

**LAPORAN TUTORIAL LAB 2
BASIS DATA**



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KELAS A**

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UNIVERSITAS INDONESIA
DEPOK
2022/2023**

Laporan Tutorial Lab 2

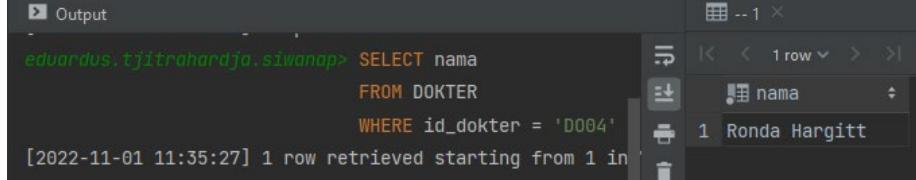
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Latihan 1

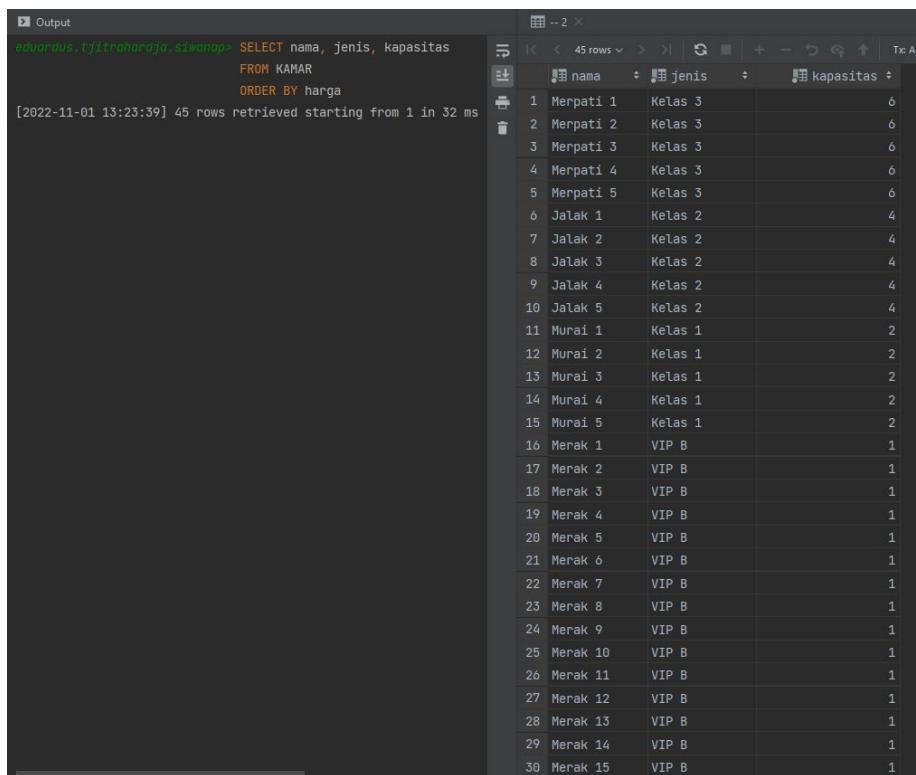
1. [SQL] Jalankan SQL Query pada Contoh 1 hingga Contoh 26 di atas dan cantumkan hasilnya pada laporan.

1.



```
eduardus.tjitrabhardja.siwanap> SELECT nama
   FROM DOKTER
  WHERE id_dokter = 'D0041'
[2022-11-01 11:35:27] 1 row retrieved starting from 1 in 1 ms
```

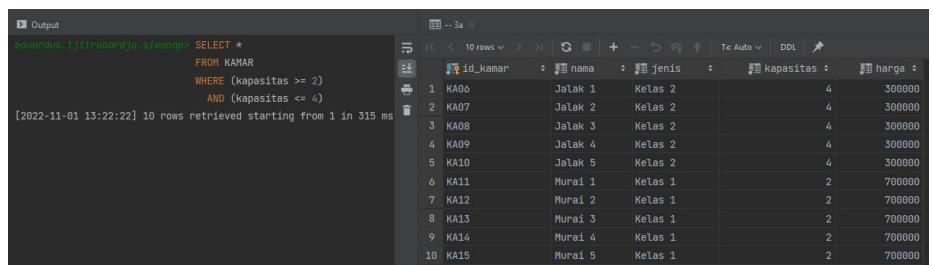
2.



```
eduardus.tjitrabhardja.siwanap> SELECT nama, jenis, kapasitas
   FROM KAMAR
  ORDER BY harga
[2022-11-01 13:23:39] 45 rows retrieved starting from 1 in 32 ms
```

nama	jenis	kapasitas
Merpati 1	Kelas 3	6
Merpati 2	Kelas 3	6
Merpati 3	Kelas 3	6
Merpati 4	Kelas 3	6
Merpati 5	Kelas 3	6
Jalak 1	Kelas 2	4
Jalak 2	Kelas 2	4
Jalak 3	Kelas 2	4
Jalak 4	Kelas 2	4
Jalak 5	Kelas 2	4
Murai 1	Kelas 1	2
Murai 2	Kelas 1	2
Murai 3	Kelas 1	2
Murai 4	Kelas 1	2
Murai 5	Kelas 1	2
Merak 1	VIP B	1
Merak 2	VIP B	1
Merak 3	VIP B	1
Merak 4	VIP B	1
Merak 5	VIP B	1
Merak 6	VIP B	1
Merak 7	VIP B	1
Merak 8	VIP B	1
Merak 9	VIP B	1
Merak 10	VIP B	1
Merak 11	VIP B	1
Merak 12	VIP B	1
Merak 13	VIP B	1
Merak 14	VIP B	1
Merak 15	VIP B	1

3.



```
eduardus.tjitrabhardja.siwanap> SELECT *
   FROM KAMAR
  WHERE (kapasitas >= 2)
    AND (kapasitas <= 4)
[2022-11-01 13:22:22] 10 rows retrieved starting from 1 in 315 ms
```

id_kamar	nama	jenis	kapasitas	harga
KA06	Jalak 1	Kelas 2	4	300000
KA07	Jalak 2	Kelas 2	4	300000
KA08	Jalak 3	Kelas 2	4	300000
KA09	Jalak 4	Kelas 2	4	300000
KA10	Jalak 5	Kelas 2	4	300000
KA11	Murai 1	Kelas 1	2	700000
KA12	Murai 2	Kelas 1	2	700000
KA13	Murai 3	Kelas 1	2	700000
KA14	Murai 4	Kelas 1	2	700000
KA15	Murai 5	Kelas 1	2	700000

a.

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b.

```
eduardus.tjitrahardja.siwano> SELECT *
  FROM KAMAR
 WHERE (kapasitas BETWEEN 2 AND 4)
[2022-11-01 13:22:38] 10 rows retrieved starting from 1 in 50 ms
```

id_kamar	nama	jenis	kapasitas	harga
KA06	Jalak 1	Kelas	2	300000
KA07	Jalak 2	Kelas	2	300000
KA08	Jalak 3	Kelas	2	300000
KA09	Jalak 4	Kelas	2	300000
KA10	Jalak 5	Kelas	2	300000
KA11	Murai 1	Kelas	1	700000
KA12	Murai 2	Kelas	1	700000
KA13	Murai 3	Kelas	1	700000
KA14	Murai 4	Kelas	1	700000
KA15	Murai 5	Kelas	1	700000

4.

```
eduardus.tjitrahardja.siwano> SELECT nama, email
  FROM PERAWAT
 WHERE nama LIKE 'Karen%'
[2022-11-01 11:38:41] 1 row retrieved starting from 1 in 304 ms (e
```

nama	email
Karen Cotillard	kcotillardk@omnititure.com

5.

```
eduardus.tjitrahardja.siwano> (SELECT *
  FROM DOKTER
 WHERE spesialisasi = 'anak')
 UNION
 (SELECT *
  FROM DOKTER
 WHERE spesialisasi = 'bedah')
[2022-11-01 13:21:57] 14 rows retrieved starting from 1 in 62 ms
```

id_dokter	nama	no_telp	email	spesialisasi
D008	Den Stoltzner	85654750630	dstoltzner7@myspace.com	anak
D009	Jenda Chaudret	87860070111	jchaudret@example.com	anak
D010	Moreen Hebbelthwaite	831095860118	mhebbelthwaite9@buzzfeed.com	anak
D011	Idelia Caught	88041581978	icoughtea@samsung.com	anak
D012	Darbie Howle	84548758195	dhowle9@imbiro.com	anak
D013	Meade Munn	85430172820	mmunn@si.edu	anak
D014	Josephine Schneider	84551802662	jschneider@um.edu	anak
D029	Devlin Earney	81063195082	dearney@gbwire.com	bedah
D030	Carl Adelsberg	87917208718	cadelsberg@networksolutions.c...	bedah
D031	Gearard Staples	85738280467	gstapelsu@n360.com	bedah
D032	Cassandra Noddles	81220215324	cnoddlesv@dell.com	bedah
D033	Genevieve Guillotin	81315397179	gguillotin@theatlantic.com	bedah
D034	Tiana Klimentek	89104117516	tklimentek@con.ne.jp	bedah
D035	Garry Aspinell	89869528031	gaspinelly@cargocollective.com	bedah

6.

```
[2022-11-01 11:39:05] 14 rows retrieved starting from 1 in 398 ms
eduardus.tjitrahardja.siwano> (SELECT *
  FROM DOKTER
 WHERE nama LIKE 'C%')
 INTERSECT
 (SELECT *
  FROM DOKTER
 WHERE spesialisasi = 'bedah')
[2022-11-01 11:39:37] 2 rows retrieved starting from 1 in 155 ms (e
```

id_dokter	nama	no_telp	email	spesialisasi
D030	Carl Adelsberg	87917208718	cadelsberg@networksolutions.com	bedah
D032	Cassandra Noddles	81220215324	cnoddlesv@dell.com	bedah

7.

```
[2022-11-01 11:39:37] 2 rows retrieved starting from 1 in 155 ms (e
eduardus.tjitrahardja.siwano> (SELECT *
  FROM DOKTER
 WHERE nama LIKE 'C%')
 EXCEPT
 (SELECT *
  FROM DOKTER
 WHERE spesialisasi = 'bedah')
[2022-11-01 11:40:08] 1 row retrieved starting from 1 in 144 ms (e
```

id_dokter	nama	no_telp	email	spesialisasi
D020	Candy Arminger	8431934032	carminger3@abc.net.au	saraf

8.

```
eduardus.tjitrahardja.siwano> SELECT nama
  FROM PASIEN
 WHERE EXTRACT(DECADE FROM tgl_lahir) = '199'
[2022-11-01 13:21:01] 12 rows retrieved starting from 1 in 59 ms (execution: 19 ms, fetchi
```

nama
Padraic De Francisci
Friedrick Pina
Sibella Raddin
Virgil Clutterbuck
Hamlen Ryles
Andrew Ginnell
Meade Redington
Maitilde Cundey
Judy Phillip
Genna Mechem
Elena Badgers
Bobbye Elner

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9.

```
Output
WHERE EXTRACT(LEVEL FROM ty_tenant) = 177 ;
[2022-11-01 11:40:33] 12 rows retrieved starting from 1 in 244 ms (execution: eduardus.tjitrahardja.siwanap> SELECT P.nama
FROM PASIEN P,
KAMAR K,
RAWAT_INAP R
WHERE R.id_pasien = P.id_pasien
AND R.id_kamar = K.id_kamar
AND K.nama = 'Merak 1'
[2022-11-01 11:41:06] 0 rows retrieved in 114 ms (execution: 60 ms, fetching:
```

10.

```
[2022-11-01 11:41:06] 0 rows retrieved in 114 ms (execution: 60 ms
eduardus.tjitrahardja.siwanap> SELECT *
FROM PERAWAT
CROSS JOIN SHIFT_PERAWAT
```

