

DESIGN AND IMPLEMENTATION OF RAPIDO CAPTAIN PRODUCTIVITY TRACKING USING ORACLE SQL

1.Introduction:

This project simulates a Rapido-like system to track captain (driver) productivity. It stores information about rides, login/logout sessions, and generates daily performance reports.

The system helps Rapido:

- a) Calculate working hours (active time).
- b) Track rides completed vs cancelled.
- c) Compute earnings.
- d) Analyze captain ratings.
- e) Provide both historical fixed reports (via tables) and real-time analytics (via views).

2.Objectives:

- a) Create a database for captains, rides, and login sessions.
- b) Track earnings, ratings, and online hours.
- c) Automate daily productivity report generation.
- d) Provide a real-time summary view for management.

3.Entities & relationships:

Captains → own rides & sessions.

Rides → linked to captains.

Login_Sessions → linked to captains (tracks online hours).

Daily_Reports → summarized data per captain per day.

4.Database Schema (DDL):

(a)Captains

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The user is logged in as 'Gokul Saran M' with the username 'gok_bes'. The 'SQL Commands' panel is active, showing a SQL command to create a table named 'CAPTAINS'. The command is as follows:

```
1 CREATE TABLE CAPTAINS (  
2   CAPTAIN_ID NUMBER PRIMARY KEY,  
3   NAME VARCHAR2(100) NOT NULL,  
4   CITY VARCHAR2(50) NOT NULL,  
5   PH_NUMBER VARCHAR2(10) UNIQUE,  
6   HIRE_DATE DATE  
7 );  
8
```

The 'Results' panel below shows the message 'Table created.' and the execution time '0.06 seconds'. The bottom status bar indicates the user is 'mgmgokulsaran@gmail.com', the schema is 'gok_bes', and the version is 'Oracle APEX 24.2.6'.

(b)Rides

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The user is logged in as 'Gokul Saran M' with the username 'gok_bes'. The 'SQL Commands' panel is active, showing a SQL command to create a table named 'RIDES'. The command is as follows:

```
1 CREATE TABLE RIDES (  
2   RIDE_ID NUMBER PRIMARY KEY,  
3   CAPTAIN_ID NUMBER REFERENCES CAPTAINS(CAPTAIN_ID),  
4   RIDE_DATE DATE NOT NULL,  
5   STATUS VARCHAR2(20) CHECK (STATUS IN('Completed','Cancelled')),  
6   DISTANCE_km NUMBER(5,2) CHECK (DISTANCE_km > 0),  
7   EARNINGS NUMBER(8,2) CHECK (EARNINGS > 0),  
8   RATING NUMBER(2,1) CHECK (RATING BETWEEN 1 AND 5)  
9 );  
10  
11  
12
```

The 'Results' panel below shows the message 'Table created.' and the execution time '0.05 seconds'. The bottom status bar indicates the user is 'mgmgokulsaran@gmail.com', the schema is 'gok_bes', and the version is 'Oracle APEX 24.2.6'.

(c) Login Sessions

The screenshot shows the Oracle APEX SQL Workshop interface. The browser address bar displays the URL: `oracleapex.com/ords/r/apex/sql-workshop/sqlcommandprocessor?session=113590006907938`. The APEX application is titled "APEX" and the user is logged in as "Gokul Saran M". The "SQL Commands" tab is active, showing a SQL command to create a table named `LOGIN_DETAILS`. The command is as follows:

```
1 CREATE TABLE LOGIN_DETAILS(  
2   CAPTAIN_ID NUMBER REFERENCES CAPTAINS(CAPTAIN_ID),  
3   SESSION_DATE DATE,  
4   LOGIN_TIME TIMESTAMP,  
5   LOGOUT_TIME TIMESTAMP,  
6   HOURS_ACTIVE NUMBER(5,2)  
7 );
```

The "Results" tab shows the message "Table created." and the execution time "0.03 seconds". The footer of the APEX interface indicates the version is "Oracle APEX 24.2.8".

