12171483_NamChanghyeon_Database for ITS company

Database for ITS company

This report is about Database midterm assignment. In the report, there are Desription for each table and SQL script for each table and result from colab notebook. Instead of ERD model file, I'm submitting EER diagram model file(.mwb file) and .sql file from Mysql workbench. (I used Workbench instead of ERWIN modeller because mac doesn't supprot ERWIN modeller.)

Github link (jupyter notebook)

link : https://github.com/changhyeonnam/DBCourse/blob/main/midterm.ipynb

Environment

- SQL : Mysql 8.0.30
- SQL ide : Mysql workbench 8.0
- OS: Mac os
- Language: python 3.8

ERD model diagram (=EER model diagram)

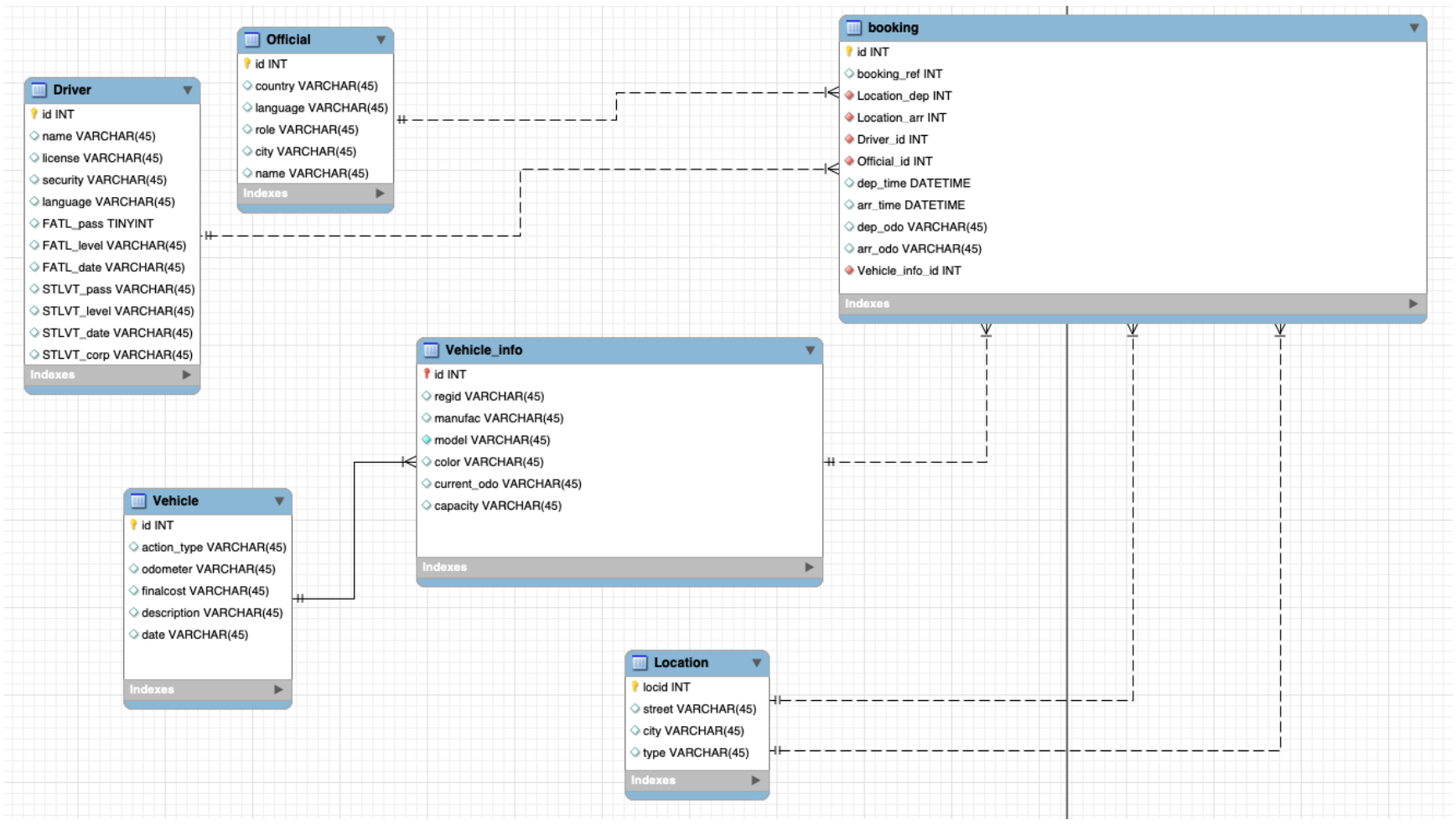

Table Description

There are 6 tables. I explained each table below.

