List of queries used for the test:

## > Checking for duplicates in sales table

select

customer\_id,

count(customer\_id) AS count\_of\_customers

FROM test\_acadia.sales s

WHERE 1=1

GROUP BY 1

having count(s.customer\_id) > 1

## > Checking for duplicates in dept\_data

select

department\_id, "year", segment\_id, profile\_id,

count(\*), sum(sales)

FROM test\_acadia.dept\_data dp

WHERE 1=1

GROUP BY 1,2,3,4

having count(\*) > 1

## > All sales data, for exploration using Google Sheets

select distinct

s.customer\_id,

v.version,

v.mailind,

cp.profile\_description,

cs.segment\_description,

count(distinct s.customer\_id) AS count\_of\_customers,

count(s.customer\_id) FILTER (where v.mailind = '1') AS count\_of\_customers\_mailed,

sum(spend)::numeric(10,2) AS total\_spend,

(sum(spend)/count(s.customer\_id))::numeric(10,2) AS average\_spend

FROM test\_acadia.sales s

JOIN test\_acadia.version v ON v.customer\_id::text = s.customer\_id::text

join test\_acadia.customers c on s.customer\_id::text = c.customer\_id::text

left join test\_acadia.d\_profile cp on c.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on c.segment\_id::text = cs.segment\_id::text

WHERE 1=1

GROUP BY 1,2,3,4,5

## > All department data, for exploration using Google Sheets

select distinct

s.customer\_id,

v.version,

v.mailind,

cp.profile\_description,

cs.segment\_description,

count(s.customer\_id) AS count\_of\_customers,

sum(s.spend) AS total\_spend,

avg(s.spend)::numeric(10,2) AS average\_spend

FROM test\_acadia.sales s

JOIN test\_acadia.version v ON v.customer\_id::text = s.customer\_id::text

left join test\_acadia.customers c on s.customer\_id::text = c.customer\_id::text

left join test\_acadia.d\_profile cp on c.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on c.segment\_id::text = cs.segment\_id::text

WHERE 1=1

GROUP BY 1,2,3,4,5

## > Table 1: control and experiment by version (slide 5)

with combined\_data as (

select distinct

s.customer\_id,

v.version,

v.mailind,

cp.profile\_description,

cs.segment\_description,

count(s.customer\_id) AS count\_of\_customers,

sum(s.spend) AS total\_spend,

avg(s.spend)::numeric(10,2) AS average\_spend

FROM test\_acadia.sales s

JOIN test\_acadia.version v ON v.customer\_id::text = s.customer\_id::text

join test\_acadia.customers c on s.customer\_id::text = c.customer\_id::text

left join test\_acadia.d\_profile cp on c.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on c.segment\_id::text = cs.segment\_id::text

WHERE 1=1

GROUP BY 1,2,3,4,5)

, pt\_data as (

SELECT version,

(avg(average\_spend) FILTER (WHERE mailind = ''))::numeric(10,2) AS control,

(avg(average\_spend) FILTER (WHERE mailind = '1'))::numeric(10,2) AS exper

FROM combined\_data

GROUP BY 1)

select

\*,

((exper/control)-1)::numeric(10,3) as diff

from pt\_data

order by 1

## > Table 2: Customer quantity and share, by version and A/B group description (slide 6)

with combined\_data as (

select distinct

s.customer\_id,

v.version,

v.mailind,

cp.profile\_description,

cs.segment\_description,

count(s.customer\_id) AS count\_of\_customers,

sum(s.spend) AS total\_spend,

avg(s.spend)::numeric(10,2) AS average\_spend

FROM test\_acadia.sales s

JOIN test\_acadia.version v ON v.customer\_id::text = s.customer\_id::text

join test\_acadia.customers c on s.customer\_id::text = c.customer\_id::text

left join test\_acadia.d\_profile cp on c.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on c.segment\_id::text = cs.segment\_id::text

WHERE 1=1

GROUP BY 1,2,3,4,5)

, pt\_data as (

select

version,

sum(count\_of\_customers) FILTER (WHERE mailind = '') as customer\_qty\_control,

sum(count\_of\_customers) FILTER (WHERE mailind = '1') as customer\_qty\_exper,

sum(count\_of\_customers) FILTER (WHERE mailind = '')/sum(count\_of\_customers) as share\_control,

sum(count\_of\_customers) FILTER (WHERE mailind = '1')/sum(count\_of\_customers) as share\_exper

