



**Department of Computer Science and Engineering**  
**Islamic University of Technology (IUT)**  
A subsidiary organ of OIC

**Lab-4 Report**

**CSE 4508: Relational Database Management System Lab**

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## --TASK 1--

```
SELECT b.bus_id,  
       EXTRACT(YEAR FROM t.trip_date) AS year,  
       EXTRACT(MONTH FROM t.trip_date) AS month,  
       EXTRACT(DAY FROM t.trip_date) AS day,  
       SUM(t.kilometers_traveled) AS  
total_kilometers_traveled, SUM(t.fuel_consumption)  
AS total_fuel_consumption, SUM(t.passengers_count)  
AS total_passengers  
  
FROM trip t  
     JOIN bus b ON t.bus_id = b.bus_id GROUP BY  
b.bus_id,  
  
EXTRACT(YEAR FROM t.trip_date), EXTRACT(MONTH FROM  
t.trip_date), EXTRACT(DAY FROM t.trip_date)  
  
ORDER BY b.bus_id, year, month, day;
```

## --TASK 2--

```
SELECT b.bus_model,  
       EXTRACT(YEAR FROM t.trip_date) AS year,  
       EXTRACT(MONTH FROM t.trip_date) AS month,  
       SUM(t.kilometers_traveled) AS  
total_kilometers_traveled, SUM(t.fuel_consumption)  
AS total_fuel_consumption, SUM(t.passengers_count)
```

```
AS total_passengers
```

```
FROM trip t
  JOIN bus b ON t.bus_id = b.bus_id
  GROUP BY ROLLUP (b.bus_model, EXTRACT(YEAR FROM
t.trip_date), EXTRACT(MONTH FROM t.trip_date))
  ORDER BY b.bus_model, year, month;
```

--TASK 3--

```
SELECT b.bus_model,
  d.depot_name,
  EXTRACT(YEAR FROM t.trip_date) AS year,
  SUM(t.kilometers_traveled) AS
total_kilometers_traveled, SUM(t.fuel_consumption)
AS total_fuel_consumption, SUM(t.passengers_count)
AS total_passengers
```

```
FROM trip t
  JOIN bus b ON t.bus_id = b.bus_id
  JOIN depot d ON t.depot_id = d.depot_id
  GROUP BY CUBE (b.bus_model, d.depot_name,
EXTRACT(YEAR FROM t.trip_date))
  ORDER BY b.bus_model, d.depot_name, year;
```

--TASK 4--

```
SELECT b.bus_model,
  EXTRACT(YEAR FROM t.trip_date) AS year,
```

```
    EXTRACT(MONTH FROM t.trip_date) AS month,  
    SUM(t.kilometers_traveled) AS  
total_kilometers_traveled, SUM(t.fuel_consumption)  
AS total_fuel_consumption, SUM(t.passengers_count)  
AS total_passengers, GROUPING(b.bus_model) AS  
is_bus_model_total, GROUPING(EXTRACT(YEAR FROM  
t.trip_date)) AS is_year_total,  
GROUPING(EXTRACT(MONTH FROM t.trip_date)) AS  
is_month_total
```

```
FROM trip t  
    JOIN bus b ON t.bus_id = b.bus_id  
    GROUP BY ROLLUP (b.bus_model, EXTRACT(YEAR FROM  
t.trip_date), EXTRACT(MONTH FROM t.trip_date))  
    ORDER BY b.bus_model, year, month;
```

### --TASK 5--

```
SELECT b.bus_model,  
    d.depot_name,  
    EXTRACT(YEAR FROM t.trip_date) AS year,  
    SUM(t.kilometers_traveled) AS total_kilometers,  
    SUM(t.fuel_consumption) AS total_fuel_consumption,  
    SUM(t.passengers_count) AS total_passengers
```

```
FROM trip t  
    JOIN bus b ON t.bus_id = b.bus_id  
    JOIN depot d ON t.depot_id = d.depot_id  
    GROUP BY b.bus_model, d.depot_name, EXTRACT(YEAR
```

```
FROM t.trip_date) ORDER BY b.bus_model,  
d.depot_name, year;
```