#	perawat_id_perawat	nama	no_telp	email	jenis_kelamin	id_shift_perawat	shift_perawat_id_perawat	id_ruang_inap	waktu_awal	waktu_selesai
1	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP01	PE02	RI23	2021-12-07 00:00:00.000000	2021-12-07 12:00:00	
2	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP02	PE05	RI14	2022-02-02 00:00:00.000000	2022-02-02 12:00:00	
3	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP03	PE39	RI49	2022-09-11 00:00:00.000000	2022-09-11 12:00:00	
4	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP04	PE27	RI42	2022-01-23 00:00:00.000000	2022-01-23 12:00:00	
5	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP05	PE39	RI13	2022-01-23 00:00:00.000000	2022-01-23 12:00:00	
6	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP06	PE64	RI36	2022-09-06 00:00:00.000000	2022-09-06 12:00:00	
7	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP07	PE31	RI05	2021-06-29 00:00:00.000000	2021-06-29 12:00:00	
8	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP08	PE34	RI01	2022-06-13 00:00:00.000000	2022-06-13 12:00:00	
9	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP09	PE47	RI05	2021-06-28 12:00:00.000000	2021-06-30 00:00:00	
10	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP10	PE54	RI28	2020-06-05 00:00:00.000000	2020-06-05 12:00:00	
11	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP11	PE41	RI15	2020-06-27 00:00:00.000000	2020-06-27 12:00:00	
12	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP12	PE10	RI10	2020-06-28 00:00:00.000000	2020-06-28 12:00:00	
13	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP13	PE38	RI01	2022-06-13 11:00:00.000000	2022-06-14 00:00:00	
14	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP14	PE28	RI26	2020-01-22 00:00:00.000000	2020-01-22 12:00:00	
15	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP15	PE46	RI16	2020-03-28 00:00:00.000000	2020-03-28 12:00:00	
16	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP16	PE20	RI22	2020-10-18 00:00:00.000000	2020-10-18 12:00:00	
17	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP17	PE27	RI13	2022-01-28 00:00:00.000000	2022-01-20 12:00:00	
18	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP18	PE47	RI24	2022-01-24 00:00:00.000000	2022-01-20 12:00:00	
19	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP19	PE35	RI45	2021-03-01 00:00:00.000000	2021-03-12 12:00:00	
20	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP20	PE53	RI27	2022-01-13 11:00:00.000000	2022-01-14 00:00:00	
21	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP21	PE31	RI30	2020-06-05 00:00:00.000000	2020-05-02 12:00:00	
22	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP22	PE24	RI24	2020-06-26 12:00:00.000000	2020-05-27 00:00:00	
23	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP23	PE05	RI10	2020-12-03 12:00:00.000000	2020-12-04 00:00:00	
24	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP24	PE54	RI36	2022-09-08 12:00:00.000000	2022-09-07 00:00:00	
25	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP25	PE33	RI11	2021-08-13 00:00:00.000000	2021-08-13 12:00:00	
26	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP26	PE60	RI56	2022-09-07 00:00:00.000000	2022-09-07 12:00:00	
27	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP27	PE40	RI29	2022-01-28 00:00:00.000000	2022-01-28 12:00:00	
28	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP28	PE03	RI27	2020-06-05 11:00:00.000000	2021-01-17 00:00:00	
29	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP29	PE36	RI20	2020-11-19 00:00:00.000000	2020-11-19 12:00:00	
30	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP30	PE13	RI16	2020-02-02 12:00:00.000000	2022-02-03 00:00:00	
31	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP31	PE31	RI25	2022-01-03 00:00:00.000000	2022-01-03 12:00:00	
32	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP32	PE37	RI37	2022-09-18 00:00:00.000000	2022-09-18 12:00:00	
33	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP33	PE02	RI07	2021-06-01 00:00:00.000000	2021-06-01 12:00:00	
34	P001	Ase Huddlestorne	845793040515	ahuddlestorne@businessinsider.com L	SP34	PE22	RI43	2021-12-04 00:00:00.000000	2021-12-04 12:00:00	

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```
[2022-11-01 13:00:27] completed in 16 ms
eduardus.tjitrahardja.siwanap> SELECT *
  FROM PERAWAT P
  JOIN SHIFT_PERAWAT S
    ON P.id_perawat = S.id_perawat
```

11.

#	id_perawat	name	no_telp	email	Jenis Kelamin	id_shift_perawat	S.id_perawat	id_rwat_insp	waktu_mulai	waktu_akhir
1	PE02	Erlina Georgiou	8527281896	egorghiou@ytp.com	P	SP01	PE02	R123	2021-12-07 00:00:00.000000	2021-12-07 12:00:00.000000
2	PE05	Erfree Wixey	8059710604	erxkey@djiply.com	P	SP02	PE05	R114	2022-02-02 00:00:00.000000	2022-02-02 12:00:00.000000
3	PE39	Mellicent Crawley	8904771205	mcrawley12@google.co.jp	L	SP03	PE39	R149	2020-09-11 00:00:00.000000	2020-09-11 12:00:00.000000
4	PE27	Jeth Bartow	8552961793	jbarlow@longinyc.com	P	SP04	PE27	R142	2022-09-06 00:00:00.000000	2022-09-06 12:00:00.000000
5	PE37	Nellie Meridian	8900772245	nmeridian@charasseale.com	L	SP05	PE37	R150	2022-09-06 00:00:00.000000	2022-09-06 12:00:00.000000
6	PE34	Stamta Stewart	8231931345	sstewart12@google.co.jp	L	SP06	PE34	R154	2021-09-10 00:00:00.000000	2021-09-10 12:00:00.000000
7	PE31	Kelsy Freshon	8465997359	kfreshon@upnpog.org	L	SP07	PE31	R109	2021-04-29 00:00:00.000000	2021-04-29 12:00:00.000000
8	PE36	Shaugh Bernardeotte	8485522089	sbernarodette@urfringtoppost.com	P	SP08	PE36	R101	2022-08-13 00:00:00.000000	2022-08-13 12:00:00.000000
9	PE47	Andrei Sandland	8500543596	asandland@ajuness.com	L	SP09	PE47	R105	2021-04-29 12:00:00.000000	2021-04-30 00:00:00.000000
10	PE34	Shaugh Bernardeotte	8485522089	sbernarodette@urfringtoppost.com	P	SP10	PE34	R128	2020-04-09 00:00:00.000000	2020-04-05 12:00:00.000000
11	PE41	Dasi Mirnas	8189579842	dsmirnas14wired.com	P	SP11	PE41	R115	2020-04-07 00:00:00.000000	2020-04-07 12:00:00.000000
12	PE15	Brianna Sebring	8549799793	bsebring@satoty.com	L	SP12	PE15	R104	2020-11-13 00:00:00.000000	2020-11-13 12:00:00.000000
13	PE35	Ella Arnott	8590013569	earnottly@about.me	P	SP13	PE35	R103	2022-03-22 00:00:00.000000	2022-03-22 12:00:00.000000
14	PE38	Mitchell Greger	8405233569	mgreger12@google.co.jp	L	SP14	PE38	R120	2020-05-25 00:00:00.000000	2020-05-25 12:00:00.000000
15	PE60	Gispy Gulyferen	8954852739	gulyferen19@sheparian.com	L	SP15	PE60	R116	2022-03-18 00:00:00.000000	2022-03-18 12:00:00.000000
16	PE20	Clarabelle Gong	8117377432	cgonig@gbob.com	L	SP16	PE20	R122	2020-10-10 00:00:00.000000	2020-10-10 12:00:00.000000
17	PE27	Jeth Bartow	8552961793	jbarlow@longinyc.com	P	SP17	PE27	R113	2022-01-20 00:00:00.000000	2022-01-20 12:00:00.000000
18	PE47	Andrei Sandland	8500543596	asandland@ajuness.com	L	SP18	PE47	R124	2022-05-10 00:00:00.000000	2022-05-10 12:00:00.000000
19	PE35	Ella Arnott	8745521219	earnottly@about.me	P	SP19	PE35	R145	2022-03-10 00:00:00.000000	2022-03-10 12:00:00.000000
20	PE29	Willow Deane	8379591374	wdeane12@google.co.jp	L	SP20	PE29	R127	2021-04-05 00:00:00.000000	2021-04-05 12:00:00.000000
21	PE33	Lizette Rodolico	8580013569	lrodolico12@google.co.jp	P	SP21	PE33	R130	2022-03-22 00:00:00.000000	2022-03-22 12:00:00.000000
22	PE24	Jandy Bassingthwaite	8895360488	jbassingthwaite10@outlook.com	L	SP22	PE24	R124	2022-05-27 12:00:00.000000	2022-05-27 00:00:00.000000
23	PE05	Erfree Wixey	8059710604	erxkey@djiply.com	P	SP23	PE05	R110	2020-12-10 12:00:00.000000	2020-12-10 00:00:00.000000
24	PE36	Shaugh Bernardeotte	8485522089	sbernarodette@urfringtoppost.com	P	SP24	PE36	R136	2022-09-06 12:00:00.000000	2022-09-07 00:00:00.000000
25	PE13	Noreen Agustin	8199259045	ngagustin@about.com	P	SP25	PE13	R131	2021-04-10 00:00:00.000000	2021-04-10 12:00:00.000000
26	PE30	Jarrett Bonmassa	8744957956	jarrettbonmassa@about.me	L	SP26	PE30	R136	2022-09-07 00:00:00.000000	2022-09-07 12:00:00.000000
27	PE42	Ossie Meridian	8479251554	osmeridian@ytp.com	P	SP27	PE42	R129	2021-12-30 00:00:00.000000	2021-12-30 12:00:00.000000
28	PE30	Donna Leanne	8590013569	dleanne12@google.co.jp	L	SP28	PE30	R127	2022-03-10 00:00:00.000000	2022-03-10 12:00:00.000000
29	PE36	Toson Soltau	8169557807	tosonsoltau@ajuness.com	L	SP29	PE36	R120	2020-11-18 00:00:00.000000	2020-11-18 12:00:00.000000
30	PE13	Noreen Agustin	8199259045	ngagustin@about.com	P	SP30	PE13	R114	2022-02-20 12:00:00.000000	2022-02-20 03:00:00.000000
31	PE11	Hairi Kidinoff	8973651976	mrkidinoff@people.co.uk	L	SP31	PE11	R125	2022-01-03 00:00:00.000000	2022-01-03 12:00:00.000000
32	PE17	Sanderson Wong	8377991451	swong@ajuney.com	P	SP32	PE17	R137	2022-09-18 00:00:00.000000	2022-09-18 12:00:00.000000
33	PE02	Erlina Georgiou	8527281896	egorghiou@ytp.com	P	SP33	PE02	R107	2021-08-14 00:00:00.000000	2021-08-14 12:00:00.000000
34	PE22	Clea Edina	83017435465	cedina@trt.gov	L	SP34	PE22	R143	2021-12-04 00:00:00.000000	2021-12-04 12:00:00.000000

12.

#	id_perawat	name	no_telp	email	Jenis Kelamin	id_shift_perawat	S.id_perawat	id_rwat_insp	waktu_mulai	waktu_akhir
1	PE02	Erlina Georgiou	8527281896	egorghiou@ytp.com	P	SP01	PE02	R123	2021-12-07 00:00:00.000000	2021-12-07 12:00:00.000000
2	PE05	Erfree Wixey	8059710604	erxkey@djiply.com	P	SP02	PE05	R114	2022-02-02 00:00:00.000000	2022-02-02 12:00:00.000000
3	PE39	Mellicent Crawley	8904771205	mcrawley12@google.co.jp	L	SP03	PE39	R149	2020-09-11 00:00:00.000000	2020-09-11 12:00:00.000000
4	PE27	Jeth Bartow	8552961793	jbarlow@longinyc.com	P	SP04	PE27	R142	2022-09-06 00:00:00.000000	2022-09-06 12:00:00.000000
5	PE37	Nellie Meridian	8900772245	nmeridian@charasseale.com	L	SP05	PE37	R150	2020-09-10 00:00:00.000000	2020-09-10 12:00:00.000000
6	PE34	Stamta Stewart	8231931345	sstewart12@google.co.jp	L	SP06	PE34	R154	2021-09-10 00:00:00.000000	2021-09-10 12:00:00.000000
7	PE31	Kelsy Freshon	8665997359	kfreshon@upnpog.org	L	SP07	PE31	R105	2022-04-29 00:00:00.000000	2022-04-29 12:00:00.000000
8	PE36	Shaugh Bernardeotte	8485522089	sbernarodette@urfringtoppost.com	P	SP08	PE36	R101	2022-08-13 00:00:00.000000	2022-08-13 12:00:00.000000
9	PE47	Andrei Sandland	8500543596	asandland@ajuness.com	L	SP09	PE47	R105	2021-04-29 12:00:00.000000	2021-04-30 00:00:00.000000
10	PE34	Shaugh Bernardeotte	8485522089	sbernarodette@urfringtoppost.com	P	SP10	PE34	R128	2020-06-05 00:00:00.000000	2020-06-05 12:00:00.000000
11	PE41	Dasi Mirnas	8189579842	dsmirnas14wired.com	P	SP11	PE41	R115	2020-04-27 00:00:00.000000	2020-04-27 12:00:00.000000
12	PE15	Brianna Sebring	8549799716	bsebring@satoty.com	L	SP12	PE15	R104	2020-11-13 00:00:00.000000	2020-11-13 12:00:00.000000
13	PE35	Ella Arnott	8590013569	earnottly@about.me	P	SP13	PE35	R103	2022-03-22 00:00:00.000000	2022-03-22 12:00:00.000000
14	PE38	Willow Deane	8379591374	wdeane12@google.co.jp	L	SP14	PE38	R127	2022-03-22 00:00:00.000000	2022-03-22 12:00:00.000000
15	PE60	Gispy Gulyferen	8954852739	gulyferen19@urfringtoppost.com	L	SP15	PE60	R126	2022-09-06 00:00:00.000000	2022-09-06 12:00:00.000000
16	PE20	Clarabelle Gong	8552961793	cgonig@gbob.com	L	SP16	PE20	R122	2020-10-18 00:00:00.000000	2020-10-18 12:00:00.000000
17	PE27	Jeth Bartow	8552961793	jbarlow@longinyc.com	P	SP17	PE27	R113	2022-01-20 00:00:00.000000	2022-01-20 12:00:00.000000
18	PE42	Ossie Meridian	8479251554	osmeridian@ytp.com	P	SP18	PE42	R124	2022-03-26 00:00:00.000000	2022-03-26 12:00:00.000000
19	PE35	Lizette Rodolico	8580013569	lrodolico12@google.co.jp	P	SP19	PE35	R145	2022-03-30 00:00:00.000000	2022-03-30 12:00:00.000000
20	PE26	Willow Deane	8379591374	wdeane12@google.co.jp	L	SP20	PE26	R127	2021-01-16 00:00:00.000000	2021-01-16 12:00:00.000000
21	PE33	Lizette Rodolico	8580013569	lrodolico12@google.co.jp	P	SP21	PE33	R130	2020-03-02 00:00:00.000000	2020-03-02 12:00:00.000000
22	PE24	Jandy Bassingthwaite	8895360488	jbassingthwaite10@outlook.com	L	SP22	PE24	R124	2022-05-27 00:00:00.000000	2022-05-27 12:00:00.000000
23	PE30	Willow Deane	8379591374	wdeane12@google.co.jp	P	SP23	PE30	R129	2022-05-29 00:00:00.000000	2022-05-29 12:00:00.000000
24	PE34	Shaugh Bernardeotte	8485522089	sbernarodette@urfringtoppost.com	P	SP24	PE34	R136	2022-09-07 12:00:00.000000	2022-09-07 00:00:00.000000
25	PE15	Noreen Agustin	8199259045	ngagustin@about.com	P	SP25	PE15	R131	2021-08-11 00:00:00.000000	2021-08-11 12:00:00.000000
26	PE30	Jarrett Bonmassa	8744957956	jarrettbonmassa@about.me	L	SP26	PE30	R136	2022-09-07 00:00:00.000000	2022-09-07 12:00:00.000000
27	PE27	Ossie Meridian	8479251554	osmeridian@charasseale.com	L	SP27	PE27	R136	2022-09-07 00:00:00.000000	2022-09-07 12:00:00.000000
28	PE03	Jeanne Bestlone	8698339883	jeannew12@funr.net	L	SP28	PE03	R127	2021-01-16 12:00:00.000000	2021-01-17 00:00:00.000000
29	PE36	Teodor Schlag	8109579807	tschlag@ncnews.com	P	SP29	PE36	R128	2020-11-30 00:00:00.000000	2020-11-30 12:00:00.000000
30	PE13	Noreen Agustin	8199259045	ngagustin@about.com	P	SP30	PE13	R114	2022-02-02 12:00:00.000000	2022-02-02 00:00:00.000000
31	PE11	Hairi Kidinoff	8973651976	mrkidinoff@people.co.uk	L	SP31	PE11	R125	2022-01-05 00:00:00.000000	2022-01-03 12:00:00.000000
32	PE17	Sanderson Wong	8377991451	swong@ajuney.com	P	SP32	PE17	R137	2022-05-18 00:00:00.000000	2022-05-18 12:00:00.000000
33	PE02	Erlina Georgiou	8527281896	egorghiou@ytp.com	P	SP33	PE02	R107	2021-08-01 00:00:00.000000	2021-08-01 12:00:00.000000
34	PE22	Clea Edina	83017435465	cedina@trt.gov	L	SP34	PE22	R143	2021-12-04 00:00:00.000000	2021-12-04 12:00:00.0

Laporan Tutorial Lab 2

Basis Data

Semester Ganjil 2022/2023



