CS561-WS Homework 1

**Table Schema**

TABLES OVERVIEW

airport(airport\_code, name, city, state)

flight(number, airline, weekdays)

flight\_leg(flight\_number, leg\_number, departure\_airport\_code, scheduled\_departure\_time, arrival\_airport\_code, scheduled\_arrival\_time)

leg\_instance(flight\_number, leg\_number, date, number\_of\_available\_seats, airplane\_id, departure\_airport\_code, departure\_time, arrival\_airport\_code, arrival\_time)

fares(flight\_number, fare\_code, amount, restrictions)

airplane\_type(type\_name, max\_seats, company)

can\_land(airplane\_type\_name, airport\_code)

airplane(airplane\_id, total\_number\_of\_seats, airplane\_type)

seat\_reservation(flight\_number, leg\_number, date, seat\_number, customer\_name, customer\_phone)

TABLES SCHEMA: FORMAT 1 (per ADK SQL Chapter, figure 1.1 example)

Each row of the airport table will hold:

•airport\_code: the unique code which is assigned to the airport

•name: the name of the airport

•city: the city in which the airport is located

•state: the state in which the airport is located

Each row of the flight table will hold:

•number: the number of a flight

•airline: the airline operating that flight

•weekdays: the days of the week on which the flight operates

Each row of the flight\_leg table will hold:

•flight\_number: the flight number

•leg\_number: the leg number of that flight

•departure\_airport\_code: the code of the airport where the flight leg is departing from

•scheduled\_departure\_time: the scheduled departure time of the flight leg

•arrival\_airport\_code: the code of the airport where the flight leg is arriving

•scheduled\_arrival\_time: the scheduled arrival time of the flight leg

Each row of the leg\_instance table will hold:

•flight\_number: the flight number

•leg\_number: the leg number of that flight

•date: the date of that flight leg

•number\_of\_available\_seats: the number of available seats on the flight

•airplane\_id: the identification number of the airplane used on the flight

•departure\_airport\_code: the airport code of the airport from which the flight departs

•departure\_time: the actual departure time of that flight

•arrival\_airport\_code: the airport code of the airport at which the flight arrives

•arrival\_time: the actual arrival time of that flight

Each row of the fares table will hold:

•flight\_number: the number of a flight

•fare\_code: the code of the fare that applies to that flight

•amount: the amount of the cost of the fare

•restrictions: any restrictions that apply to that fare, such as cabin baggage policy or change fees

Each row of the airplane\_type table will hold:

•type\_name: the name of the type of an airplane

•max\_seats: the maximum number of seats that airplane can hold

•company: which company that that airplane belongs to

Each row of the can\_land table will hold:

•airplane\_type\_name: the name of the type of an airplane

•airport\_code: the code of the airport that that holds the airplanes

Each row of the airplane table will hold:

•airplane\_id: the unique identifier of an airplane

•total\_number\_of\_seats: the total number of seats in that airplane

•airplane\_type: the type of that airplane, specified by the type\_name in the airplane\_type table, and specified by airplane\_type\_name in the can\_land table (e.g. Boeing 747, Airbus A380)

Each row of the seat\_reservation table will hold:

•flight\_number: the flight number for a reservation

•leg\_number: the leg number of that flight for that reservation

•date: the date of the flight for that reservation

•seat\_number: the specific seat number that is being reserved

•customer\_name: the customer’s name of whom is making that reservation

•customer\_phone: the customer’s phone number of whom is making that reservation

TABLES SCHEMA: FORMAT 2 (additional way of formatting per class PPT example)

Each row of the AIRPORT table will hold:

*The* airport code (AIRPORT\_CODE) of *the* AIRPORT

*The* name (NAME) of *the* AIRPORT

*The* city (CITY) of *the* AIRPORT

*The* state (STATE) of *the* AIRPORT

Each row of the FLIGHT table will hold:

*The* flight number (NUMBER) of *a* FLIGHT

*The* airline (AIRLINE) operates *that* FLIGHT

*The* days of the week (WEEKDAYS) on which *the* FLIGHT operates

Each row of the FLIGHT\_LEG table will hold:

*The* flight number (FLIGHT\_NUMBER) of *a* flight

*The* leg number (LEG\_NUMBER) of *that* flight

*The* code of the departure airport (DEPARTURE\_AIRPORT\_CODE) of *that* flight

*The* scheduled departure time (SCHEDULED\_DEPARTURE\_TIME) of *the* flight

*The* code of the arrival airport (ARRIVAL\_AIRPORT\_CODE) of *that* flight

*The* scheduled arrival time (SCHEDULED\_ARRIVAL\_TIME) of *the* flight

Each row of the LEG\_INSTANCE table will hold:

*The* flight number (FLIGHT\_NUMBER) of *a* flight

*The* leg number (LEG\_NUMBER) of *that* flight

*The* date (DATE) of *that* flight leg

*The* number of available seats (NUMBER\_OF\_AVAILABLE\_SEATS) on *that* flight

*The* identification number of the airplane (AIRPLANE\_ID) used on *that* flight

*The* airport code of the airport (DEPARTURE\_AIRPORT\_CODE) from which *that* flight departs

Each row of the FARES table will hold:

*The* number of a flight (FLIGHT\_NUMBER) of *a* flight

*The* code of the fare (FARE\_CODE) that applies to *that* flight

*The* amount (AMOUNT) of the cost of *the* FARE

*The* restrictions (RESTRICTIONS) that apply to *that* FARE

Each row of the AIRPLANE\_TYPE table will hold:

*The* name of the airplane type (TYPE\_NAME)

*The* maximum number of seats (MAX\_SEATS) of *that* airplane

*The* company (COMPANY) that an airplane belongs to

Each row of the CAN\_LAND table will hold:

*The* name of the type (AIRPLANE\_TYPE\_NAME) of *the* airport

*The* code of *the* airport (AIRPORT\_CODE)

Each row of the AIRPLANE table will hold:

*The* unique identifier (AIRPLANE\_ID) of *an* AIRPLANE

*The* total number of seats (TOTAL\_NUMBER\_OF\_SEATS) in *that* AIRPLANE

*The* airplane type (AIRPLANE\_TYPE) of *that* AIRPLANE

Each row of the SEAT\_RESERVATION table will hold:

*The* flight number (FLIGHT\_NUMBER) for *a* SEAT\_RESERVATION

*The* leg number (LEG\_NUMBER) of that flight for *that* SEAT\_RESERVATION

*The* date (DATE) of the flight for *that* SEAT\_RESERVATION

*The* seat number (SEAT\_NUMBER) for *that* reserved SEAT\_RESERVATION

*The* customer’s name (CUSTOMER\_NAME) of whom is making *that* SEAT\_RESERVATION

*The* customer’s phone number (CUSTOMER\_PHONE) of whom is making *that* reservation

INSTANCE EXAMPLES

Instance example for the airport table:

|  |  |  |  |
| --- | --- | --- | --- |
| airport\_code | name | city | state |
| JFK | John F. Kennedy | New York | New York |
| LAX | Los Angeles | Los Angeles | California |
| SFO | San Francisco | San Francisco | California |
| SEA | Seattle-Tacoma | Seattle | Washington |
| MIA | Miami International | Miami | Florida |
| EWR | Newark liberty international airport | Newark | New jersey |

*airport table*

Instance example of the flight table:

|  |  |  |
| --- | --- | --- |
| Number | airline | weekdays |
| B6264 | JetBlue Airways | Mon, Wed, Tue, Thur, Sat |
| UA2072 | United Airlines | Tue, Thur, Fri |
| AA2748 | American Airlines | Mon, Wed, Fri, Sun |
| AS298 | Alaska Airlines | Daily |
| DL386 | Delta Airlines | Wed, Fri,Tue |

*flight table*

Instance example of the flight\_leg table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| flight\_number | leg\_number | departure\_airport\_code | scheduled\_departure\_time | arrival\_airport\_code | scheduled\_arrival\_time |
| B6264 | 1 | JFK | 7:00 AM | LAX | 10:00 AM |
| UA2072 | 2 | LAX | 12:00 PM | SFO | 3:00 PM |
| AA2748 | 3 | SFO | 6:00 AM | EWR | 9:00 AM |
| AS298 | 1 | SEA | 8:00 AM | JFK | 11:00 AM |
| DL386 | 2 | MIA | 2:00 PM | LAX | 5:00 PM |

*flight\_leg table*

Instance example of the leg\_instance table:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| flight\_number | leg\_number | date | number\_of\_available\_seats | airplane\_id | departure\_airport\_code | departure\_time | arrival\_airport\_code | arrival\_time |
| B6264 | 1 | 01/01/2022 | 150 | N123AA | JFK | 7:00 AM | LAX | 10:00 AM |
| UA2072 | 2 | 01/02/2022 | 200 | G456BA | LAX | 12:00 PM | SFO | 3:00 PM |
| AA2748 | 3 | 01/03/2022 | 175 | D789DL | SFO | 6:00 AM | EWR | 9:00 AM |
| AS298 | 1 | 01/04/2022 | 180 | U101UA | SEA | 8:00 AM | JFK | 11:00 AM |
| DL386 | 2 | 01/05/2022 | 190 | S567SW | MIA | 2:00 PM | LAX | 5:00 PM |

