FlyNow

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Entities and Attributes Description

- **Airline:** An airline will have a unique name and will have airplanes to take customers to destinations.
- **Airplanes:** Airplanes, defined by their registration numbers, go on flights to take customers to destinations.
- **Account:** An account will have a name associated with it, along with a unique email address that ties it to the account. A customer will be able to view their past and future bookings in their account. In addition each account will have a type of an account such as customer who can only make bookings, search flights and look at their flight history. Will have a unique name, along with administrative privileges which will allow full access to all records. Partners will have access to their performance stats compared to other partners. Partners have more privileges than customers, but still below administrators.
- **Flights:** Will have a unique destination that customers can book. Each flight also has seat capacity if the flight capacity becomes zero then the customer will not be able to book that flight. Each flight will depart from an origin on a certain date along with the time to a specific destination with arrival time. Cost will be determined by popularity and destination ie. distance from home airport.
- **Payment:** For a successful reservation, the customer must enter credit card details, and the payment must go through. Customers can have multiple payment options stored in their account.

Relationships:
- Accounts have payment information
- Airlines have accounts
- Airlines have airplanes
- Airplanes take flights
- Accounts save flights

Attributes of Entities:
- Airlines: Name
- Airplanes: RegistrationID, Capacity
- Accounts: Email address, password, type
- Flights: Flight No., DateOfFlight/TimeOfFlight, Origin, Destination, Cost, Flight Number
- Payment Information: Name, credit card number, expiry date, cvv number

Schemas:

Accounts(<u>Type</u>, <u>Email Address</u>, Password)

Have(<u>Type</u>, <u>Email Address</u>, <u>Credit Card</u>)

PaymentInformation(CVV,Expiry,<u>CreditCardNumber</u>,Name)

Have(<u>Name</u>, <u>Email Address</u>, <u>Type</u>)

Airlines(<u>Name)</u>
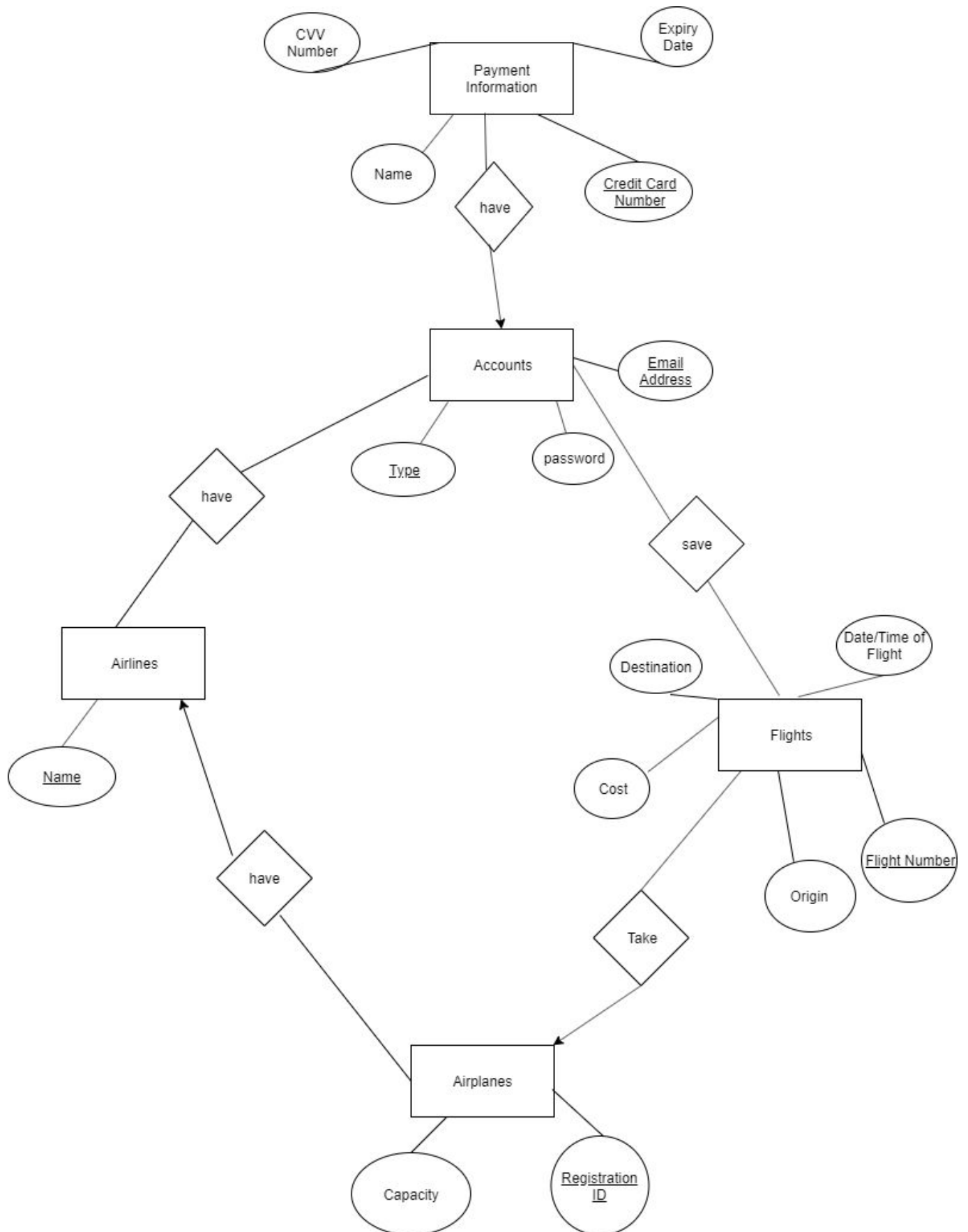
Have(<u>Name</u>,<u>RegistrationID</u>)