```
[2022-11-01 13:11:15] completed in 38 ms  
eduardus.tjitrarahardja.siwanap> SELECT *
```

3

ON P.id_perawat = S.id_perawat

13.

	example1.sql - example1.log										
#	id	shift_perawat	S_id_perawat	id_rewak_inap	waktu_muat_lai	waktu_uh_mtr	P_id_perawat	nama	no_telp	email	jenis_kelamin
1	SP01	PER02	R122	2021-12-07 08:00:00.000000	2021-12-07 12:00:00.000000	PE02	Erina Georgiou	85227801894	egergothiu@wp.com	P	
2	SP02	PER05	R114	2022-02-02 08:00:00.000000	2022-02-02 12:00:00.000000	PE05	Erena Wiley	80587104068	eskeyew@wp.com	P	
3	SP03	PER07	R116	2022-02-08 08:00:00.000000	2022-02-08 12:00:00.000000	PE07	Jessica Crawley	85227801895	mcrawley@wp.com.jp	L	
4	SP04	PER09	R142	2022-02-28 08:00:00.000000	2022-02-28 12:00:00.000000	PE09	Jeth Barlow	85229304783	barlowjeth@wp.com	P	
5	SP05	PER10	R110	2020-12-03 08:00:00.000000	2020-12-03 12:00:00.000000	PE10	Melissant Crawley	80967721263	mcrawley@wp.com.jp	L	
6	SP06	PER04	R136	2022-09-06 08:00:00.000000	2022-09-06 12:00:00.000000	PE06	Gennie Stewart	82141133165	gistem@wp.com	L	
7	SP07	PER31	R105	2021-04-27 08:00:00.000000	2022-04-29 12:00:00.000000	PE31	Kylee Franchini	84699973299	kfranchini@wp.google.it	L	
8	SP08	PER34	R101	2022-08-10 08:00:00.000000	2022-08-13 12:00:00.000000	PE34	Shaughn Bernardoite	84052720894	sbernaudote@huntingpost.com	P	
9	SP09	PER47	R105	2021-04-27 08:00:00.000000	2024-06-30 12:00:00.000000	PE47	Andrei Sandlund	85064534696	asandlund@ahunes.com	L	
10	SP10	PER34	R120	2020-05-06 08:00:00.000000	2020-05-06 12:00:00.000000	PE48	Shaughn Bernardoite	84052720894	sbernaudote@huntingpost.com	P	
11	SP11	PER41	R119	2020-06-07 08:00:00.000000	2020-06-07 12:00:00.000000	PE41	Davi Nihira	81919796430	dnihira@red.com	P	
12	SP12	PER35	R125	2020-11-01 08:00:00.000000	2020-11-01 12:00:00.000000	PE35	Ursula Gosselin	85227801896	ugosselin@wp.com	L	
13	SP13	PER45	R101	2022-08-13 08:00:00.000000	2022-08-14 08:00:00.000000	PE45	Filia Arevalo	8746321219	seanonly@about.me	P	
14	SP14	PER28	R126	2020-03-22 08:00:00.000000	2020-03-22 12:00:00.000000	PE28	Mitchell Gregor	86512138639	mgregor@chromegame.com	L	
15	SP15	PER46	R116	2022-03-24 08:00:00.000000	2022-03-28 12:00:00.000000	PE46	Gussy Gultenpet	89545872359	gulpetfan@thequeendom.com	L	
16	SP16	PER20	R122	2020-10-18 08:00:00.000000	2020-10-18 12:00:00.000000	PE20	Clarabelle Goss	8173754220	cgnog@tob.com	P	
17	SP17	PER27	R113	2022-01-20 08:00:00.000000	2022-01-20 12:00:00.000000	PE27	Jeth Barlow	85229304783	jbarlowjeth@wp.com	P	
18	SP18	PER47	R124	2022-05-26 08:00:00.000000	2022-05-26 12:00:00.000000	PE47	Andrei Sandlund	85064534696	asandlund@ahunes.com	L	
19	SP19	PER35	R145	2023-05-01 08:00:00.000000	2023-05-01 12:00:00.000000	PE35	Eliis Amedee	87453220894	eamedee@about.me	P	
20	SP20	PER37	R127	2021-01-19 08:00:00.000000	2021-01-19 12:00:00.000000	PE37	Willie De Croze	85227801897	wdecroze@wp.edu	P	
21	SP21	PER43	R120	2020-03-22 08:00:00.000000	2020-03-22 12:00:00.000000	PE43	Leistelle Boettcher	8506751984	leistelle@wp.edu	P	
22	SP22	PER26	R124	2022-05-26 08:00:00.000000	2022-05-27 08:00:00.000000	PE26	Jedding Basingham	8895306948	jbasingham@wp.com	L	
23	SP23	PER05	R110	2020-12-05 11:00:00.000000	2020-12-04 08:00:00.000000	PE05	Efren Wiley	80587104068	eskeyew@wp.com	P	
24	SP24	PER34	R136	2022-09-20 11:00:00.000000	2022-09-27 08:00:00.000000	PE34	Shaughn Bernardoite	84052720894	sbernaudote@huntingpost.com	P	
25	SP25	PER13	R131	2021-08-18 08:00:00.000000	2021-08-18 12:00:00.000000	PE13	Noreen Agostino	8119929090	nagostino@about.com	P	
26	SP26	PER30	R136	2022-09-17 08:00:00.000000	2022-09-17 12:00:00.000000	PE30	Jarrett Bompass	87405577954	jompast@chromestore.com	L	
27	SP27	PER42	R129	2021-12-28 08:00:00.000000	2021-12-28 12:00:00.000000	PE42	Ossie Merriday	8472613154	overday@lbgg.org	P	
28	SP28	PER33	R127	2022-01-10 08:00:00.000000	2022-01-10 12:00:00.000000	PE33	Jenna Beswick	83093838795	jbewick@wp.net	P	
29	SP29	PER36	R126	2022-01-16 08:00:00.000000	2022-01-16 12:00:00.000000	PE36	Torsten Blag	8106291984	tblag@wp.com	P	
30	SP30	PER13	R116	2022-02-02 08:00:00.000000	2022-02-03 08:00:00.000000	PE13	Moren Apóstoli	81992942005	morsip@wpabout.com	P	
31	SP31	PER11	R125	2022-01-03 08:00:00.000000	2022-01-03 12:00:00.000000	PE11	Mairi Riddish	89730349789	mriddish@wp.co.uk	L	
32	SP32	PER17	R137	2022-05-18 08:00:00.000000	2022-05-18 12:00:00.000000	PE17	Sanderson Wong	83709314051	swong@wpayley.com	P	
33	SP33	PER02	R107	2021-08-01 08:00:00.000000	2021-08-01 12:00:00.000000	PE02	Erina Georgiou	85227801894	egergothiu@wp.com	P	
34	SP34	PER22	R143	2021-12-04 08:00:00.000000	2021-12-04 12:00:00.000000	PE02	Claire Eddin	83074153463	ceddin@tpt.gov	L	