1. Booking table

COL	DESC
id	Primary key for Booking table
booking_ref	refernce id for booking
Location_dep	Location id(foreign key) for departure address from Location table

COL	DESC
Location_arr	Location id(foreign key) for arrival address from Location table
Vehicle_id	Vehicle id(foreign key) from Vehicle_info table
Driver_id	Driver id(foreign key) from Driver table
Official_id	Official id (foreign key) from Official table
dep_time	departure time
arr_time	arrival time
dep_odo	departure odometer
arr_odo	arrival odometer

2. location table

COL	DESC
locid	primary key for location table
street	street address
city	city nubmer (8-digit)
type	address type

3. Vehicle_info table

COL	DESC
Vehicle_id	primary key for vehicle_info table, foreign key from Vehicle table
regid	Registration Id
manufac	Model
color	Color
current_odo	current odometer
capacity	capcity for vehicle

4. Vehicle table

COL	DESC
Vehicle_id	primary key for vehicle table
action_type	whether maintenance or repair
odometer	current odometer
finalcost	cost for action (maintenance or repair)
description	desc for action (maintenance or repair)
date	date for action (maintenance or repair)

5. Official table

COL	DESC
id	primary key for official table
language	official’s language
role	official’s role
city	current odometer
name	capcity for vehicle

6. Driver table

COL	DESC
id	primary key for Driver table
name	name
license	License for driver
security	security for driver

COL	DESC
FATL_pass	FATL : Pass or not
FATL_level	FATL LEVEL
FATL_date	FATL passed date
STLVT_pass	STLVT : Pass or not
STLVT_level	STLVT LEVEL
STLVT_date	STLVT passed date
STLVT_corp	STLVT corporation

Script

I will explain script for each table.

1. Booking table

- A script for creating tables

```
CREATE TABLE `booking` (
  `id` int NOT NULL,
  `booking_ref` int DEFAULT NULL,
  `Location_dep` int NOT NULL,
  `Location_arr` int NOT NULL,
  `Vehicle_id` int NOT NULL,
  `Driver_id` int NOT NULL,
  `Official_id` int NOT NULL,
  `dep_time` datetime DEFAULT NULL,
  `arr_time` datetime DEFAULT NULL,
  `dep_odo` varchar(45) DEFAULT NULL,
  `arr_odo` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`id`),
  KEY `fk_booking_location_idx` (`Location_dep`),
  KEY `fk_booking_location1_idx` (`Location_arr`),
  KEY `fk_booking_Vehicle1_idx` (`Vehicle_id`),
  KEY `fk_booking_driver1_idx` (`Driver_id`),
  KEY `fk_booking_Official1_idx` (`Official_id`),
  CONSTRAINT `fk_booking_driver1` FOREIGN KEY (`Driver_id`) REFERENCES `Driver` (`id`),
  CONSTRAINT `fk_booking_location` FOREIGN KEY (`Location_dep`) REFERENCES `Location` (`locid`),
  CONSTRAINT `fk_booking_location1` FOREIGN KEY (`Location_arr`) REFERENCES `Location` (`locid`),
  CONSTRAINT `fk_booking_Official1` FOREIGN KEY (`Official_id`) REFERENCES `Official` (`id`),
  CONSTRAINT `fk_booking_Vehicle1` FOREIGN KEY (`Vehicle_id`) REFERENCES `Vehicle` (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb3;
```

- A script for inserting records into tables

```
INSERT INTO `booking` VALUES (1,23,1,2,1,1,1,'2022-10-01 12:30:30','2022-10-01 11:30:30','4400','4350');
INSERT INTO `booking` VALUES (2,24,2,1,2,2,2,'2022-10-01 12:35:30','2022-10-01 10:30:30','2200','2195');
INSERT INTO `booking` VALUES (3,25,3,2,3,3,3,'2022-10-02 12:30:30','2022-10-01 09:30:30','1000','509');
```

2. location table

- A script for creating tables

```
CREATE TABLE `Location` (
  `locid` int NOT NULL,
  `street` varchar(45) DEFAULT NULL,
  `city` varchar(45) DEFAULT NULL,
  `type` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`locid`)
```

- A script for inserting records into tables

```
INSERT INTO `Location` VALUES (1,'563, Wondang-daero, Seo-gu, Incheon ','23090770','library');
INSERT INTO `Location` VALUES (2,'8-13, Simgok-ro 100beon-gil, Seo-gu, Incheon','23090590','school');
INSERT INTO `Location` VALUES (3,'131-24, Chamoejeon-ro, Jung-gu, Incheon','23310380','church');
```