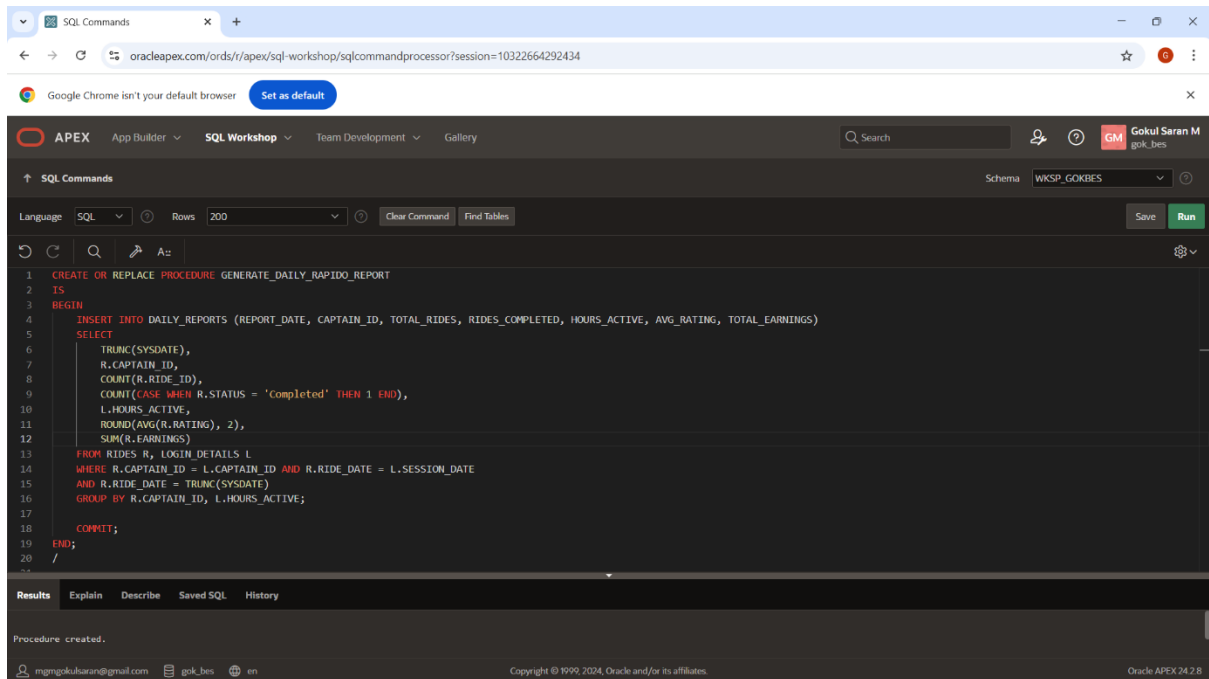
(d) Daily Reports

The screenshot shows the Oracle APEX SQL Workshop interface. The browser address bar displays the URL: `oracleapex.com/ords/r/apex/sql-workshop/sqlcommandprocessor?session=6946113031163`. The APEX application is titled "APEX" and the user is logged in as "Gokul Saran M". The "SQL Commands" tab is active, showing a SQL command to create a table named `DAILY_REPORTS`. The command is as follows:

```
1 CREATE TABLE DAILY_REPORTS (  
2   REPORT_DATE DATE,  
3   CAPTAIN_ID NUMBER REFERENCES CAPTAINS(CAPTAIN_ID),  
4   TOTAL_RIDES NUMBER,  
5   RIDES_COMPLETED NUMBER,  
6   HOURS_ACTIVE NUMBER(5,2),  
7   AVG_RATING NUMBER(3,2),  
8   TOTAL_EARNINGS NUMBER(8,2),  
9   PRIMARY KEY (REPORT_DATE, CAPTAIN_ID)  
10 );  
11
```

The "Results" tab shows the message "Table created." and the execution time "0.05 seconds". The footer of the APEX interface indicates the version is "Oracle APEX 24.2.6".