```
[2022-11-01 13:11:15] 110 rows retrieved starting from 1 in 124 ms (execution: 73 ms)
eduardus.tjitrahardja.siwanap> SELECT *
    FROM OBAT O
        FULL OUTER JOIN PEMBERIAN_OBAT PO
```

14.

	O.id_obat	nama	P.id_pemberian_obat	P.id_shift_perawat	P0.id_obat	dosis
1	0801	calcitonin salmon	P040	SP32	0801	7 mg
2	0801	calcitonin salmon	P011	SP22	0801	53 mg
3	0802	Estazolam	P060	SP89	0802	54 mg
4	0802	Estazolam	P043	SP15	0802	50 mg
5	0802	Estazolam	P022	SP13	0802	43 mg
6	0802	Estazolam	P014	SP81	0802	78 mg
7	0803	ARNICA MONTANA - RHUS TOXICODENDRON - RUTA GRAVEOLENS	<null>	<null>	<null>	<null>
8	0804	ANTIPYRINE AND BENZOCAINE	P075	SP77	0804	80 mg
9	0804	ANTIPYRINE AND BENZOCAINE	P032	SP22	0804	45 mg
10	0805	Phenobarbital	P083	SP34	0805	66 mg
11	0805	Phenobarbital	P019	SP22	0805	20 mg
12	0806	levofloxacin	P073	SP42	0806	30 mg
13	0806	levofloxacin	P066	SP91	0806	68 mg
14	0806	levofloxacin	P007	SP78	0806	66 mg
15	0807	Albuterol Sulfate	P071	SP68	0807	36 mg
16	0808	RISPERIDONE	P0106	SP94	0808	60 mg
17	0808	RISPERIDONE	P067	SP62	0808	42 mg
18	0808	RISPERIDONE	P049	SP52	0808	45 mg
19	0808	RISPERIDONE	P036	SP91	0808	15 mg
20	0808	RISPERIDONE	P028	SP13	0808	94 mg
21	0809	Levothyroxine Sodium	P063	SP20	0809	20 mg
22	0810	calcipotriene 0.005% and betamethasone dipropionate 0.04%	P093	SP32	0810	25 mg
23	0810	calcipotriene 0.005% and betamethasone dipropionate 0.04%	P027	SP12	0810	5 mg
24	0811	sus scrofa small intestine mucosa lymph follicle	P009	SP81	0811	76 mg
25	0812	Benzalkonium Chloride	P086	SP64	0812	91 mg
26	0812	Benzalkonium Chloride	P081	SP55	0812	56 mg
27	0812	Benzalkonium Chloride	P065	SP29	0812	43 mg
28	0812	Benzalkonium Chloride	P058	SP83	0812	33 mg
29	0812	Benzalkonium Chloride	P010	SP98	0812	68 mg
30	0813	HYDROCODONE BITARTRATE AND ACETAMINOPHEN	P091	SP33	0813	98 mg
31	0813	HYDROCODONE BITARTRATE AND ACETAMINOPHEN	P003	SP57	0813	14 mg
32	0814	Natural Medicine	P088	SP80	0814	80 mg
33	0814	Natural Medicine	P042	SP85	0814	49 mg
34	0814	Natural Medicine	P020	SP88	0814	99 mg

Laporan Tutorial Lab 2

Basis Data

Semester Ganjil 2022/2023



FACULTY OF
**COMPUTER
SCIENCE**

```
[2022-11-01 13:12:19] 107 rows retrieved starting from 1 in 67 ms (e  
duardus.tjitrahardja.siwanap> SELECT *  
    FROM PERAWAT  
    NATURAL JOIN SHIFT_PERAWAT
```

15. NATURAL JOIN SHIFT_PERAWAT

example1.sql - example1.sql										
example1.sql - example1.sql										
[100 rows] >										
#	id_perawat	nama	no_telp	email	jenis_kelamin	id_shift_perawat	id_rewak_inap	waktu_masuk	waktu_kahir	
1	PE02	Erina Georgiou	85227810394	georgiou@yelp.com	P	SP01	R123	2021-12-07 00:00:00.0000000	2021-12-07 12:00:00.0000000	
2	PE08	Efrén Wikey	85081704068	mikey@gipsy.com	P	SP02	R124	2022-02-02 08:00:00.0000000	2022-03-02 12:00:00.0000000	
3	PE39	Mellicent Crowley	89447713032	scrowley12@google.ca.jp	L	SP03	R169	2020-09-11 00:00:00.0000000	2020-09-11 12:00:00.0000000	
4	PE27	Jeth Barlow	85292047031	jbarlow@tinyinc.com	P	SP04	R142	2022-09-29 08:00:00.0000000	2022-09-29 12:00:00.0000000	
5	PE39	Mellicent Crowley	89447713032	scrowley12@google.ca.jp	L	SP05	R130	2020-12-03 08:00:00.0000000	2020-12-03 12:00:00.0000000	
6	PE04	Gennie Stewart	82141135111	pstewart@jlab.org	C	SP06	R136	2022-09-06 08:00:00.0000000	2022-09-06 12:00:00.0000000	
7	PE31	Kyle Fraschini	85049875239	lfraschini@google.it	L	SP07	R105	2021-04-29 00:00:00.0000000	2021-04-29 12:00:00.0000000	
8	PE54	Shaughn Bernhardt	84635272084	sbernardotx@hurtingtopnotch.com	P	SP08	R101	2022-08-15 08:00:00.0000000	2022-08-15 12:00:00.0000000	
9	PE07	Andrei Sandland	85050435394	asandland@ajnews.com	L	SP09	R105	2021-04-29 12:00:00.0000000	2021-04-30 00:00:00.0000000	
10	PE54	Shaughn Bernhardt	84635272084	sbernardotx@hurtingtopnotch.com	P	SP10	R128	2020-04-05 08:00:00.0000000	2020-04-05 12:00:00.0000000	
11	PE41	Dasi Mirans	81993179842	dmirans@wired.com	P	SP11	R115	2020-04-27 08:00:00.0000000	2020-04-27 12:00:00.0000000	
12	PE15	Brennon Sebring	85497989160	bsebring@usatoday.com	L	SP12	R104	2020-11-13 08:00:00.0000000	2020-11-13 12:00:00.0000000	
13	PE35	Ella Arnold	87453242129	earnoldly@about.me	P	SP13	R101	2022-08-13 12:00:00.0000000	2022-08-14 00:00:00.0000000	
14	PE28	Mitchell Greger	8522313839	mgreger@chromeeengine.com	L	SP14	R126	2020-03-22 08:00:00.0000000	2020-03-22 12:00:00.0000000	
15	PE66	Gipsy Gullfet	89545827319	gulflet@tigheguardian.com	L	SP15	R116	2022-03-28 08:00:00.0000000	2022-03-28 12:00:00.0000000	
16	PE20	Charlenele Gong	8173372728	cgon@yglob.com	L	SP10	R122	2020-10-18 08:00:00.0000000	2020-10-18 12:00:00.0000000	
17	PE27	Jeth Barlow	85292047031	jbarlow@tinyinc.com	P	SP17	R113	2021-01-20 00:00:00.0000000	2021-01-20 12:00:00.0000000	
18	PE67	Andrei Sandland	85050435394	asandland@ajnews.com	L	SP18	R124	2022-05-26 08:00:00.0000000	2022-05-26 12:00:00.0000000	
19	PE35	Ella Arnold	87453242129	earnoldly@about.me	P	SP19	R145	2022-03-30 08:00:00.0000000	2022-03-30 12:00:00.0000000	
20	PE26	Willow De Cruce	85175917341	wdecruce@tinyinc.com	L	SP20	R127	2021-01-16 08:00:00.0000000	2021-01-16 12:00:00.0000000	
21	PE33	Lizette Roldico	85694719894	lroldico@uiuc.edu	P	SP21	R130	2020-03-02 08:00:00.0000000	2020-03-02 12:00:00.0000000	
22	PE24	Jenny Bassingham	88953046280	jbassingham@ben.io	L	SP22	R124	2022-05-26 08:00:00.0000000	2022-05-27 00:00:00.0000000	
23	PE05	Efrén Wikey	85081704068	mikey@gipsy.com	P	SP23	R110	2020-12-03 08:00:00.0000000	2020-12-04 00:00:00.0000000	
24	PE54	Shaughn Bernhardt	84635272084	sbernardotx@hurtingtopnotch.com	P	SP24	R155	2022-09-06 08:00:00.0000000	2022-09-07 00:00:00.0000000	
25	PE13	Noreen Agostini	81992599595	nagostinicabout.com	P	SP25	R131	2021-08-13 00:00:00.0000000	2021-08-13 12:00:00.0000000	
26	PE30	Jarrett Bompast	87495579595	jbompast@sharealeate.com	L	SP26	R156	2022-09-07 08:00:00.0000000	2022-09-07 12:00:00.0000000	
27	PE42	Ossie Merriday	87247315101	ommerriday@ggpp.org	P	SP27	R129	2021-12-28 00:00:00.0000000	2021-12-28 12:00:00.0000000	
28	PE03	Jeanna Baseline	96383898853	jbaseline@flur.net	L	SP28	R127	2021-01-16 08:00:00.0000000	2021-01-17 00:00:00.0000000	
29	PE56	Teodor Schlag	81695780870	tschlag@bbcnews.com	P	SP29	R120	2020-11-30 08:00:00.0000000	2020-11-30 12:00:00.0000000	
30	PE13	Noreen Agostini	81992599595	nagostinicabout.com	P	SP30	R114	2022-02-02 08:00:00.0000000	2022-02-03 00:00:00.0000000	
31	PE11	Maia Ridgich	98761947808	mriddich@google.co.uk	L	SP31	R125	2022-01-03 08:00:00.0000000	2022-01-03 12:00:00.0000000	
32	PE17	Sanderdon Worg	83770914051	swong@peaky.com	P	SP32	R157	2022-05-18 08:00:00.0000000	2022-05-18 12:00:00.0000000	
33	PE02	Erina Georgiou	85227810394	georgiou@yelp.com	P	SP33	R107	2021-08-01 08:00:00.0000000	2021-08-01 12:00:00.0000000	

eduardus.tjitrahardja.siwanap> SELECT id_pasien
FROM RAWAT_INAP
WHERE tgl_keluar IS NOT NULL
[2022-11-01 13:14:42] 45 rows retrieved starting from 1 in 43 ms (execut

	id_pasien
1	PA11
2	PA29
3	PA02
4	PA47
5	PA44
6	PA33
7	PA07
8	PA34
9	PA12
10	PA48
11	PA34
12	PA22
13	PA14
14	PA44
15	PA08
16	PA09
17	PA17

```
Output -- 17 ×  
eduardus.tjitrabhardja.sivanap> SELECT id_pasien  
        FROM RAWAT_INAP  
       WHERE tgl_keluar IS NULL  
[2022-11-01 13:15:00] 5 rows retrieved starting from 1 in 61 ms (execut  


|   | id_pasien |
|---|-----------|
| 1 | PA43      |
| 2 | PA22      |
| 3 | PA19      |
| 4 | PA25      |
| 5 | PA32      |


```

Laporan Tutorial Lab 2

Basis Data

Semester Ganjil 2022/2023

18.