3. Vehicle_info table

- A script for creating tables

```
CREATE TABLE `Vehicle_info` (
  `Vehicle_id` int NOT NULL,
  `regid` varchar(45) DEFAULT NULL,
  `manufac` varchar(45) DEFAULT NULL,
  `model` varchar(45) DEFAULT NULL,
  `color` varchar(45) DEFAULT NULL,
  `current_odo` varchar(45) DEFAULT NULL,
  `capacity` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`Vehicle_id`),
  KEY `fk_Vehicle_info_Vehicle1_idx` (`Vehicle_id`),
  CONSTRAINT `fk_Vehicle_info_Vehicle1` FOREIGN KEY (`Vehicle_id`) REFERENCES `Vehicle` (`id`)
```

- A script for inserting records into tables

```
INSERT INTO `Vehicle_info` VALUES (1,'2001ABC','Volvo','XC90SE','Silver','4350','4');
INSERT INTO `Vehicle_info` VALUES (2,'2006AFD','Kia','K7','Black','2195','4');
INSERT INTO `Vehicle_info` VALUES (3,'2021AHR','Tesla','2020F','White','509','2');
```

---

4. Vehicle table

- A script for creating tables

```
CREATE TABLE `Vehicle` (
  `id` int NOT NULL,
  `action_type` varchar(45) DEFAULT NULL,
  `odometer` varchar(45) DEFAULT NULL,
  `finalcost` varchar(45) DEFAULT NULL,
  `description` varchar(45) DEFAULT NULL,
  `date` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb3;
```

- A script for inserting records into tables

```
INSERT INTO `Vehicle` VALUES (1,'R','4350','3000','wheel repaired','20220809');
INSERT INTO `Vehicle` VALUES (2,'M','2195','3000','wheel pressure','20220810');
INSERT INTO `Vehicle` VALUES (3,'R','509','4000','break','20220811');
```

---

5. Official table

- A script for creating tables

```
CREATE TABLE `Official` (
  `id` int NOT NULL,
  `country` varchar(45) DEFAULT NULL,
  `language` varchar(45) DEFAULT NULL,
  `role` varchar(45) DEFAULT NULL,
  `city` varchar(45) DEFAULT NULL,
  `name` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb3;
```

- A script for inserting records into tables

```
INSERT INTO `Official` VALUES (1,'KR','ko','coach','23090770','Kim');
INSERT INTO `Official` VALUES (2,'JP','ja','judge','23310360','Nakamura');
```

---

6. Driver table

- A script for creating tables

```
CREATE TABLE `Driver` (
  `id` int NOT NULL,
  `name` varchar(45) DEFAULT NULL,
  `license` varchar(45) DEFAULT NULL,
```

```
  `security` varchar(45) DEFAULT NULL,
  `language` varchar(45) DEFAULT NULL,
  `FATL_pass` tinyint DEFAULT NULL,
  `FATL_level` varchar(45) DEFAULT NULL,
  `FATL_date` varchar(45) DEFAULT NULL,
  `STLVT_pass` varchar(45) DEFAULT NULL,
  `STLVT_level` varchar(45) DEFAULT NULL,
  `STLVT_date` varchar(45) DEFAULT NULL,
  `STLVT_corp` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`id`)
```

- A script for inserting records into tables

```
INSERT INTO `Driver` VALUES (1,'Nam','123456789000000000','1','ko',1,'3','20220910','1','3','20220910','samsung');
INSERT INTO `Driver` VALUES (2,'Lee','123456789000000001','2','ja',1,'4','20220910','1','4','20220910','samsung');
INSERT INTO `Driver` VALUES (3,'Kim','123456789000000002','3','en',1,'5','20220910','1','5','20220910','samsung');
```

Result from Jupyterbook (colab)

In [2]:
```
!pip3 install pymysql
```

```
Collecting pymysql
  Downloading PyMySQL-1.0.2-py3-none-any.whl (43 kB)
     |████████████████████████████████| 43 kB 4.7 MB/s eta 0:00:011
Installing collected packages: pymysql
Successfully installed pymysql-1.0.2
WARNING: You are using pip version 20.2.3; however, version 22.3 is available.
You should consider upgrading via the '/Library/Frameworks/Python.framework/Versions/3.8/bin/python3.8 -m pip install
--upgrade pip' command.
```

