. Location: This entity will contain information about the locations that users can travel to. Fields can include **an integer ID**, a **string field for the location name**, a **string field for the location description**, and a **floating field for the location cost**.
6. Review: This entity will contain information about the reviews submitted by users for the trips they have taken. Fields can **include an integer ID**, an **integer field for the user ID**, an **integer field for the trip ID**, a **string field for the review text**, and an **integer field for the review rating.**

**22/03/23: (15:05 PM )** Database Modelling initial setup might be a bit complex so possible adjustments can be made in the future  
  
In this database model, each entity is represented by a table with its corresponding fields. The relationships between the entities are indicated by the connecting lines.

The **User** table has a one-to-many relationship with the **Booking** table, as a user can make multiple bookings. The **Booking** table also has a one-to-many relationship with the **Payment** table, as a booking can have multiple payments associated with it.

The **Trip** table has a many-to-many relationship with the **Location** table, as a trip can have multiple locations and a location can be part of multiple trips. This relationship is represented by the **TripLocation** junction table, which contains foreign keys to both the **Trip** and **Location** tables.

The **Review** table has a one-to-many relationship with both the **User** and **Trip** tables, as a **user** can submit multiple **reviews** for different **trips** and a trip can have multiple reviews submitted by different users.

**22/03/23: (16:37 PM )** Decided to make changes and amendments to the booking system to reduce the complications of the system.  
  
The new travel system will be implemented like this:  
1. **Customer table** - This table would contain information about registered customers such as their customer ID, name, email, phone number and address.  
  
2. **Booking table** - This table would contain information about each booking made by a customer. It would include the booking ID, flight id, customer ID, travel date, travel time and seats.

3. **Flight table** - This table would contain information about each available flight. It would include the flight ID, airport ID, departure location, arrival location, airline name, duration(mins) and cost.  
  
4. **Airport table** - This table would contain information about each airport. It would include the airport ID, name, location.  
  
5. **Payment table** - This table would contain information about each payment made by a user. It would include the payment ID, booking ID, amount paid(which will be flight cost multiplied with the number of seats in the booking), payment date, and payment method.

**22/03/23: (17:23 PM )** Database Model and Diagram done and attached in github.

**22/03/23: (17:23 PM – 18:08PM)** Database populated.  
  
**22/03/23: (18:23PM)** Application Folder Structure Created in Intellij  
  
**22/03/23: (18:25PM)** Using the DAO\_product example I made up my project folder structure.  
  
**22/03/23: (18:32PM)** Made an initial base for the Customer DTO.   
  
**22/03/23: (18:38PM)** Made an initial base for the Airport DTO.  
  
**22/03/23: (18:42PM)** Made an initial base for the Flight DTO.  
  
**22/03/23: (18:47PM)** Made an initial base for the Booking DTO.  
  
**22/03/23: (18:52PM)** Made an initial base for the Payment DTO.  
  
**22/03/23: (19:00 PM )** Added JDBC driver to the Driver  
  
**22/03/23: (19:12 PM )** Added JDBC connection and DaoException.  
  
**22/03/23: (19:17 PM )** Added CustomerDaoInterface with Features 1-4.  
  
**22/03/23: (20:45 PM )** Implemented findAllCustomers() method.  
  
**22/03/23: (21:08 PM )** Implemented testFindAllCustomers() - Junit Test and Successful.  
  
**22/03/23: (21:45 PM )** Implemented findCustomerById(int customerId)

method.  
  
**22/03/23: (22:21 PM )** Implemented testFindCustomerById()

- Junit Test and Successful.

**22/03/23: (22:32 PM )** Implemented deleteCustomerById(int customerId) method.  
  
**22/03/23: (22:46 PM )** Implemented testDeleteCustomerById ()

- Junit Test and Successful.

**22/03/23: (22:48 PM )** Implemented insertCustomer(Customer customer)

method.  
  
**22/03/23: (23:06 PM )** Implemented testInsertCustomer()

- Junit Test and Successful. While working on this test, it was failed a couple times then I had to change how I did the auto increment of my id for all DTOs and it was successful.  
  
**22/03/23: (23:16 PM )** Added AirportDaoInterface with Features 1-4.

**22/03/23: (23:21 PM )** Implemented findAllAirports() method.  
  
**22/03/23: (23:23 PM )** Implemented testFindAllAirports() - Junit Test and Successful.

**22/03/23: (23:26 PM )** Implemented findAirportById(int airportId)

method.  
  
**22/03/23: (23:28 PM )** Implemented testFindAirportById() - Junit Test and Successful.  
  
 **THURSDAY: 23/03/23**

**23/03/23: (23:42 PM )** Implemented deleteAirportById(int airportId)

method.  
  
