a) For each customer: articles that the customer bought at the same day of month for two consecutive months, e.g. 16.7.2019 and 16.6.2019.

WITH dmin AS (SELECT n,i,d, date_trunc('month', d) as m1 ,

   lag(date_trunc('month', d), 1) over (order by min(d)) as m2

   from purchases group by id)

SELECT distinct n,i,d   FROM dmin where m2=m1 - interval '1 month'

Query Editor   Query History

```
1   WITH dmin AS ( SELECT n,i,d, date_trunc('month', d) as m1 ,
2          lag(date_trunc('month', d), 1) over (order by min(d)) as m2
3          from purchases group by id)
4
5   SELECT distinct n,i   FROM dmin where m2=m1 - interval '1 month'
6
```

Data Output   Explain   Messages   Notifications

n character varying (255)	i character varying (50)
1	Calista P. Durham	16
2	Ciara S. Davis	12
3	Clark L. Rivera	30
4	Gabriel B. Blackwell	2
5	Jorden G. Washington	37
6	Joshua K. Decker	67
7	Kelly I. Nicholson	45
8	Kerry Z. Lynn	4
9	Lael N. Herman	14
10	Liberty V. Hyde	67
11	Naida K. Taylor	71
12	Sarah G. Hutchinson	40
13	Shannon J. Knowles	43
14	Veda I. Mueller	48
15	Yvette U. Shepherd	68

b) For each customer: timeslot in which the customer has been active,i.e. number of days between the first and the last purchases

Query code-

WITH dmin AS (

```
    SELECT id, n, d,
        (now()::DATE - min(d) OVER (PARTITION BY n)) as days_min, (now()::DATE - max(d)
OVER (PARTITION BY n)) as days_max
    FROM purchases
)
SELECT distinct n, days_min-days_max as difference FROM dmin where days_min-days_max >
0
```

```
1   WITH dmin AS (
2       SELECT id, n, d,
3           (now()::DATE - min(d) OVER (PARTITION BY n)) as days_min,
4           (now()::DATE - max(d) OVER (PARTITION BY n)) as days_max
5       FROM purchases
6   )
7   SELECT distinct n, days_min-days_max as difference FROM dmin where days_min-days_max > 0
8
```

Data Output   Explain   Messages   Notifications

n character varying (255)	difference integer
1	Cooper W. Ortiz	110
2	Shad O. Rodgers	291
3	Kerry Y. Hoover	30
4	Anastasia B. Christian	31
5	Audra A. Tran	345
6	Sylvia W. Lott	61
7	Orson Y. Hensley	29
8	Jelani N. Warner	560

c) All purchases of customers in February and March of leap years
    Query code-

```
SELECT n, i FROM purchases
    WHERE EXTRACT(MONTH FROM d) = 2 or EXTRACT(MONTH FROM d) = 3
and extract(year from d)::integer % 4 = 0 ;
```

```
1   SELECT n, i
2      FROM purchases
3      WHERE EXTRACT(MONTH FROM d) = 2
4      or EXTRACT(MONTH FROM d) = 3
5      and extract(year from d)::integer % 4 = 0 ;
```

Data Output   Explain   Messages   Notifications

n character varying (255)	i character varying (50)
1	Stone X. Owens	17
2	Hamish M. Schmidt	35
3	Joshua K. Decker	67
4	Kelly I. Nicholson	45
5	Astra P. Dickson	4
6	Wynter H. Simpson	79
7	Orson Y. Hensley	29
8	Orson Y. Hensley	29
9	Doris P. Mcguire	63
10	Andrew Y. Dudley	37
11	Shannon O. Johnston	6

e) All purchases of the last Fridays of a month.
Query code-

SELECT n , d, i, extract(DOW FROM d) as DOW
FROM purchases where extract(DAY FROM d)>21 and extract(DOW FROM d) = 5;

Query Editor   Query History

```sql
1   SELECT  n , d, i, extract(DOW FROM d) as DOW
2   FROM   purchases
3   where extract(DAY FROM d)>21
4   and extract(DOW FROM d) = 5;
5
```

Data Output   Explain   Messages   Notifications

	n character varying (255)	d date	i character varying (50)	dow numeric
1	Sylvia W. Lott	26/11/1999	4	5
2	Vernon B. Burch	24/11/2000	78	5
3	Alexander X. Stark	27/10/2000	25	5