5. Stored Procedure (Generate Daily Reports):

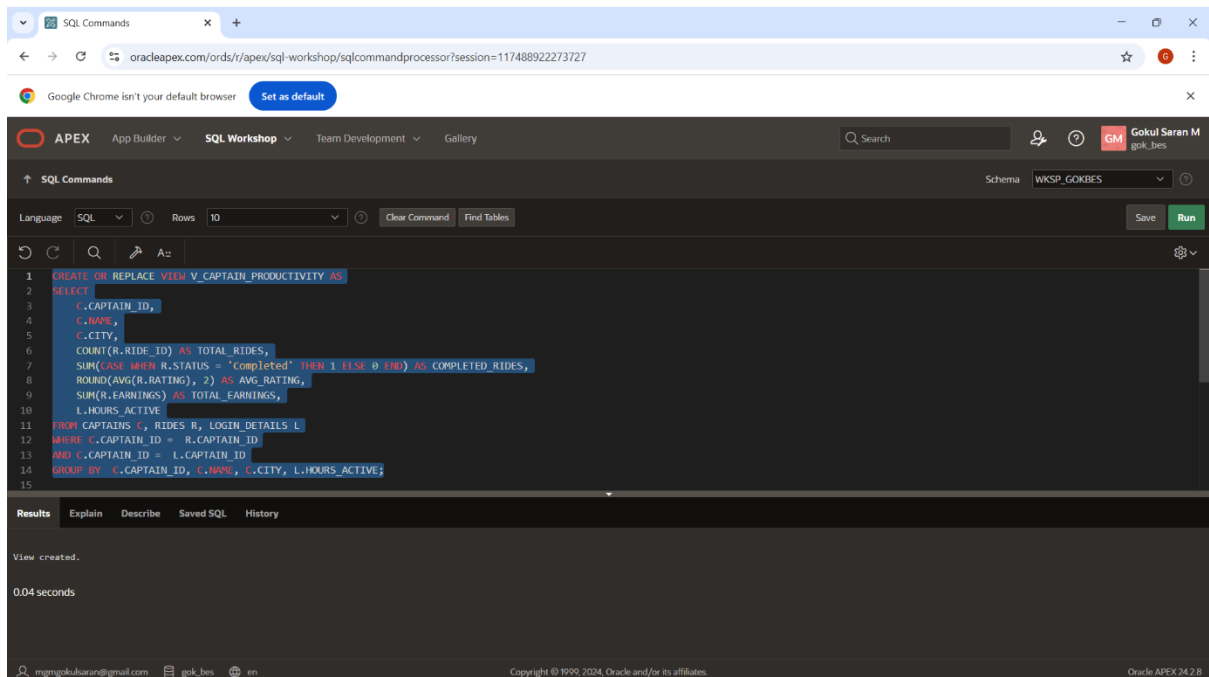


The screenshot shows the Oracle APEX SQL Workshop interface. The browser address bar displays the URL: `oracleapex.com/ords/r/apex/sql-workshop/sqlcommandprocessor?session=10322664292434`. The page title is "SQL Commands". The "Language" dropdown is set to "SQL", and the "Rows" limit is set to "200". The "Schema" dropdown is set to "WKSP_GOKBES". The "Run" button is highlighted in green. The SQL command being executed is:

```
1 CREATE OR REPLACE PROCEDURE GENERATE_DAILY_RAPID_REPORT
2 IS
3 BEGIN
4     INSERT INTO DAILY_REPORTS (REPORT_DATE, CAPTAIN_ID, TOTAL_RIDES, RIDES_COMPLETED, HOURS_ACTIVE, AVG_RATING, TOTAL_EARNINGS)
5     SELECT
6         TRUNC(SYSDATE),
7         R.CAPTAIN_ID,
8         COUNT(R.RIDE_ID),
9         COUNT(CASE WHEN R.STATUS = 'completed' THEN 1 END),
10        L.HOURS_ACTIVE,
11        ROUND(AVG(R.RATING), 2),
12        SUM(R.EARNINGS)
13    FROM RIDES R, LOGIN_DETAILS L
14    WHERE R.CAPTAIN_ID = L.CAPTAIN_ID AND R.RIDE_DATE = L.SESSION_DATE
15    AND R.RIDE_DATE = TRUNC(SYSDATE)
16    GROUP BY R.CAPTAIN_ID, L.HOURS_ACTIVE;
17
18 COMMIT;
19 END;
20 /
```

The "Results" tab is selected, showing the message: "Procedure created."

6.View (Real-time Summary):



The screenshot shows the Oracle APEX SQL Workshop interface. The browser address bar displays the URL: `oracleapex.com/ords/r/apex/sql-workshop/sqlcommandprocessor?session=117488922273727`. The page title is "SQL Commands". The "Language" dropdown is set to "SQL", and the "Rows" limit is set to "10". The "Schema" dropdown is set to "WKSP_GOKBES". The "Run" button is highlighted in green. The SQL command being executed is:

```
1 CREATE OR REPLACE VIEW V_CAPTAIN_PRODUCTIVITY AS
2 SELECT
3     C.CAPTAIN_ID,
4     C.NAME,
5     C.CITY,
6     COUNT(R.RIDE_ID) AS TOTAL_RIDES,
7     SUM(CASE WHEN R.STATUS = 'completed' THEN 1 ELSE 0 END) AS COMPLETED_RIDES,
8     ROUND(AVG(R.RATING), 2) AS AVG_RATING,
9     SUM(R.EARNINGS) AS TOTAL_EARNINGS,
10    L.HOURS_ACTIVE
11 FROM CAPTAINS C, RIDES R, LOGIN_DETAILS L
12 WHERE C.CAPTAIN_ID = R.CAPTAIN_ID
13 AND C.CAPTAIN_ID = L.CAPTAIN_ID
14 GROUP BY C.CAPTAIN_ID, C.NAME, C.CITY, L.HOURS_ACTIVE;
```

The "Results" tab is selected, showing the message: "View created."