Airplanes(Capacity, <u>RegistrationID</u>)

Take(<u>RegistrationID</u>,<u>FlightNumber</u>)

Flights(<u>FlightNumber</u>,Cost,Destination,Date/TimeOfFlight, Origin)

Save(<u>FlightNumber</u>, <u>Type</u>, <u>Email Address</u>)

An Entity-Relationship (ER) diagram showing the following:

Payment Information (entity) with attributes:
- CVV Number
- Expiry Date
- Name
- Credit Card Number (key)

Payment Information — **have** (relationship) → **Accounts**

Accounts (entity) with attributes:
- Email Address (key)
- Type (key)
- password

Accounts — **have** (relationship) → **Airlines**

Accounts — **save** (relationship) → **Flights**

Airlines (entity) with attribute:
- Name (key)

Airlines — **have** (relationship) → **Airplanes**

Flights (entity) with attributes:
- Destination
- Date/Time of Flight
- Cost
- Origin
- Flight Number (key)

Flights — **Take** (relationship) → **Airplanes**

Airplanes (entity) with attributes:
- Capacity
- Registration ID (key)

Screenshots

```
[mysql> show tables;
+----------------+
| Tables_in_cs157a |
+----------------+
| accounts       |
| airlines       |
| airplanes      |
| emp            |
| flights        |
| payment        |
+----------------+
6 rows in set (0.00 sec)
```

Accounts

```
[mysql> SELECT*FROM accounts;
+------+---------------+-------------------+----------+----------+
| id   | name          | email             | password | type     |
+------+---------------+-------------------+----------+----------+
|    1 | Alex Gauss    | alexg@gmail.com   | alpha1   | customer |
|    2 | John Brown    | john@yahoo.com    | alpha2   | customer |
|    3 | Oscar Tran    | otran@united.com  | united1  | admin    |
|    4 | Josh Garland  | garlandj@yahoo.com| alpha3   | customer |
|    5 | Jennifer Tran | jent@alaska.com   | alska1   | admin    |
|    6 | Tony Gonzales | tony@gmail.com    | alpha2   | customer |
|    7 | Reyna Sanchez | reyna@icloud.com  | alpha7   | customer |
|    8 | Tim Cruz      | tim@icloud.com    | alpha8   | customer |
|    9 | John Fox      | johnf@spirit.com  | spirit1  | admin    |
|   10 | Erick DeLaCruz| erikd@yahoo.com   | alpha10  | customer |
|   11 | Scott Smith   | scott@delta.com   | delta1   | admin    |
|   12 | Tim Wu        | timwu@ucla.edu    | ucla1    | partner  |
|   13 | Jarret Neal   | jarret@rpl.com    | rpl1     | customer |
|   14 | Jeff Smisek   | jeff@aa.com       | aa11     | admin    |
|   15 | Hector Garcia | hectorg@gmail.com | alpha15  | customer |
+------+---------------+-------------------+----------+----------+
15 rows in set (0.00 sec)
```

