```sql
-- 1.Show all coffee sales records.
SELECT * from dbo.Coffe_sales;

--2. Distinct coffee names sold.
SELECT distinct coffee_name from dbo.Coffe_sales;

  --3. Find all sales where payment type is card.
  SELECT * from dbo.Coffe_sales
  where cash_type= 'card';

--4.Display sales made in the Morning.
SELECT * from dbo.Coffe_sales
where Time_Of_Day='Morning';

--5.Show sales that happened on Friday.
SELECT * from dbo.Coffe_sales
where Weekday='Fri';

--6.Get all records for the month of March.
SELECT * from dbo.Coffe_sales
where Month_name = 'Mar';

--7.Display transactions where the amount (money) is greater than 30.
SELECT * from dbo.Coffe_sales
where money>30;

  --8.List all sales sorted by money in descending order.
  SELECT * from dbo.Coffe_sales
  order by money desc;

--9.Show coffee sales ordered by hour_of_day.
SELECT * from dbo.Coffe_sales
order by hour_of_day;

--10.Find sales that occurred after 6 PM (hour_of_day > 18).
SELECT * from dbo.Coffe_sales
where hour_of_day > 18;


--?? Intermediate SQL Questions (AGGREGATES, GROUP BY)
--? Coffee-Level Analysis

--11.Total revenue generated overall.
SELECT sum(money) as total_revenue from dbo.Coffe_sales;

--12.Total revenue per coffee type.
SELECT sum(money) as total_revenue,coffee_name
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49  FROM dbo.Coffe_sales group by coffee_name;
50
51  --13.Average price of each coffee.
52  SELECT round(avg(money),2) as avg_price,coffee_name
53  FROM dbo.Coffe_sales group by coffee_name order by avg_price desc;
54
55              --14.Which coffee generated the highest revenue?
56              SELECT TOP 1
57              coffee_name,
58              SUM(money) AS revenue
59              FROM dbo.Coffe_sales
60              GROUP BY coffee_name
61              ORDER BY revenue DESC;
62
63  --15.Number of times each coffee was sold.
64  SELECT coffee_name, COUNT(*) AS total_orders
65  FROM dbo.Coffe_sales
66  GROUP BY coffee_name;
67
68      --16.Top 3 most sold coffee items.
69      SELECT  TOP 3
70      coffee_name,count(*) as orders
71      FROM dbo.Coffe_sales
72      group by coffee_name
73      order by orders desc;
74
75
76  --? Time-Based Analysis
77
78  --17.Total revenue by Time_of_Day.
79  SELECT sum(money) as total_revenue,time_of_day
80  FROM dbo.Coffe_sales
81  group by time_of_day;
82
83
84  --18.Average sales amount by hour_of_day.
85  SELECT avg(money) as avg_sales,hour_of_day
86  FROM dbo.Coffe_sales
87  group by hour_of_day
88  order by hour_of_day asc;
89
90  --19.Hour with the highest total revenue.
91  SELECT TOP 1 max(money) as highest_revenue,hour_of_day
92  FROM dbo.Coffe_sales
93  group by hour_of_day;
94
95  --20.Number of orders per hour.
96  SELECT hour_of_day,COUNT(*) AS orders
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97   FROM dbo.Coffe_sales
98   group by hour_of_day
99   order by orders desc;
100
101 --?? Day & Month Analysis
102
103  --21.Total sales by weekday.
104  SELECT Weekday,count(*) as total_sales
105  FROM dbo.Coffe_sales
106  group by weekday;
107
108  -- 22. Revenue by weekday
109  SELECT Weekday, SUM(money) AS revenue
110  FROM  dbo.Coffe_sales
111  GROUP BY Weekday;
112
113  --23.Which weekday has the highest revenue?
114  SELECT top 1 max(money) as highest_revenue,weekday
115  FROM dbo.Coffe_sales
116  group by  weekday;
117
118  --24.Total revenue by month.
119  SELECT month_name as month ,sum(money)  as total_revenue
120  FROM dbo.Coffe_sales
121  group by month_name,monthsort
122  order by monthsort;
123
124  --25.Average transaction value per weekday.
125  SELECT weekday, avg(money) as avg_transaction
126  FROM dbo.Coffe_sales
127  group by weekday;
128
129  --26.Number of transactions per date.
130  SELECT Date, COUNT(*) AS total_transactions
131  FROM dbo.Coffe_sales
132  GROUP BY Date;
133
134 --?? Payment & Customer Behavior Questions
135
136  --27.Total revenue by payment type (cash_type).