*leg\_instance table*

Instance example of the fares table:

|  |  |  |  |
| --- | --- | --- | --- |
| flight\_number | fare\_code | amount | restrictions |
| B6264 | C | $500 | No refunds or changes |
| UA2072 | F | $1000 | 3pc |
| AA2748 | D | $400 | No refunds or changes |
| AS298 | A | $800 | 2pc |
| DL386 | B | $300 | No refunds or changes |

*fares table*

Instance example of the airplane\_type table:

|  |  |  |
| --- | --- | --- |
| type\_name | max\_seats | company |
| A320 | 200 | Airbus |
| B737 | 200 | Boeing |
| A321 | 350 | Airbus |
| A380 | 400 | Boeing |
| B747 | 300 | Boeing |

*airplane\_type table*

Instance example of can\_land table:

|  |  |
| --- | --- |
| airplane\_type\_name | airport\_code |
| Boeing 747 | LAX |
| Boeing 747 | SFO |
| Airbus A380 | EWR |
| Airbus A380 | JFK |
| Boeing 737 | LAX |
| Boeing 737 | LAX |

*can\_land table*

Instance example of the airplane table:

|  |  |  |
| --- | --- | --- |
| airplane\_id | total\_number\_of\_seats | airplane\_type |
| AA0001 | 200 | Boeing 747 |
| AA0002 | 200 | Boeing 747 |
| DL0003 | 350 | Airbus A380 |
| UA0004 | 400 | Airbus A380 |
| SW0005 | 300 | Boeing 737 |

*airplane table*

Instance example of the seat\_reservation table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| flight\_number | leg\_number | date | seat\_number | customer\_name | customer\_phone |
| B6264 | 1 | 12/11/2022 | 12A | John Smith | 703-555-1234 |
| UA2072 | 2 | 11/22/2022 | 14B | Jane Doe | 206-555-5678 |
| AA2748 | 3 | 11/31/2022 | 8C | Michael Brown | 732-555-9101 |
| AS298 | 1 | 12/27/2022 | 18D | Emma Watson | 734-555-2468 |
| DL386 | 2 | 01/01/2022 | 21E | David Wilson | 201-555-3333 |

*seat\_reservation table*

**Table Schema & Relationships**

A diagram with tables connected by key relationships:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| LEG\_INSTANCE | | | | | | | | |
| FLIGHT\_  NUMBER | LEG\_  NUMBER | DATE | NUMBER\_OF\_  AVAILABLE\_  SEATS | AIRPLANE  \_ID | DEPARTURE\_  AIRPORT\_  CODE, | DEPARTURE\_  TIME | ARRIVAL\_  AIRPOR\_  CODE | ARRIVAL\_  TIME |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| FLIGHT\_LEG | | | | | |
| FLIGHT\_  NUMBER | LEG\_  NUMBER | DEPARTURE\_  AIRPORT\_  CODE | SCHEDULED\_  DEPARTURE\_  TIME | ARRIVAL\_  AIRPORT\_  CODE | SCHEDULED\_  DEPARTURE\_  TIME |

|  |  |  |
| --- | --- | --- |
| FLIGHT | | |
| NUMBER | AIRLINE | WEEKDAYS |

|  |  |  |  |
| --- | --- | --- | --- |
| AIRPORT | | | |
| AIRPORT\_CODE | NAME | CITY | STATE |

|  |  |
| --- | --- |
| CAN\_LAND | |
| AIRPLANE\_TYPE\_NAME | AIRPORT\_CODE |

|  |  |  |
| --- | --- | --- |
| AIRPLANE | | |
| AIRPLANE\_ID | TOTAL\_NUMBER\_OF\_SEATS | AIRPLANE\_TYPE |

|  |  |  |
| --- | --- | --- |
| AIRPLANE\_TYPE | | |
| TYPE\_NAME | MAX\_SEATS | COMPANY |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SEAT\_RESERVATION | | | | | |
| FLIGHT\_  NUMBER | LEG\_  NUMBER | DATE | SEAT\_NUMBER | CUSTOMER\_  NAME | CUSTOMER\_  PHONE |

|  |  |  |  |
| --- | --- | --- | --- |
| FARES | | | |
| FLIGHT\_NUMBER | FARE\_CODE | AMOUNT | RESTRICTIONS |