In [1]:
```
import pymysql

import pandas as pd
```

Connecting existing Database

In [3]:
```
conn=pymysql.connect(host='localhost',port=int(3306),user='root',passwd='password',db='mydb')
```

In [20]:
```
cursor = conn.cursor(pymysql.cursors.DictCursor)
```

In [9]:
```
booking_df=pd.read_sql_query("SELECT * FROM booking ",conn)
```

In [10]:
```
booking_df
```

Out[10]:

	id	booking_ref	Location_dep	Location_arr	Vehicle_id	Driver_id	Official_id	dep_time	arr_time	dep_odo	arr_odo
0	1	23	1	2	1	1	1	2022-10-01 12:30:30	2022-10-01 11:30:30	4400	4350
1	2	24	2	1	2	2	2	2022-10-01 12:35:30	2022-10-01 10:30:30	2200	2195
2	3	25	3	2	3	3	3	2022-10-02 12:30:30	2022-10-01 09:30:30	1000	509

In [11]:
```
driver_df=pd.read_sql_query("SELECT * FROM driver ",conn)
```

In [13]:
```
driver_df
```

Out[13]:

	id	name	license	security	language	FATL_pass	FATL_level	FATL_date	STLVT_pass	STLVT_level	STLVT_date	STLVT_corp
0	1	Nam	123456789000000000	1	ko	1	3	20220910	1	3	20220910	samsung
1	2	Lee	123456789000000001	2	ja	1	4	20220910	1	4	20220910	samsung
2	3	Kim	123456789000000002	3	en	1	5	20220910	1	5	20220910	samsung

In [14]:
```
location_df=pd.read_sql_query("SELECT * FROM location ",conn)
```

In [16]:
```
location_df
```

Out[16]:

	locid	street	city	type
0	1	563, Wondang-daero, Seo-gu, Incheon\t	23090770	library
1	2	8-13, Simgok-ro 100beon-gil, Seo-gu, Incheon	23090590	school
2	3	131-24, Chamoejeon-ro, Jung-gu, Incheon	23310380	church

In [17]:
```
official_df=pd.read_sql_query("SELECT * FROM official ",conn)
```

In [18]:
```
official_df
```

Out[18]:

	id	country	language	role	city	name
0	1	KR	ko	coach	23090770	Kim
1	2	JP	ja	judge	23310360	Nakamura
2	3	US	en	coach	23310110	Haword

In [23]:
```
vehicle_df=pd.read_sql_query("SELECT * FROM vehicle ",conn)
```

In [24]:
```
vehicle_df
```

Out[24]:

	id	action_type	odometer	finalcost	description	date
0	1	R	4350	3000	wheel repaired	20220809
1	2	M	2195	3000	wheel pressure	20220810
2	3	R	509	4000	break	20220811

In [25]:
```
vehicle_info_df=pd.read_sql_query("SELECT * FROM vehicle_info",conn)
```

In [26]:
```
vehicle_info_df
```

Out[26]:

	Vehicle_id	regid	manufac	model	color	current_odo	capacity
0	1	2001ABC	Volvo	XC90SE	Silver	4350	4
1	2	2006AFD	Kia	K7	Black	2195	4
2	3	2021AHR	Tesla	2020F	White	509	2

In [27]:
```
location_df=pd.read_sql_query("SELECT * FROM location",conn)
```

In [28]:
```
location_df
```

Out[28]:

	locid	street	city	type
0	1	563, Wondang-daero, Seo-gu, Incheon\t	23090770	library
1	2	8-13, Simgok-ro 100beon-gil, Seo-gu, Incheon	23090590	school
2	3	131-24, Chamoejeon-ro, Jung-gu, Incheon	23310380	church

Inserting Data ¶

In [23]:
```
insert_data = [[4, '98, Simgok-ro, Seo-gu, Incheon', '23749999','company']]
insert_sql = "INSERT INTO location VALUES (%s, %s, %s, %s);"
cursor.executemany(insert_sql, insert_data)
```

Out[23]: 1

Display Data

In [24]:
```
location_df=pd.read_sql_query("SELECT * FROM location",conn)
```

In [25]:
```
location_df
```

Out[25]:

	locid	street	city	type
0	1	563, Wondang-daero, Seo-gu, Incheon\t	23090770	library
1	2	8-13, Simgok-ro 100beon-gil, Seo-gu, Incheon	23090590	school
2	3	131-24, Chamoejeon-ro, Jung-gu, Incheon	23310380	church
3	4	98, Simgok-ro, Seo-gu, Incheon	23749999	company