```
eduardus.tjitrahardja.siwanap> SELECT O.nama
   FROM OBAT O
  WHERE O.id_obat IN (SELECT PO.id_obat
   FROM PEMERIAN_OBAT PO,
        SHIFT_PERAWAT SP,
        PERAWAT P
  WHERE PO.id_shift_perawat = SP.id_shift_perawat
    AND SP.id_perawat = P.id_perawat
    AND P.nama = 'Mitchell (gregen)')
[2022-11-01 13:15:17] 5 rows retrieved starting from 1 in 30 ms (execution: 20 ms, fetching: 16 ms)
```

nama
Triclosan
Codeine Phosphate, Phenylephrine Hydrochloride, Pyrilamine Maleate
RISPERIDONE
levofloxacin
Acetaminophen

19.

```
eduardus.tjitrahardja.siwanap> SELECT P.id_perawat, P.nama
   FROM PERAWAT P
  WHERE NOT EXISTS(
    SELECT *
      FROM PEMERIAN_OBAT PO,
        SHIFT_PERAWAT SP
     WHERE PO.id_shift_perawat = SP.id_shift_perawat
       AND SP.id_perawat = P.id_perawat
)
[2022-11-01 13:15:38] 13 rows retrieved starting from 1 in 128 ms (execution: 111 ms, fetching: 17 ms)
```

id_perawat	nama
PE01	Asa Huddlestone
PE04	Gannie Stewart
PE06	Talbot Dust
PE08	Constantine Hukin
PE16	Charyl Doornba
PE18	Russell Prestedge
PE21	Karen Cotillard
PE23	Dalis Rummings
PE29	Vonny Northway
PE32	Rafa Demare
PE37	Nobe Claye
PE48	Jeremias Chickmore
PE50	Bella Prall

20.

```
eduardus.tjitrahardja.siwanap> SELECT MIN(harga)
   FROM KAMAR
[2022-11-01 13:15:55] 1 row retrieved starting from 1 in 1 ms
```

min
170000

21.

```
eduardus.tjitrahardja.siwanap> SELECT MAX(harga)
   FROM KAMAR
[2022-11-01 13:17:27] 1 row retrieved starting from 1 in 1 ms
```

max
3100000

22.

```
eduardus.tjitrahardja.siwanap> SELECT COUNT(*)
   FROM KAMAR
[2022-11-01 13:17:40] 1 row retrieved starting from 1 in 1 ms
```

count
45

23.

```
eduardus.tjitrahardja.siwanap> SELECT SUM(kapasitas)
   FROM KAMAR
[2022-11-01 13:18:20] 1 row retrieved starting from 1 in 1 ms
```

sum
90

24.

```
eduardus.tjitrahardja.siwanap> SELECT AVG(harga)
   FROM KAMAR
[2022-11-01 13:18:56] 1 row retrieved starting from 1 in 1 ms
```

avg
1196666.666666666667

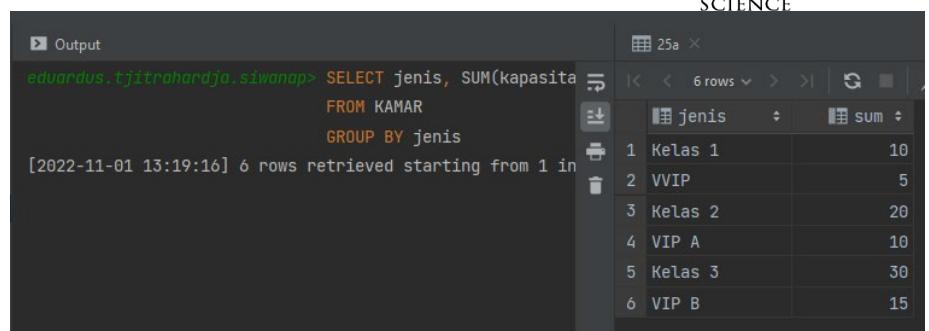
25.

Laporan Tutorial Lab 2

Basis Data

Semester Ganjil 2022/2023

a.

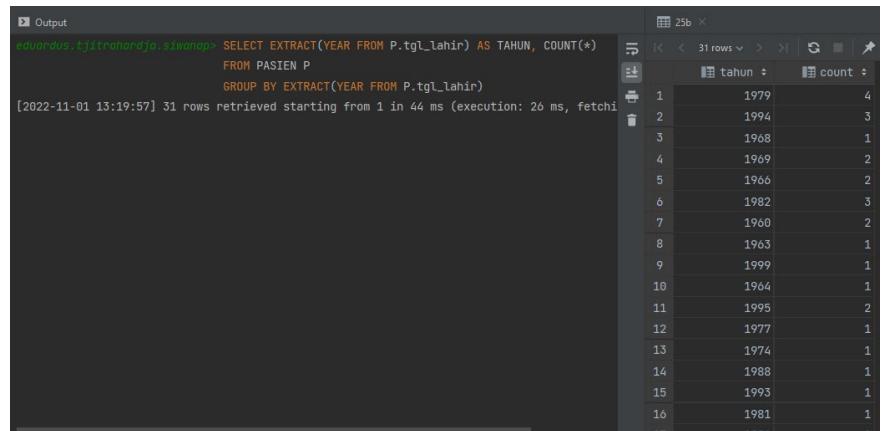


```
eduardus.tjitrabhardja.siwanap> SELECT jenis, SUM(kapasita
   FROM KAMAR
  GROUP BY jenis
[2022-11-01 13:19:16] 6 rows retrieved starting from 1 in 1 ms
```

jenis	sum
Kelas 1	10
VVIP	5
Kelas 2	20
VIP A	10
Kelas 3	30
VIP B	15

a.

b.



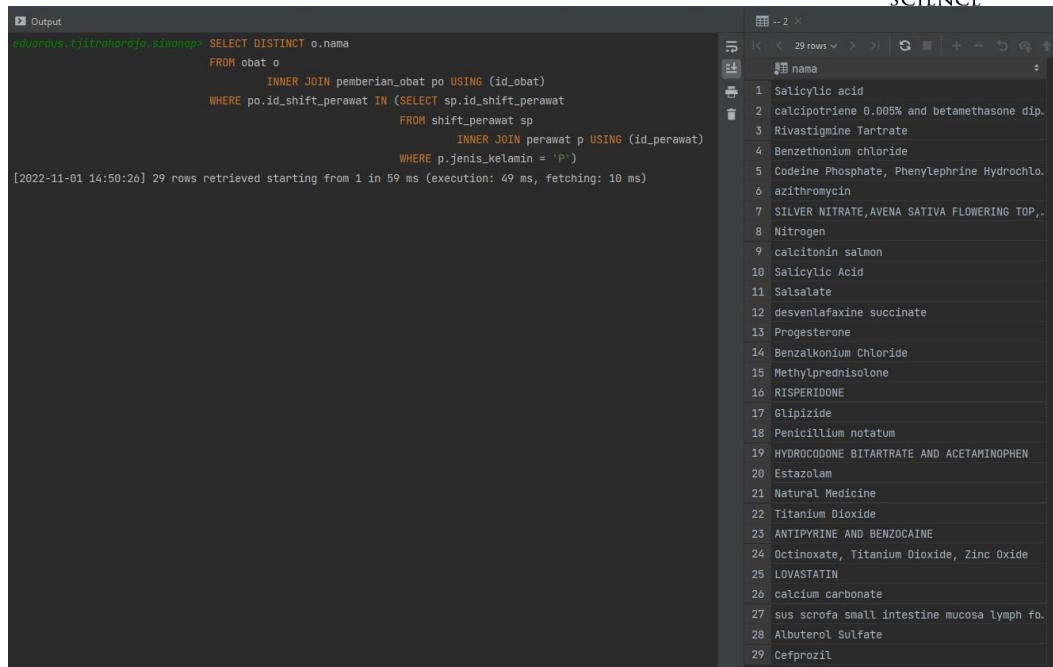
```
eduardus.tjitrabhardja.siwanap> SELECT EXTRACT(YEAR FROM P.tgl_lahir) AS TAHUN, COUNT(*)
   FROM PASIEN P
  GROUP BY EXTRACT(YEAR FROM P.tgl_lahir)
[2022-11-01 13:19:57] 31 rows retrieved starting from 1 in 44 ms (execution: 26 ms, fetchin
```

tauhun	count
1979	4
1994	3
1968	1
1969	2
1966	2
1982	3
1960	2
1963	1
1999	1
1964	1
1995	2
1977	1
1974	1
1988	1
1993	1
1981	1
1962	1
1970	1
1985	1
1971	1
1987	1
1973	1
1984	1
1976	1
1989	1
1978	1
1991	1
1983	1
1975	1
1986	1
1972	1
1988	1
1990	1
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2042	1
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2046	1
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2062	1
2063	1
2064	1
2065	1
2066	1
2067	1
2068	1
2069	1
2070	1
2071	1
2072	1
2073	1
2074	1
2075	1
2076	1
2077	1
2078	1
2079	1
2080	1
2081	1
2082	1
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2084	1
2085	1
2086	1
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2073	1
2074	1
2075	1
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2077	1
2078	1
2079	1
2080	1
2081	1
2082	1
2083	1
2084	1
2085	1
2086	1
2087	1
2088	1
2089	1
2090	1
2091	1
2092	1
2093	1
2094	1
2095	1
2096	1
2097	1
2098	1
2099	1

Laporan Tutorial Lab 2

Basis Data

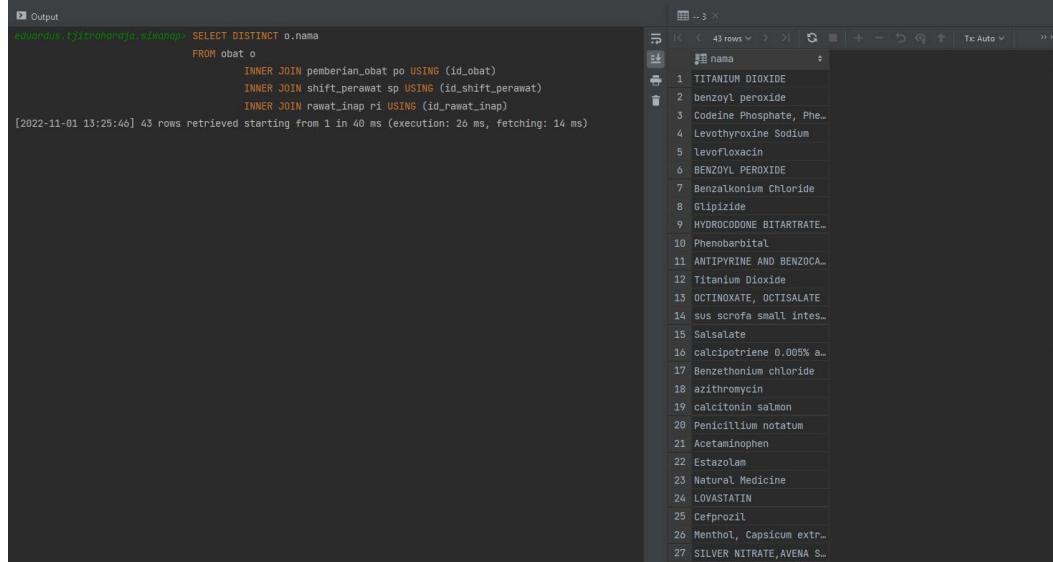
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```
Output
eduardus.tjitrabhardja_siewanap> SELECT DISTINCT o.nama
   FROM obat o
         INNER JOIN pemberian_obat po USING (id_obat)
        WHERE po.id_shift_perawat IN (SELECT sp.id_shift_perawat
                                         FROM shift_perawat sp
                                         INNER JOIN perawat p USING (id_perawat)
                                         WHERE p.jenis_kelamin = 'P')
[2022-11-01 14:50:26] 29 rows retrieved starting from 1 in 59 ms (execution: 49 ms, fetching: 10 ms)

-- 2 --
nama
1 Salicylic acid
2 calcipotriene 0.005% and betamethasone dip.
3 Rivastigmine Tartrate
4 Benzethonium chloride
5 Codeine Phosphate, Phenylephrine Hydrochlo.
6 azithromycin
7 SILVER NITRATE, AVENA SATIVA FLOWERING TOP,-
8 Nitrogen
9 calcitonin salmon
10 Salicylic Acid
11 Salsalate
12 desvenlafaxine succinate
13 Progesterone
14 Benzalkonium Chloride
15 Methylprednisolone
16 RISPERIDONE
17 Glipizide
18 Penicillium notatum
19 HYDROCODONE BITARTRATE AND ACETAMINOPHEN
20 Estazolam
21 Natural Medicine
22 Titanium Dioxide
23 ANTIPYRINE AND BENZOCAINE
24 Octinoxate, Titanium Dioxide, Zinc Oxide
25 LOVASTATIN
26 calcium carbonate
27 sus scrofa small intestine mucosa lymph fo.
28 Albuterol Sulfate
29 Cefprozil
```