137  SELECT cash_type, sum(money) as total_revenue
138  FROM dbo.Coffe_sales
139  group by cash_type;
140
141  --28.Count of transactions by payment method.
142  SELECT cash_type , count(*) as transactions
143  FROM dbo.Coffe_sales
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144  group by cash_type;
145
146  --29.Average transaction value for card vs cash.
147  SELECT cash_type, AVG(money) AS avg_value
148  FROM dbo.Coffe_sales
149  GROUP BY cash_type;
150
151  --30.Which payment type contributes more revenue?
152  SELECT top 1 cash_type, SUM(money) AS revenue
153  FROM dbo.Coffe_sales
154  GROUP BY cash_type
155  ORDER BY revenue DESC;
156
157  --31.Percentage of card payments vs cash payments.
158  SELECT cash_type,
159  ROUND(COUNT(*) * 100.0 / round(SUM(COUNT(*)) OVER (), 2),2) AS percentage
160  FROM dbo.Coffe_sales
161  GROUP BY cash_type;
162
163  --Advanced SQL Questions (WINDOW FUNCTIONS, SUBQUERIES)
164  --Ranking & Comparison
165
166  --32.Rank coffee types by total revenue.
167  select coffee_name,sum(money) as total_revenue,
168  rank() over (order by sum(money)desc) as rank
169  from dbo.Coffe_sales
170  group by coffee_name;
171
172  --33.Rank weekdays based on total sales.
173  SELECT weekday,sum(money) as total_sales,
174  rank() over (order by sum(money) desc) as rank
175  from dbo.Coffe_sales
176  group by weekday;
177
178      --34.Find the top-selling coffee for each weekday.
179      select*
180      from
181      (select weekday,coffee_name,COUNT(*) AS orders,
182      RANK() OVER (PARTITION BY Weekday ORDER BY COUNT(*) DESC) rnk
183      FROM dbo.Coffe_sales
184      GROUP BY Weekday, coffee_name
185      ) t
186      WHERE rnk = 1;
187
188  --35.Show cumulative revenue ordered by date.
189  SELECT Date,
190  SUM(money) AS daily_revenue,
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191    SUM(SUM(money)) OVER (ORDER BY Date) AS cumulative_revenue
192    FROM dbo.Coffe_sales
193    GROUP BY Date;
194
195 --36.Identify peak sales hour for each day. 196 SELECT *
197        FROM (
198        SELECT Date, hour_of_day,
199        SUM(money) AS revenue,
200        RANK() OVER (PARTITION BY Date ORDER BY SUM(money) DESC) rnk
201        FROM dbo.Coffe_sales
202        GROUP BY Date, hour_of_day
203        ) t
204        WHERE rnk = 1;
205
206
207 --Business Insights
208
209                --37.Find days where revenue was above the monthly average.
210                select Date, SUM(money) AS revenue
211                FROM dbo.Coffe_sales
212                GROUP BY Date
213                HAVING SUM(money) >
214                (SELECT AVG(money) FROM dbo.Coffe_sales);
215
216                        --38.Compare morning vs evening revenue using CASE.
217                        WITH sales_session AS (
218                        SELECT
219                        CASE
220                        WHEN Time_of_Day IN ('Morning','Afternoon') THEN 'Day'
221                        ELSE 'Evening'
222                        END AS session,
223                        money
224                        FROM dbo.Coffe_sales
225                        )
226                        SELECT
227                        session,
228                        SUM(money) AS revenue
229                        FROM sales_session
230                        GROUP BY session;
231
232
233            --39.Find coffees that perform better in the Afternoon than Morning.
234            SELECT coffee_name
235            FROM dbo.Coffe_sales
236            GROUP BY coffee_name
237            HAVING
238            SUM(CASE WHEN Time_of_Day = 'Afternoon' THEN money ELSE 0 END)
239            > SUM(CASE WHEN Time_of_Day = 'Morning' THEN money ELSE 0 END);
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240
241
242                 --40.Identify low-performing hours (below average revenue).
243                 WITH hourly_revenue AS (
244                 SELECT
245                 hour_of_day,
246                 SUM(money) AS revenue
247                 FROM dbo.Coffe_sales
248                 GROUP BY hour_of_day
249                 )
250                 SELECT
251                 hour_of_day,
252                 revenue
253                 FROM hourly_revenue
254                 WHERE revenue <
255                 (SELECT AVG(revenue) FROM hourly_revenue);
256
257   --41.Detect revenue trends month-over-month.