Airlines

```
[mysql> select * from airlines
[     -> ;
+-----------------+
| Name            |
+-----------------+
| Delta           |
| American        |
| Southwest       |
| Spirit          |
| British         |
| Frontier        |
| United          |
| Alaska          |
| Sun Country     |
| Air Canada      |
| Virgin Atlantic |
| Swift           |
| Hawaiian        |
| Atlas           |
| WestJet         |
+-----------------+
15 rows in set (0.00 sec)
```

Airplanes

```
[mysql> select * from airplanes;
+----------+----------------+
| Capacity | RegistrationID |
+----------+----------------+
|      150 |              1 |
|      180 |              2 |
|      100 |              3 |
|      300 |              4 |
|      305 |              5 |
|      390 |              6 |
|      120 |              7 |
|      240 |              8 |
|      220 |              9 |
|      211 |             10 |
|      115 |             11 |
|      135 |             12 |
|      230 |             13 |
|      115 |             14 |
|      220 |             15 |
+----------+----------------+
15 rows in set (0.00 sec)
```

Flights

```
mysql> select * from flights
    -> ;
+--------------+------------------------------------+--------+-------------+------+
| FlightNumber | DateAndTime                        | Origin | Destination | cost |
+--------------+------------------------------------+--------+-------------+------+
|          700 | Date: 10/15/2019 Time: 05:00       | SJC    | JFK         |  450 |
|          701 | Date: 10/15/2019 Time: 05:30       | SJC    | LAX         |  150 |
|          702 | Date: 10/15/2019 Time: 06:30       | SJC    | ATL         |  350 |
|          703 | Date: 10/15/2019 Time: 06:30       | SJC    | EWR         |  400 |
|          704 | Date: 10/15/2019 Time: 07:00       | SJC    | LHR         |  850 |
|          705 | Date: 10/15/2019 Time: 07:00       | SJC    | ORD         |  320 |
|          706 | Date: 10/15/2019 Time: 07:15       | SJC    | DEN         |  140 |
|          707 | Date: 10/15/2019 Time: 07:25       | SJC    | DTW         |  340 |
|          708 | Date: 10/15/2019 Time: 07:35       | SJC    | SEA         |  230 |
|          709 | Date: 10/15/2019 Time: 07:35       | SJC    | PHX         |  170 |
|          710 | Date: 10/15/2019 Time: 07:35       | SJC    | BOS         |  460 |
|          711 | Date: 10/15/2019 Time: 07:55       | SJC    | PHL         |  510 |
|          712 | Date: 10/15/2019 Time: 08:05       | SJC    | HNL         |  330 |
|          713 | Date: 10/15/2019 Time: 08:25       | SJC    | DCA         |  560 |
|          714 | Date: 10/15/2019 Time: 08:30       | SJC    | SAN         |  190 |
+--------------+------------------------------------+--------+-------------+------+
15 rows in set (0.00 sec)
```

Payment

```
mysql> SELECT*FROM payment;
+------+----------------+------------------+------+------+
| id   | name           | credit_card_no   | exp  | cvv  |
+------+----------------+------------------+------+------+
|    1 | Alex Garcia    | 6413625661163430 | 1220 |  214 |
|    2 | Reyna Garcia   | 6222384775097583 |  722 |  322 |
|    3 | Rafael Torres  | 6580836811650997 |  823 |  124 |
|    4 | Jeff Clark     | 8452210526303399 |  124 |  301 |
|    5 | Kayleen Layton | 6448218752951564 |  221 |  432 |
|    6 | David Dinh     | 6041186089540634 |  424 |  201 |
|    7 | Ana Garcia     | 8877067610005410 |  720 |  101 |
|    8 | Jade Johnson   | 8767970686464209 |  523 |  145 |
|    9 | Tim Roy        | 1480305271816688 |  320 |  133 |
|   10 | Sean Tran      | 4536407924908590 |  221 |  565 |
|   11 | Fernando Gomez | 9983764433020755 | 1122 |  432 |
|   12 | Jimmy Nguyen   | 7253140063816935 | 1023 |  344 |
|   13 | Daniel Cruz    | 8914708309701864 |  922 |  225 |
|   14 | Juan Sanchez   | 9731475469793705 | 1021 |  653 |
|   15 | Vannessa Smith | 1019089888691050 |  823 |  762 |
+------+----------------+------------------+------+------+
15 rows in set (0.00 sec)
```