**23/03/23: (23:46 PM )** Implemented testDeleteAirportById() - Junit Test and Successful.  
  
**23/03/23: (23:49 PM )** Implemented *insertAirport(Airport airport)*

method.  
  
**23/03/23: (23:56 PM )** Implemented testInsertAirport() - Junit Test and Successful.  
  
 **FRIDAY: 24/03/23**  
  
**24/03/23: (00:10 PM )** Added FlightDaoInterface with Features 1-4.  
  
**24/03/23: (00:23 PM )** Implemented findAllFlights() method.

**24/03/23: (00:28 PM )** Implemented testFindAllFlights() - Junit Test and Successful.  
  
 **SATURDAY: 25/03/23**  
  
**25/03/23: (17:02 PM )** Implemented findFlightById(int flightId)

method.  
  
**25/03/23: (17:06 PM )** Implemented testFindFlightById()- Junit Test and successful.  
  
**25/03/23: (17:13 PM )** Implemented deleteFlightById(int flightId)

method.  
  
**25/03/23: (17:19 PM )** Implemented testDeleteFlightById()- Junit Test and successful.

**25/03/23: (17:22 PM )** Implemented insertFlight(Flight flight) method.  
  
**25/03/23: (17:29 PM )** Implemented testInsertFlight()- Junit Test and successful.  
  
**25/03/23: (17:51 PM )** Added BookingDaoInterface with Features 1-4.

**25/03/23: (17:58 PM )** Implemented findAllBookings() method.  
  
**25/03/23: (18:00 PM )** Implemented testFindAllBookings() - Junit Test and Successful  
  
**25/03/23: (18:05 PM )** Implemented findBookingById(int bookingId) method.  
  
**25/03/23: (18:16 PM )** Implemented testFindBookingById()- Junit Test and successful.  
  
**25/03/23: (19:42 PM )** Implemented deleteBookingById(int bookingId) method.  
  
**25/03/23: (19:58 PM )** Implemented testDeleteBookingById()- Junit Test and successful.  
  
**25/03/23: (20:03 PM )** Implemented insertBooking(Booking booking) method.  
  
**25/03/23: (20:24 PM )** Implemented testInsertBooking()- Junit Test and successful.

**25/03/23: (20:30 PM )** Added PaymentDaoInterface with Features 1-4.  
  
**25/03/23: (20:35 PM )** Implemented findAllPayments() method.  
  
**25/03/23: (20:55 PM )** Implemented testFindAllPayment() - Junit Test and Successful  
  
**25/03/23: (21:35 PM )** Implemented findPaymentById(int paymentId) method.  
  
**25/03/23: (21:37 PM )** Implemented testFindPaymentById() - Junit Test and Successful  
  
**25/03/23: (21:42 PM )** Implemented deletePaymentById(int paymentId) method.

**25/03/23: (21:45 PM )** Implemented testDeletePaymentId() - Junit Test and Successful  
  
**25/03/23: (22:10 PM )** Implemented insertPayment(Payment payment) method.  
  
**25/03/23: (22:13 PM )** Implemented testInsertPayment()- Junit Test and successful.  
  
  
 **SUNDAY: 26/03/23  
26/03/23: (12:00 AM )** Created a new database setup to add numbers as the primary keys instead of just ids.

**26/03/23: (12:40 AM )** Modified All parts with Customers to work with new database  
  
**26/03/23: (03:01 AM )** Modified All parts with Airports to work with new database  
  
**26/03/23: (03:24 AM )** Modified All parts with Flights to work with new database  
  
**26/03/23: (03:56 AM )** Modified All parts with Bookings to work with new database  
  
**26/03/23: (04:10 AM )** Modified All parts with Payments to work with new database  
  
**26/03/23: (04:55 AM )** Since I have finished working on all the features for this week. Time to make up my menu system. So I made up my menu to be able to handle wrong input and probably never break and run on a loop. Then added in the initial menu and submenu structure. I thought of the errors that might rise up due to foreign key constraints so in that case I will finish up the easy display all methods.  
  
**26/03/23: (05:35 AM )** Just added the findByNumber() methods was quite straightforward. Note that already in the MySqlDao for the respective entities I already had lowercase implemented there to make sure that it prevents errors from arising.  
  
**26/03/23: (13:42 PM )** Since I am working on all 5 of my entities I have to check for foreign key constraints before I can delete some entities. Just like Customer which is a parent table for Bookings, I can’t drop a Customer that still has bookings. So I will be making an extra method that when the user wants to drop a customer that already has bookings, the booking will be displayed.  
  
**26/03/23: (13:46 PM )** The deleteAirport is also similar, foreign key constraints on the flighst table, so would have to make findAllFlightsByAirportNumber method.