258   SELECT Month_name,
259   SUM(money) AS revenue,
260   SUM(money) - LAG(SUM(money)) OVER (ORDER BY Monthsort) AS mom_change
261   FROM dbo.Coffe_sales
262   GROUP BY Month_name, Monthsort;
263
264
265 --Date & Time SQL Questions
266
267   --42.Extract day, month, year from Date column.
268   select day(date) as day,month(date) as month,
269   year(date) as year
270   from dbo.Coffe_sales
271
272   --43.Count sales per day.
273   select date,count(*)
274   from dbo.Coffe_Sales
275   group by date;
276
277   --44.Find busiest date.
278   select date,count(*) as orders
279   from dbo.Coffe_Sales 280 group by date
281 order by orders desc;
282
283   --45.Calculate average daily revenue.
284   select avg(daily_rev) as daily_revenue 285 from(
286       select Date, SUM(money) AS daily_rev
287       FROM dbo.Coffe_sales
288       GROUP BY Date
289       ) t;
```

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290
291  --46.Show first and last transaction date.
292  SELECT MIN(Date) AS first_date, MAX(Date) AS last_date
293  FROM dbo.Coffe_sales;
294
295 --?? CASE WHEN & Conditional Logic
296
297        --47.Categorize sales as High, Medium, Low based on amount.
298        SELECT *,
299        CASE
300        WHEN money >= (SELECT AVG(money) FROM dbo.Coffe_sales) THEN 'High'
301        WHEN money >= (SELECT AVG(money) * 0.85 FROM dbo.Coffe_sales) THEN 'Medium'
302        ELSE 'Low'
303        END AS sale_category
304        FROM dbo.Coffe_sales;
305
306
307   --48.Label transactions as Peak Hour or Off Hour.
308   SELECT *,
309   CASE
310   WHEN hour_of_day BETWEEN 8 AND 11 THEN 'Peak'
311   ELSE 'Off'
312   END AS hour_type
313   FROM dbo.Coffe_sales;
314
315              --49.Flag premium coffees (price > avg price).
316              SELECT coffee_name
317              FROM dbo.Coffe_sales
318              GROUP BY coffee_name
319              HAVING AVG(money) >
320              (SELECT AVG(money) FROM dbo.Coffe_sales);
321
322        --50.Create a weekend vs weekday sales comparison.
323        SELECT
324        CASE
325        WHEN DATENAME(WEEKDAY, [Date]) IN ('Saturday','Sunday') THEN 'Weekend'
326        ELSE 'Weekday'
327        END AS day_type,
328        SUM(money) AS revenue
329        FROM dbo.Coffe_sales
330        GROUP BY
331        CASE
332        WHEN DATENAME(WEEKDAY, [Date]) IN ('Saturday','Sunday') THEN 'Weekend'
333        ELSE 'Weekday'
334        END;
335
336  --51.Identify repeat coffee orders during the same hour.
337  SELECT Date, hour_of_day, coffee_name, COUNT(*) AS repeats
```

```
338   FROM dbo.Coffe_sales
339   GROUP BY Date, hour_of_day, coffee_name
340   HAVING COUNT(*) > 1;
341
342 --Scenario-Based Questions
343
344   --52.If you had to remove low-performing coffees, which would you remove?
345   SELECT coffee_name, SUM(money) AS revenue
346   FROM dbo.Coffe_sales
347   GROUP BY coffee_name
348   ORDER BY revenue;
349
350         --53.Which coffee should be promoted in the Evening?
351         SELECT TOP 1
352         coffee_name,
353         SUM(money) AS revenue
354         FROM dbo.Coffe_sales
355         WHERE hour_of_day >= 17
356         GROUP BY coffee_name
357         ORDER BY revenue DESC;
358
359         --54.What time slot generates the most revenue per transaction?
360         SELECT TOP 1
361         hour_of_day,
362         AVG(money) AS avg_revenue_per_transaction
363         FROM dbo.Coffe_sales
364         GROUP BY hour_of_day
365         ORDER BY avg_revenue_per_transaction DESC;
366
367   --55.Which weekday should discounts be avoided?
368   select top 1 Weekday, AVG(money) AS avg_price
369   FROM dbo.Coffe_sales
370   GROUP BY Weekday
371   ORDER BY avg_price DESC;
372
373
374 --56.If staffing is limited, which hours need more staff?
375
376   SELECT hour_of_day, COUNT(*) AS orders
377   FROM dbo.Coffe_sales
378   GROUP BY hour_of_day
379   ORDER BY orders DESC;
380
```