0.04 seconds

7. Sample Queries:

(a) Insert Data into Captain Table

```
8  
9 INSERT INTO CAPTAINS(CAPTAIN_ID, NAME, CITY, PH_NUMBER, HIRE_DATE) VALUES(101, 'SARAN', 'MADURAI', '9865138551', '12/2/2022');  
0
```

(b) Insert Data into Rides Table

```
1 INSERT INTO RIDES (RIDE_ID, CAPTAIN_ID, RIDE_DATE, STATUS, DISTANCE_km, EARNINGS, RATING)  
2 VALUES (15, 101, TRUNC(SYSDATE), 'Completed', 9, 135, 5);
```

(c) Insert Data into Login_Details Table

```
1 INSERT INTO LOGIN_DETAILS (CAPTAIN_ID, SESSION_DATE, LOGIN_TIME, LOGOUT_TIME, HOURS_ACTIVE)  
2 VALUES (  
3     107,  
4     TRUNC(SYSDATE),  
5     TIMESTAMP '2025-08-21 09:00:00',  
6     TIMESTAMP '2025-08-21 17:30:00',  
7     ROUND((CAST(TIMESTAMP '2025-08-21 17:30:00' AS DATE)  
8         - CAST(TIMESTAMP '2025-08-21 09:00:00' AS DATE)) * 24, 2)  
9 );
```

(d) Generate Daily Report (Procedure Run)

```
1 BEGIN  
2     generate_daily_rapido_report;  
3 END;
```

(e) View Fixed Reports

```
1 SELECT * FROM DAILY_REPORTS
```

(f) View Real-Time Summary

```
SELECT * FROM V_CAPTAIN_PRODUCTIVITY
```

8. Result:

(a) View Daily_Reports

SQL Commands

oracleapex.com/ords/r/apex/sql-workshop/sqlcommandprocessor?session=10322664292434

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SQL CommandsSchema: WKSP_GOKBES

Language: SQLRows: 200Clear CommandFind TablesSaveRun

1 SELECT * FROM DAILY_REPORTS

Results

ExplainDescribeSaved SQLHistory

REPORT_DATE	CAPTAIN_ID	TOTAL_RIDES	RIDES_COMPLETED	HOURS_ACTIVE	AVG_RATING	TOTAL_EARNINGS
8/21/2025	104	6	5	9	3.83	600
8/21/2025	107	6	4	8.5	3.33	660
8/21/2025	108	7	5	10.5	2.71	510
8/21/2025	102	4	3	8.5	3.25	285
8/21/2025	101	5	5	9.5	4.8	700
8/21/2025	103	6	5	6.5	4	600
8/21/2025	106	4	3	8	3.75	495
8/21/2025	110	9	5	11	1.67	1080
8/21/2025	100	1	1	2.33	5	375
8/21/2025	105	5	5	6.67	3.2	465
8/21/2025	109	8	7	8	3.75	1070

11 rows returned in 0.01 secondsDownload

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(b) View Real-time Summary

SQL Commands

oracleapex.com/ords/r/apex/sql-workshop/sqlcommandprocessor?session=117488922273727

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SQL CommandsSchema: WKSP_GOKBES

Language: SQLRows: 200Clear CommandFind TablesSaveRun

1 SELECT * FROM V_CAPTAIN_PRODUCTIVITY

Results

ExplainDescribeSaved SQLHistory

CAPTAIN_ID	NAME	CITY	TOTAL_RIDES	COMPLETED_RIDES	AVG_RATING	TOTAL_EARNINGS	HOURS_ACTIVE
101	SARAN	MADURAI	5	5	4.8	700	9.5
105	ATHIBAN	TIRUNELVELI	5	5	3.2	465	6.67
108	JEEVA	COIMBATORE	7	5	2.71	510	10.5
110	PRABHAKAR	VELORE	9	5	1.67	1080	11
104	HARISH	SALEM	6	5	3.83	600	9
102	ROHAN	TRICHY	4	3	3.25	285	8.5
106	SUDHAKAR	CHIENNAI	4	3	3.75	495	8
100	GOKUL	CHIENNAI	1	1	5	375	2.33
103	GEORGE	TUTICORIN	6	5	4	600	6.5
109	ANBU	DINDUGAL	8	7	3.75	1070	8

11 rows returned in 0.03 secondsDownload

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Oracle APEX 24.2.8

9. Conclusion:

This project successfully:

1. Captures ride & login details.
2. Tracks earnings, ratings, and productivity.
3. Provides both frozen daily snapshots (via `daily_reports`) and real-time insights (via `V_Captain_Productivity_Summary` view).