3. [SQL] Tampilkan nama UNIK obat yang **setidaknya** telah diberikan pada pasien.



```
Output
eduardus.tjitrabhardja_siewanap> SELECT DISTINCT o.nama
   FROM obat o
         INNER JOIN pemberian_obat po USING (id_obat)
        INNER JOIN shift_perawat sp USING (id_shift_perawat)
        INNER JOIN rawat_inap ri USING (id_rawat_inap)
[2022-11-01 13:25:46] 43 rows retrieved starting from 1 in 40 ms (execution: 26 ms, fetching: 14 ms)

-- 3 --
nama
1 TITANIUM DIOXIDE
2 benzoyl peroxide
3 Codeine Phosphate, Phe..
4 Levothyroxine Sodium
5 levofloxacin
6 BENZOYL PEROXIDE
7 Benzalkonium Chloride
8 Glipizide
9 HYDROCODONE BITARTRATE...
10 Phenobarbital
11 ANTIPYRINE AND BENZOC...
12 Titanium Dioxide
13 OCTINOXATE, OCTISALATE
14 sus scrofa small intes...
15 Salsalate
16 calcipotriene 0.005% a...
17 Benzethonium chloride
18 azithromycin
19 calcitonin salmon
20 Penicillium notatum
21 Acetaminophen
22 Estazolam
23 Natural Medicine
24 LOVASTATIN
25 Cefprozil
26 Menthol, Capsicum extr...
27 SILVER NITRATE, AVENA S...
```

4. [SQL] Tampilkan daftar dokter yang tidak pernah merawat pasien rawat inap.

Laporan Tutorial Lab 2

Basis Data

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FACULTY OF
COMPUTER
SCIENCE

Output

```
eduardus.tjitrarwaja.siwawap> SELECT *
  FROM dokter
 WHERE id_dokter NOT IN (SELECT id_dokter
                           FROM dokter_rawat_inap)
[2022-11-01 13:26:13] 19 rows retrieved starting from 1 in 53 ms (execution: 33 ms)
```

Table:

	id_dokter	nama	no_telp	email	spesialisasi
1	D005	Frederique Pruce	8347355115	fpruce@qps.gov	penyakit dalam
2	D007	Ly Spelllessy	87114027540	lspelllessy@blogspot.com	penyakit dalam
3	D008	Den Stollsteimer	85054750630	dstollsteimer7@myspace..anak	
4	D010	Mooreen Hebbethwaite	83109586118	mhebbethwaite@uzzfee..anak	
5	D013	Meade Munn	85430372820	mmunncg@si.edu	anak
6	D015	Rachael Redmire	81414637298	rredmiree@imeo.com	saraf
7	D017	Stewart Filkov	8143819883	sfilkov@fastcompany.com	saraf
8	D018	Nero Vanyard	81884545781	nvanyard@technorati.com	saraf
9	D019	Shepperd Lichfield	84437097707	slinchfielddigitiny.cc	saraf
10	D021	Lazaro Morston	84529491412	lmorston@ymag.com	saraf
11	D024	Betty Normandale	83088832291	bnormandale@list-manag..kandungan dan gir	
12	D031	Gearard Stapells	89738280407	gstapells@mc560.com	bedan
13	D032	Cassandra Noddles	81220215324	cnoddles@tel.com	bedan
14	D037	Laury Galiford	89124683409	lgaliford10@sfgate.com	kulit dan kelamir
15	D040	Tobias Trusse	81023710802	ttrusse13@sun.com	kulit dan kelamir
16	D041	Geoff Wintrop	87843866302	gwintrop14@yelp.com	kulit dan kelamir
17	D043	Sigismund Stockbridge	84252661653	sstockbridge1@psu.edu	kulit dan kelamir
18	D048	Lari Jobbings	81309045282	ljobbings1@furl.net	mata
19	D050	Ulrich Denisevich	85685363651	udenisevich1@symantec..mata	

5. [SQL] Tampilkan nama dokter dengan total jumlah pasien rawat inap yang telah ditugaskan kepada dokter tersebut diurutkan berdasarkan ascending alphabetical order (A-Z) dari namanya, tanpa peduli jika dokter tersebut memiliki pasien rawat inap atau tidak.

ASUMSI:

Jumlah pasien dihitung berdasarkan **id_rawat_inap**, jadi Pasien yang dirawat tidak harus unik.

Output

```
eduardus.tjitrarwaja.siwawap> SELECT d.nama,
   SUM(CASE WHEN dri.id_rawat_inap IS NOT NULL THEN 1 ELSE 0 END) AS jumlah_pasien_ri
  FROM dokter d
  LEFT JOIN dokter_rawat_inap dri USING (id_dokter)
 GROUP BY 1
 ORDER BY 1
[2022-11-01 13:27:38] 50 rows retrieved starting from 1 in 58 ms (execution: 35 ms, fetching: 23 ms)
```

Table:

	nama	jumlah_pasien_ri
1	Adams Savage	1
2	Barty Leebeter	2
3	Betty Normandale	0
4	Bev Pierci	1
5	Brantley Ludem	2
6	Candy Arninger	1
7	Carl Adelsberg	2
8	Cassandra Noddles	0
9	Darbie Howle	1
10	Dean Gilhespy	2
11	Den Stollsteimer	0
12	Devlin Earney	1
13	Emery Brakespear	1
14	Fanechka Maryman	4
15	Frederique Pruce	0
16	Garry Aspinell	1
17	Gearard Stapells	0
18	Genieve Guillotin	2
19	Geoff Wintrop	0
20	Gerianne Mandall	3
21	Halsey Ivashchenko	1
22	Idalia Caught	1
23	Jacinta Micco	2

6. [SQL] Tampilkan jumlah pasien yang lahir pada setiap bulan. Anda disarankan menggunakan EXTRACT

Output

```
eduardus.tjitrarwaja.siwawap> SELECT EXTRACT(MONTH FROM tgl_lahir) AS bulan, COUNT(*)
  FROM pasien
 GROUP BY 1
 ORDER BY 1
[2022-11-01 16:21:38] 12 rows retrieved starting from 1 in 88 ms (execution: 75 ms, fetch
```

Table:

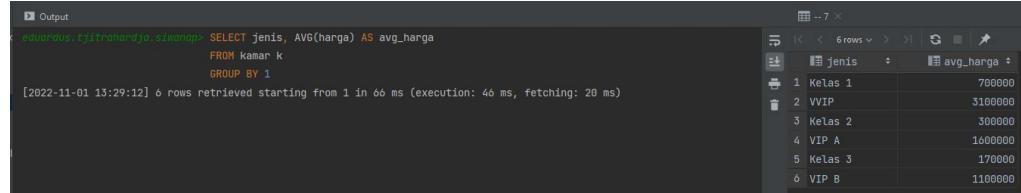
	bulan	count
1	1	2
2	2	3
3	3	8
4	4	5
5	5	7
6	6	7
7	7	3
8	8	4
9	9	2
10	10	3
11	11	3
12	12	2

Laporan Tutorial Lab 2

Basis Data

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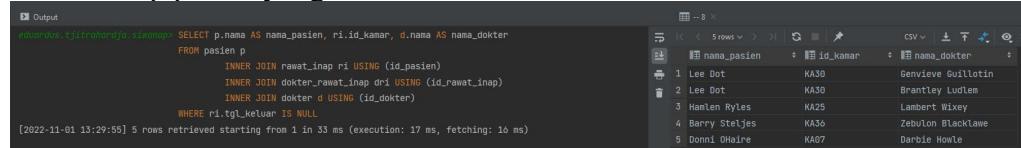
7. [SQL] Tampilkan **jenis kamar** dan **harga rata-rata** kamar untuk setiap jenis kamar.



```
eduardus.tjitrahardja.siwana> SELECT jenis, AVG(harga) AS avg_harga
   FROM kamar K
  GROUP BY 1
[2022-11-01 13:29:12] 6 rows retrieved starting from 1 in 66 ms (execution: 46 ms, fetching: 20 ms)
```

jenis	avg_harga
Kelas 1	700000
VVIP	3100000
Kelas 2	300000
VIP A	1600000
Kelas 3	170000
VIP B	1100000

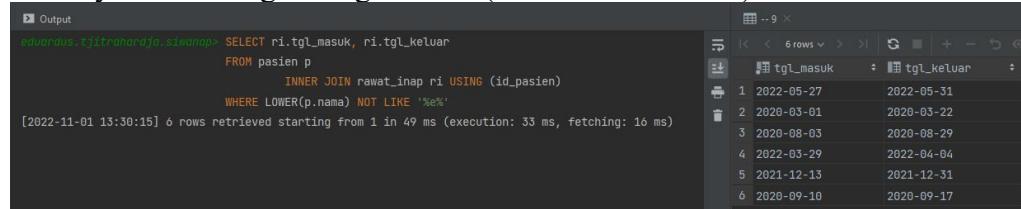
8. [SQL] Tampilkan **nama pasien**, **id kamar**, dan **nama dokter** yang bertugas untuk setiap pasien yang masih dirawat di rumah sakit.



```
eduardus.tjitrahardja.siwana> SELECT p.nama AS nama_pasien, ri.id_kamar, d.nama AS nama_dokter
   FROM pasien p
  INNER JOIN rawat_inap ri USING (id_pasien)
  INNER JOIN dokter rawat_inap drs USING (id_rawat_inap)
  INNER JOIN dokter d USING (id_dokter)
 WHERE ri.tgl_keluar IS NULL
[2022-11-01 13:29:55] 5 rows retrieved starting from 1 in 33 ms (execution: 17 ms, fetching: 16 ms)
```

nama_pasien	id_kamar	nama_dokter
Lee Dot	KA30	Genvieve Guillotin
Lee Dot	KA30	Brantley Ludlam
Hamlen Ryles	KA25	Lambert Wixley
Barry Stetjes	KA30	Zebulon Blacklawe
Donnti O'haire	KA07	Darbie Howle