FROM combined\_data

GROUP BY 1)

select

\*

from pt\_data

order by 1

## > Table 3: customer quantity and B over A, by segment (slide 6)

with combined\_data as (

select distinct

s.customer\_id,

v.version,

v.mailind,

cp.profile\_description,

cs.segment\_description,

count(s.customer\_id) AS count\_of\_customers,

sum(s.spend) AS total\_spend,

avg(s.spend)::numeric(10,2) AS average\_spend

FROM test\_acadia.sales s

JOIN test\_acadia.version v ON v.customer\_id::text = s.customer\_id::text

join test\_acadia.customers c on s.customer\_id::text = c.customer\_id::text

left join test\_acadia.d\_profile cp on c.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on c.segment\_id::text = cs.segment\_id::text

WHERE 1=1

GROUP BY 1,2,3,4,5)

, pt\_data as (

select

segment\_description,

sum(count\_of\_customers) FILTER (WHERE version = 'A') as customer\_qty\_version\_A,

sum(count\_of\_customers) FILTER (WHERE version = 'B') as customer\_qty\_version\_B,

sum(count\_of\_customers) FILTER (WHERE version = 'B')/ sum(count\_of\_customers) as B\_over\_A

FROM combined\_data

GROUP BY 1)

select

\*

from pt\_data

order by 1

## > Tabel 4: average ticket by segment description (slide 6)

select distinct

cs.segment\_description,

(sum(s.spend)/count(s.customer\_id))::numeric(10,2) AS average\_spend

FROM test\_acadia.sales s

JOIN test\_acadia.version v ON v.customer\_id::text = s.customer\_id::text

join test\_acadia.customers c on s.customer\_id::text = c.customer\_id::text

left join test\_acadia.d\_profile cp on c.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on c.segment\_id::text = cs.segment\_id::text

WHERE 1=1

GROUP BY 1

## > Table 5: Total sales, customers, and average ticket by year and department (slide 12)

with dept\_data as (

SELECT

department\_description,

"year",

segment\_description,

profile\_description,

sum(sales) sales,

sum(customers) customers,

(sum(sales)/ NULLIF(sum(customers),0))::numeric(10,2) avg\_ticket

FROM test\_acadia.dept\_data dp

left join test\_acadia.d\_department cd on dp.department\_id::text = cd.department\_id ::text

left join test\_acadia.d\_profile cp on dp.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on dp.segment\_id::text = cs.segment\_id::text

group by 1,2,3,4

order by 1,2,3,4)

, pt\_data as (

select

department\_description,

--1999

sum(sales) FILTER (WHERE year = '1999')::numeric(10,2) as "99\_total sales",

sum(customers) FILTER (WHERE year = '1999')::numeric(10,2) as "99\_customer\_qty",

(sum(sales) FILTER (WHERE year = '1999')/ sum(customers) filter (WHERE year = '1999'))::numeric(10,2) "99\_avg\_ticket",

--2000

sum(sales) FILTER (WHERE year = '2000')::numeric(10,2) as "00\_total sales",

sum(customers) FILTER (WHERE year = '2000')::numeric(10,2) as "00\_customer\_qty",

(sum(sales) FILTER (WHERE year = '2000')/ sum(customers) filter (WHERE year = '2000'))::numeric(10,2) "00\_avg\_ticket",

--diffs

(sum(sales) FILTER (WHERE year = '1999') - sum(sales) FILTER (WHERE year = '2000'))::numeric(10,2) as "abs\_diff\_00-99",

((sum(sales) FILTER (WHERE year = '2000') / sum(sales) FILTER (WHERE year = '1999'))-1)::numeric(10,2) as "%\_diff\_00-99"

FROM dept\_data

GROUP BY 1)

select

\*

from pt\_data

order by 2 desc

## > Table 6: Total sales, customers, and average ticket by year and department, for not clothing departments (slide 12)

with dept\_data as (

SELECT

department\_description,

"year",

segment\_description,

profile\_description,

sum(sales) sales,

sum(customers) customers,

(sum(sales)/ NULLIF(sum(customers),0))::numeric(10,2) avg\_ticket

FROM test\_acadia.dept\_data dp

left join test\_acadia.d\_department cd on dp.department\_id::text = cd.department\_id ::text

left join test\_acadia.d\_profile cp on dp.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on dp.segment\_id::text = cs.segment\_id::text

group by 1,2,3,4

order by 1,2,3,4)

