Part 1

-- drill down, display the loan amount passed for each date

select sum(l.loan\_amt), d.date from loan l join date d on l.date\_id = d.id group by d.date order by d.date;

A screenshot of a computer

Description automatically generated

-- roll up, display the loan amount passed for each month

select sum(l.loan\_amt), d.month, d.year from loan l join date d on l.date\_id = d.id group by d.month, d.year order by d.year, d.month asc;

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Description automatically generated

-- slice, display the total loan amount in 2022

select sum(l.loan\_amt), d.year from loan l join date d on l.date\_id = d.id where d.year=2022 group by d.year ;

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Description automatically generated

-- dice, display the total loan amount in 2022 applied by foreign worker

select sum(l.loan\_amt), d.year from loan l

join date d on l.date\_id = d.id

join customer c on l.customer\_id = c.id

where d.year=2022 and c.foreign\_worker = true group by d.year;

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Description automatically generated

--dice, display the total passed loan in 2022 applied by female

select sum(l.loan\_amt), d.year from loan l

join date d on l.date\_id = d.id

join customer c on l.customer\_id = c.id

where d.year=2022 and c.gender = 'female' group by d.year;

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Description automatically generated

--combine, drill down loan amount to each specific date and slice for year 2022

select sum(l.loan\_amt), d.date from loan l

join date d on l.date\_id = d.id

where d.year=2022 group by d.date order by d.date;

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Description automatically generated

--combine, drill down total loan amount to each specific date and slice for only credit over 200

select sum(l.loan\_amt), d.date, ca.status from loan l

join checking\_account ca on l.checking\_account\_id = ca.id

join date d on l.date\_id = d.id

where ca.status = 'above:200' group by d.date, ca.status order by d.date;

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Description automatically generated

--combine, roll up total loan amount to each year and slice for only credit over 200

select sum(l.loan\_amt), d.year, ca.status from loan l

join checking\_account ca on l.checking\_account\_id = ca.id

join date d on l.date\_id = d.id

where ca.status = 'above:200' group by d.year, ca.status order by d.year;

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Description automatically generated

--combine, roll up total loan amount to each year and slice for only single customer

select sum(l.loan\_amt), d.year, c.marriage from loan l

join customer c on l.customer\_id = c.id

join date d on l.date\_id = d.id

where c.marriage = 'single' group by d.year, c.marriage order by d.year;

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Description automatically generated

Part2

-- iceburg display the 20 biggest loan passed in 2022

select l.loan\_amt, d.date from loan l

join date d on l.date\_id = d.id

where d.year = 2022  order by l.loan\_amt desc limit 20;

A screenshot of a computer

Description automatically generated

-- windowing, display the rank by each loan amount partitioned by applicant job type

WITH loan\_avg AS(

  SELECT l.loan\_amt,

         c.job\_type,

         ROUND(AVG(l.loan\_amt) OVER (PARTITION BY c.job\_type), 2) AS avg\_loan\_amt\_by\_job\_type

  FROM loan l

  JOIN customer c ON l.customer\_id = c.id)

SELECT loan\_amt,

       job\_type,

       avg\_loan\_amt\_by\_job\_type,

       RANK() OVER (PARTITION BY job\_type ORDER BY loan\_amt) AS loan\_amt\_rank

FROM loan\_avg;

A screenshot of a computer

Description automatically generated

--window clause, show the rank by each loan amount partitioned by allicant marriage status

WITH loan\_avg AS(

  SELECT l.loan\_amt,

         c.marriage,

         ROUND(AVG(l.loan\_amt) OVER W, 2) AS avg\_loan\_amt\_by\_job\_type

  FROM loan l

  JOIN customer c ON l.customer\_id = c.id

  WINDOW W AS (PARTITION BY c.marriage ORDER BY l.loan\_amt))

SELECT loan\_amt,

       marriage,

       avg\_loan\_amt\_by\_job\_type,

       RANK() OVER W AS loan\_amt\_rank

FROM loan\_avg

WINDOW W AS (PARTITION BY marriage ORDER BY loan\_amt);

A screenshot of a computer

Description automatically generated

PartB

Drill down to a month (date hierarchy: year – month - day). Display the loan amount for each day in March and the sum in the month.

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Description automatically generated

Drill down to a day (date hierarchy: year – month - day). Display the loan amount for 28 March 2022.

A screenshot of a graph

Description automatically generated

Rollup to a year (date hierarchy: year – month - day). Display the loan amount in 2022.

A screenshot of a graph

Description automatically generated

Drill down to a month (date hierarchy: year – month - day), slice marriage dimension. Display the loan amount in August 2022 for single applicant.

A screenshot of a graph

Description automatically generated

Drill down to a month (date hierarchy: year – month - day), dice by risk and job dimension. Display the loan amount in August 2022 for skilled official applicant with bad risk.

A screenshot of a graph

Description automatically generated

Top 10 biggest loan applicant information and bottom 10 smallest loan applicants information

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