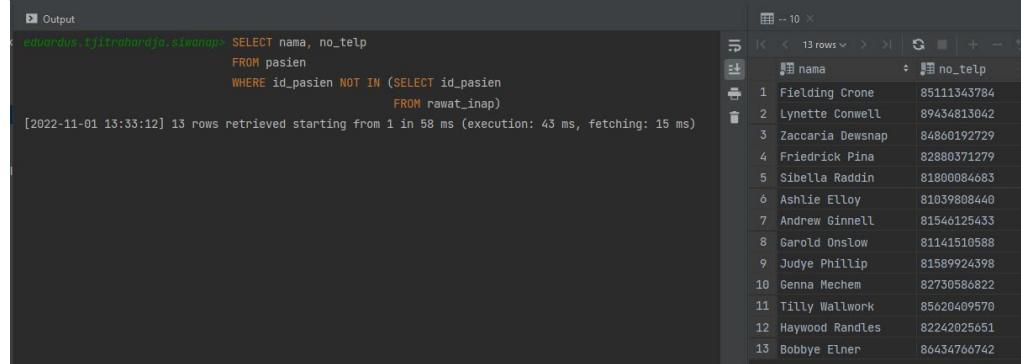
9. [SQL] Tampilkan **tanggal masuk** dan **tanggal keluar** setiap pasien yang namanya tidak mengandung huruf E (tidak case sensitive).



```
eduardus.tjitrahardja.siwana> SELECT ri.tgl_masuk, ri.tgl_keluar
   FROM pasien p
  INNER JOIN rawat_inap ri USING (id_pasien)
 WHERE LOWER(p.nama) NOT LIKE '%E%'
[2022-11-01 13:30:15] 6 rows retrieved starting from 1 in 49 ms (execution: 33 ms, fetching: 16 ms)
```

tgl_masuk	tgl_keluar
2022-05-27	2022-05-31
2020-03-01	2020-03-22
2020-08-03	2020-08-29
2022-03-29	2022-04-04
2021-12-13	2021-12-31
2020-09-10	2020-09-17

10. [SQL] Tampilkan **nama** dan **nomor telepon** pasien yang tidak pernah menjadi pasien rawat inap.



```
eduardus.tjitrahardja.siwana> SELECT nama, no_telp
   FROM pasien
  WHERE id_pasien NOT IN (SELECT id_pasien
                           FROM rawat_inap)
[2022-11-01 13:33:12] 13 rows retrieved starting from 1 in 58 ms (execution: 43 ms, fetching: 15 ms)
```

nama	no_telp
Fielding Crone	85111343784
Lynette Cornwell	89434813042
Zaccaria Dewsnap	84860192729
Friedrick Pina	82880371279
Sibella Raddin	81800084683
Ashlie Elloy	81039808440
Andrew Ginnell	81546125433
Garold Onslow	81141510588
Judyre Phillip	81589924398
Genna Mechem	82730586822
Tilly Wallwork	85620409570
Haywood Randles	82242025651
Bobbye Elner	86434766742

11. [SQL] Tampilkan daftar pasien yang pernah menjadi pasien rawat inap di kamar jenis VIP atau VVIP. Anda harus menggunakan keyword **UNION**.

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```
eduardus.tjitrahardja.siwanap> SELECT p.*  
      FROM pasien p  
            INNER JOIN rawat_inap ri USING (id_pasien)  
            INNER JOIN kamar k USING (id_kamar)  
      WHERE k.jenis LIKE 'VIP%'  
      UNION  
      SELECT p.*  
      FROM pasien p  
            INNER JOIN rawat_inap ri USING (id_pasien)  
            INNER JOIN kamar k USING (id_kamar)  
      WHERE k.jenis = 'VVIP'
```

<code>id_pasien</code>	<code>nama</code>	<code>alamat</code>	<code>no_telp</code>	<code>email</code>	<code>tgl_lahir</code>	<code>jenis_kelamin</code>
PA01	Rey Ferrieri	Jl Raya PKP, Dki Jakarta	87667076022	rferrieri@latimes.com	1960-07-29	L
PA02	Englebert Glassard	Jl. Pluit Raya No. 19, Jakarta Raya	83613307057	eglassard1@imdb.com	1972-08-09	L
PA05	Cesar Witard	Plaza City View, Building	83060150583	cwitard4@ca.gov	1969-03-12	L
PA06	Jayme Clew	Jl Bisma Raya Bl D-1/22, Dki Jakarta	82731096705	jclew5@exblog.jp	1982-08-18	L
PA07	Rodney Di Biasio	Jl Jatinegara Brt 122, Dki Jakarta	86987105340	rdi@amazon.de	1966-06-27	L
PA09	Gilemette Gresswell	Jl Adam 103 Sukabumi Utara, Dki Jaka.	86224127948	ggresswell8@amazon.co.uk	1981-05-27	P
PA11	Padraig De Francisci	Jl H Agus Salim 69, Jakarta	87388709917	pdea@slideshare.net	1994-06-03	P
PA14	Clarisse Pennuzzi	Jl Rawagedam IV 7, Dki Jakarta	86444824850	cpennuzzid@pbs.org	1963-04-24	P
PA20	Chariot Huffadine	Jl Mangga Dua Raya Psr Pagi Mangga D.	81254024034	chuffadinej@ebay.com	1972-11-22	L
PA22	Lee Dot	Jl Pembangunan II 15 A/1, Dki Jakarta	89774964683	ldot@etsy.com	2002-12-18	L
PA25	Hamlen Ryles	Jl Jend A Yani 286 Ged Graha Pangeran.	89078717955	hryleso@xblog.jp	1995-10-15	P
PA27	Archibaldo Wanklyn	Jl Jelambar Jaya II 8, Dki Jakarta	87948788158	awanklynq@prweb.com	1968-07-21	P
PA28	Stewart Mustard	Jl KH Hasyim Ashari 33-0, Dki Jakarta	881776079007	smustard9@phpb.com	1964-01-10	L
PA29	Bevin Carlin	Jl Jelambar Brt III/20, Dki Jakarta	87072282157	bcarlinos@paypal.com	1960-05-15	L
PA30	Orson MacGiffin	Psr Kecapi 12, Dki Jakarta	83721927052	onacgiffint@marriott.com	1977-04-13	P
PA32	Barry Steljes	Jl Kramat Raya 148 F, Dki Jakarta	86378562628	bsteljes@bigcartel.com	1984-03-28	L
PA33	Meade Redington	Jl Sunan Muria 7 RT 007/015, Dki Jak.	83145220454	mredingtonw@wikipedia.org	1992-02-15	L
PA34	Maitilde Cundey	Jl Melayu Besar 68, Dki Jakarta	89473689365	mcundeyx@xrea.com	1996-04-06	P
PA36	Karel Stoggell	Jl Batu Tulis 16, Dki Jakarta	85872264465	kstoggell@olobo.com	1969-06-04	L
PA40	Yard Fiddler	Jl Cengkeh 16/17, Dki Jakarta	81354446380	yfiddler13@delicious.com	1967-10-10	L
PA42	Fiona Passmore	Jl Tenggiri 2, Dki Jakarta	81858210291	fpassmore15@gmpg.org	1970-11-19	P
PA44	Elena Badgers	Plaza Ciputat Mas Bl C/5 A Kaw CDEF,	82734861577	ebadgers17@mit.edu	1994-03-15	P
PA45	Welsh Landeaux	Jl Krekot Jaya Bl E/3, Dki Jakarta	81289839793	wlandeaux18@google.de	1974-03-03	L
PA46	Win Piggford	Jl Muara Baru Ujung BL S, Jakarta	81394260350	wpiggyford19@addtoany.com	1967-05-26	P
PA47	Raddy Klaengsa	Jl Suryoprabono 2 Kompl Harmoni Plaz.	89925774888	rklaengsa1@live.com	1982-06-13	P
PA48	Tracey Varey	Jl Bekasi Tmr II 30 RT 015/04, Dki J.	81307584054	tvareyb@arizona.edu	1971-10-17	P
PA49	Morie Davisson	Jl Kuningan Brt 56, Dki Jakarta	88928959829	mdavisonic@census.gov	1979-04-17	P

12. [SQL] Tampilkan `nama` dan `jenis_kelamin` perawat yang merawat semua pasien wanita.

```
eduardus.tjitrahardja.siwanap> SELECT p2.nama, p2.jenis_kelamin  
      FROM perawat p2  
            INNER JOIN shift_perawat sp USING (id_perawat)  
            INNER JOIN rawat_inap ri USING (id_rawat_inap)  
            INNER JOIN pasien p USING (id_pasien)  
      WHERE p.jenis_kelamin = 'P'  
      GROUP BY 1, 2  
      HAVING COUNT(DISTINCT id_pasien) = (SELECT COUNT(*) FROM pasien WHERE jenis_kelamin = 'P')
```

13. [Trivia] Apakah kita mungkin mendapatkan data tertentu dari operasi inner join menggunakan keyword `IN`?

Mungkin, kita tinggal query suatu table yang ada `WHERE id IN (SELECT id FROM [table] WHERE [condition])` dimana idnya itu adalah PK-nya

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menghubungi kedua table tersebut. Contohnya seperti di nomor 2 bisa ditulis dengan INNER JOIN semua, seperti:

```
SELECT o.nama
FROM obat o
    INNER JOIN pemberian_obat po USING (id_obat)
    INNER JOIN shift_perawat sp USING (id_shift_perawat)
    INNER JOIN perawat p USING (id_perawat)
WHERE p.jenis_kelamin = 'P';
```

Bisa juga ditulis dengan salah satu dari INNER JOINnya diganti dengan IN, seperti:

```
SELECT o.nama
FROM obat o
    INNER JOIN pemberian_obat po USING (id_obat)
WHERE po.id_shift_perawat IN (SELECT sp.id_shift_perawat
                                FROM shift_perawat sp
                                INNER JOIN perawat p USING (id_perawat)
                                WHERE p.jenis_kelamin = 'P');
```

Latihan 2

1. [SQL] Jalankan SQL Query pada Contoh 27 hingga Contoh 35 di atas dan cantumkan hasilnya pada laporan.

```
eduardus.tjitrabhardja.siwanap> -- 27
CREATE VIEW daftar_dokter AS
SELECT id_dokter, nama
FROM dokter
[2022-11-01 13:51:30] completed in 81 ms
```

```
eduardus.tjitrabhardja.siwanap> SELECT *
                           FROM daftar_dokter
[2022-11-01 13:51:56] 50 rows retrieved starting from 1 in 186 ms (execution: 165 ms, fetching: 27.5 ms)
```

#	id_dokter	nama
1	0001	Lorry Jervois
2	0002	Brantley Ludlem
3	0003	Fanechka Maryman
4	0004	Ronda Hargitt
5	0005	Frederique Pruce
6	0006	Barty Leebeter
7	0007	Ly Spellessy
8	0008	Den Stollsteimer
9	0009	Jenda Chaudret
10	0010	Moreen Heblethwaite
11	0011	Idalia Caughtte
12	0012	Darbie Howle
13	0013	Meade Munn
14	0014	Josephine Schnieder
...

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```
eduardus.tjitrahardja.siwanap> DROP VIEW daftar_dokter
[2022-11-01 13:52:09] completed in 81 ms
```

29.

```
eduardus.tjitrahardja.siwanap> CREATE INDEX index_jenis_kamar ON kamar (jenis)
[2022-11-01 13:52:16] completed in 91 ms
```

30.

```
eduardus.tjitrahardja.siwanap> CREATE INDEX index_nama_pasien
ON pasien USING HASH (nama)
[2022-11-01 13:52:29] completed in 104 ms
```

31.

```
eduardus.tjitrahardja.siwanap> CREATE INDEX index_perawat
ON perawat (id_perawat, nama DESC)
[2022-11-01 13:53:15] completed in 178 ms
```

32.