, pt\_data as (

select

department\_description,

--1999

sum(sales) FILTER (WHERE year = '1999')::numeric(10,2) as "99\_total sales",

sum(customers) FILTER (WHERE year = '1999')::numeric(10,2) as "99\_customer\_qty",

(sum(sales) FILTER (WHERE year = '1999')/ sum(customers) filter (WHERE year = '1999'))::numeric(10,2) "99\_avg\_ticket",

--2000

sum(sales) FILTER (WHERE year = '2000')::numeric(10,2) as "00\_total sales",

sum(customers) FILTER (WHERE year = '2000')::numeric(10,2) as "00\_customer\_qty",

(sum(sales) FILTER (WHERE year = '2000')/ sum(customers) filter (WHERE year = '2000'))::numeric(10,2) "00\_avg\_ticket",

--diffs

(sum(sales) FILTER (WHERE year = '1999') - sum(sales) FILTER (WHERE year = '2000'))::numeric(10,2) as "abs\_diff\_00-99",

((sum(sales) FILTER (WHERE year = '2000') / sum(sales) FILTER (WHERE year = '1999'))-1)::numeric(10,2) as "%\_diff\_00-99"

FROM dept\_data

GROUP BY 1)

select

\*

from pt\_data

where department\_description in ('Knick Knacks', 'Misc')

order by 2 desc

## Table 7: total sales and differences, by segment

with dept\_data as (

SELECT

department\_description,

"year",

segment\_description,

profile\_description,

sum(sales) sales,

sum(customers) customers,

(sum(sales)/ NULLIF(sum(customers),0))::numeric(10,2) avg\_ticket

FROM test\_acadia.dept\_data dp

left join test\_acadia.d\_department cd on dp.department\_id::text = cd.department\_id ::text

left join test\_acadia.d\_profile cp on dp.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on dp.segment\_id::text = cs.segment\_id::text

group by 1,2,3,4

order by 1,2,3,4)

, pt\_data as (

select

segment\_description,

sum(sales) FILTER (WHERE year = '1999')::numeric(10,2) as "99\_total\_sales",

sum(sales) FILTER (WHERE year = '2000')::numeric(10,2) as "00\_total\_sales",

(sum(sales) FILTER (WHERE year = '2000') - sum(sales) FILTER (WHERE year = '1999'))::numeric(10,2) as "abs\_diff\_00-99",

((sum(sales) FILTER (WHERE year = '2000') / sum(sales) FILTER (WHERE year = '1999'))-1)::numeric(10,2) as "%\_diff\_00-99"

FROM dept\_data

where department\_description not in ('Knick Knacks', 'Misc')

GROUP BY 1)

select

\*,

("99\_total\_sales"/sum("99\_total\_sales") over ())::numeric(10,3) as "share\_in\_99"

from pt\_data

order by 2 desc

## > Table 8: Total sales and differences, by profile

with dept\_data as (

SELECT

department\_description,

"year",

segment\_description,

profile\_description,

sum(sales) sales,

sum(customers) customers,

(sum(sales)/ NULLIF(sum(customers),0))::numeric(10,2) avg\_ticket

FROM test\_acadia.dept\_data dp

left join test\_acadia.d\_department cd on dp.department\_id::text = cd.department\_id ::text

left join test\_acadia.d\_profile cp on dp.profile\_id::text = cp.profile\_id::text

left join test\_acadia.d\_segment cs on dp.segment\_id::text = cs.segment\_id::text

group by 1,2,3,4

order by 1,2,3,4)

, pt\_data as (

select

profile\_description,

sum(sales) FILTER (WHERE year = '1999')::numeric(10,2) as "99\_total\_sales",

sum(sales) FILTER (WHERE year = '2000')::numeric(10,2) as "00\_total\_sales",

(sum(sales) FILTER (WHERE year = '2000') - sum(sales) FILTER (WHERE year = '1999'))::numeric(10,2) as "abs\_diff\_00-99",

((sum(sales) FILTER (WHERE year = '2000') / sum(sales) FILTER (WHERE year = '1999'))-1)::numeric(10,2) as "%\_diff\_00-99"

FROM dept\_data

where department\_description not in ('Knick Knacks', 'Misc')

GROUP BY 1)

select

\*,

("99\_total\_sales"/sum("99\_total\_sales") over ())::numeric(10,3) as "share\_in\_99"

from pt\_data

order by 2 desc