33.

```
eduardus.tjitrahardja.siwanap> CREATE INDEX index_nama_dokter
ON dokter (nama)
[2022-11-01 13:53:31] completed in 120 ms
```

a.

```
eduardus.tjitrahardja.siwanap> CREATE INDEX index_spesialisasi_dokter
ON dokter (spesialisasi)
[2022-11-01 13:53:53] completed in 145 ms
```

b.

```
eduardus.tjitrahardja.siwanap> DROP INDEX index_nama_dokter
[2022-11-01 13:54:20] completed in 36 ms
```

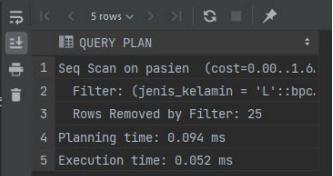
34.

```
eduardus.tjitrahardja.siwanap> EXPLAIN ANALYZE
SELECT *
FROM PASIEN
WHERE jenis_kelamin = 'L'
[2022-11-01 13:54:43] 5 rows retrieved starting from 1 in 53 ms (execution: 40 ms, fetching: 13 ms)
```

35.

2. View

- [Trivia] Apa yang akan terjadi jika kita membuat View menggunakan nama yang sama dengan nama tabel yang ada pada database? Jelaskan!
Tidak bisa, console akan mengeluarkan error “ERROR: relation “dokter” already exists” seperti ini:



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```
eduardus.tjitrahardja.siwanap> -- 1
CREATE VIEW dokter AS
SELECT *
FROM dokter
[2022-11-01 13:57:26] [42P07] ERROR: relation "dokter" already exists
```

karena **VIEW** berguna sebagai **table sementara**, sehingga jika kita menamakannya sama dengan salah satu **table** yang sudah ada akan bertabrakan namanya.

2. [Trivia] Apa fungsi TEMP atau TEMPORARY di View?

TEMP atau **TEMPORARY** di View berguna untuk memberitahu SQL server bahwa View ini adalah *temporary*/sementara. Dimana setelah sesi sekarang berakhir, view *temporary* tersebut akan didrop.

3. [SQL] Buatlah View yang menyimpan **nama** beserta **durasi bekerja** yang dilakukan oleh perawat.

	nama	durasi_kerja
1	Ula Lardeux	36
2	Kelcy Fraschini	36
3	Federica Blanden	36
4	Thorndike Quiddinton	12
5	Andrei Sandland	36
6	Jandy Bassingham	24
7	Noreen Agostini	60
8	Jarrett Bompass	36
9	Sanderson Worg	36
10	Ella Arndell	48
11	Ossie Merriday	24
12	Teodor Schlag	12
13	Mair Riddich	36

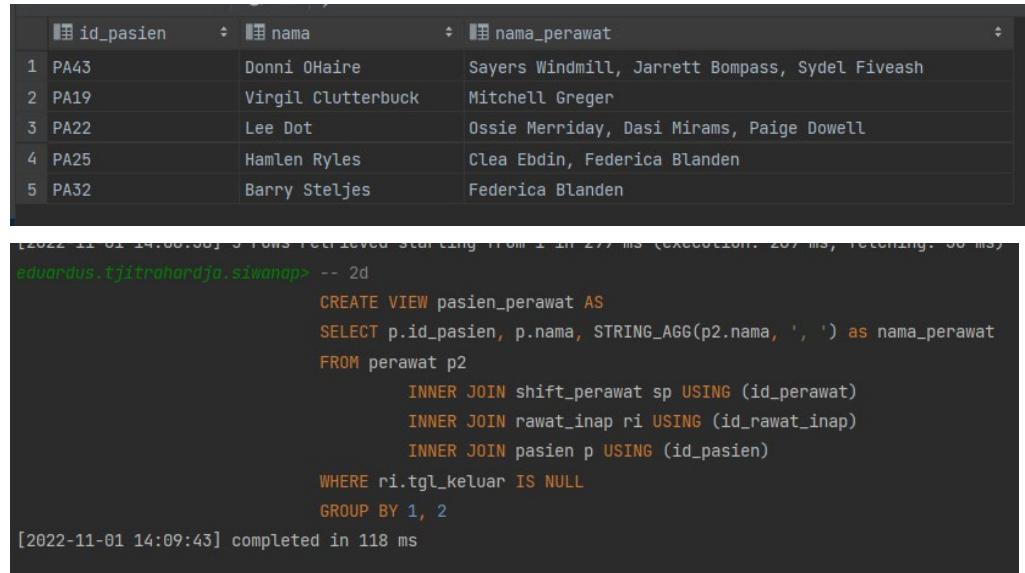
```
eduardus.tjitrahardja.siwanap> -- 2c
-- ASUMSI: durasi bekerja yang dilakukan oleh perawat itu maksudnya
-- total jam kerja yang sudah dilakukan perawat
CREATE VIEW perawat_durasikerja AS
SELECT p.nama, SUM(EXTRACT(HOURS FROM sp.waktu_akhir - sp.waktu_mulai)) AS durasi_kerja
FROM perawat p
INNER JOIN shift_perawat sp USING (id_perawat)
GROUP BY 1
[2022-11-01 14:05:25] completed in 76 ms
```

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4. [SQL] Buatlah View yang menyimpan **nama-nama perawat** yang merawat pasien dikelompokkan berdasarkan id pasien dan **nama pasien** yang belum keluar dari rumah sakit (HINT: string_agg)



The screenshot shows a PostgreSQL terminal window. At the top, there is a table with columns: id_pasien, nama, and nama_perawat. The data in the table is as follows:

	id_pasien	nama	nama_perawat
1	PA43	Donni OHaire	Sayers Windmill, Jarrett Bompass, Sydel Fiveash
2	PA19	Virgil Clutterbuck	Mitchell Greger
3	PA22	Lee Dot	Ossie Merriday, Dasi Mirams, Paige Dowell
4	PA25	Hamlen Ryles	Clea Ebdin, Federica Blanden
5	PA32	Barry Steljes	Federica Blanden

Below the table, the terminal shows the SQL command to create the view:

```
[2022-11-01 14:00:38] 5 rows retrieved starting from 1 in 277 ms (execution: 287 ms, fetching: 50 ms)
eduardus.tjitrahardja.sivanap> -- 2d
CREATE VIEW pasien_perawat AS
SELECT p.id_pasien, p.nama, STRING_AGG(p2.nama, ', ') as nama_perawat
FROM perawat p2
INNER JOIN shift_perawat sp USING (id_perawat)
INNER JOIN rawat_inap ri USING (id_rawat_inap)
INNER JOIN pasien p USING (id_pasien)
WHERE ri.tgl_keluar IS NULL
GROUP BY 1, 2
[2022-11-01 14:09:43] completed in 118 ms
```

3. Indexing and Analyze

Diberikan query berikut.

```
SELECT * FROM kamar ORDER BY harga DESC;
```

```
SELECT * FROM rawat_inap WHERE tgl_keluar IS NULL;
```

```
SELECT * FROM perawat WHERE nama LIKE 'T%';
```

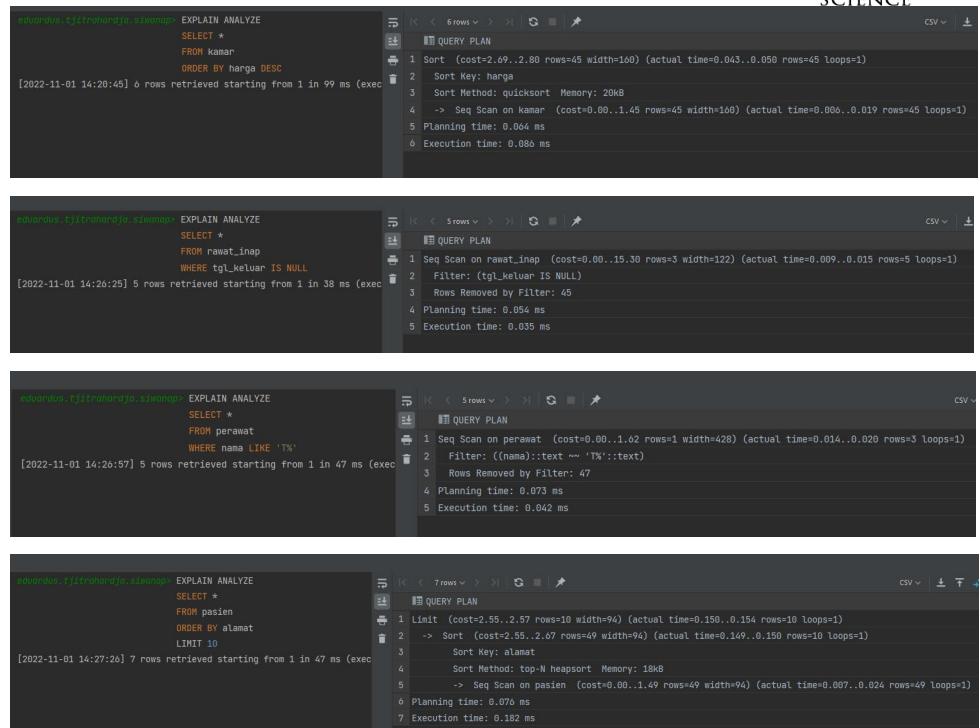
```
SELECT * FROM pasien ORDER BY alamat LIMIT 10;
```

- a. [SQL] Jalankan perintah EXPLAIN ANALYZE untuk setiap *query* di atas. *Screenshot* eksekusinya dan tulis hasilnya pada tabel di bawah, sertakan dalam laporan submisi Anda.

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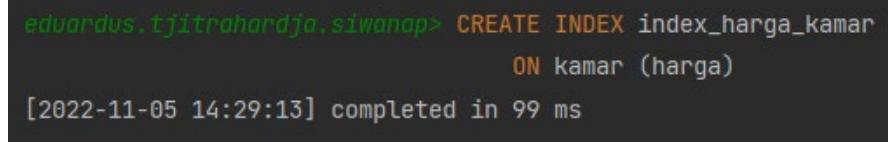


The figure consists of four vertically stacked screenshots of the pgAdmin interface. Each screenshot shows a query in the left pane and its corresponding EXPLAIN ANALYZE query plan in the right pane. The queries are:

- Query 1: SELECT * FROM kamar ORDER BY harga DESC. The EXPLAIN ANALYZE output shows a Sort operation with cost=2.09, rows=45, and loops=1.
- Query 2: SELECT * FROM rawat_inap WHERE tgl_keluar IS NULL. The EXPLAIN ANALYZE output shows a Seq Scan on rawat_inap followed by a Filter operation where tgl_keluar IS NULL, resulting in 5 rows.
- Query 3: SELECT * FROM perawat WHERE nama LIKE 'T%' . The EXPLAIN ANALYZE output shows a Seq Scan on perawat followed by a Filter operation where ((nama)::text ~~ 'T%::text'), resulting in 5 rows.
- Query 4: SELECT * FROM pasien ORDER BY alamat LIMIT 10. The EXPLAIN ANALYZE output shows a Limit operation with cost=2.55, rows=10, and loops=1. It includes a Sort operation with cost=2.05, rows=49, and loops=1, followed by a Seq Scan on pasien.

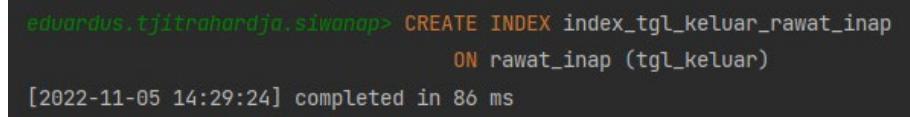
b. [SQL] Buat *index* berikut (*method* nya terserah Anda):

- index_nama_pasien pada tabel **PASIEN** kolom **nama**.



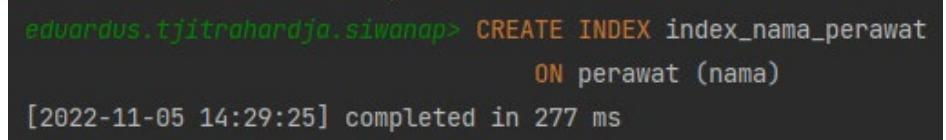
```
edwardus.tjitrahardja.siwanap> CREATE INDEX index_harga_kamar
ON kamar (harga)
[2022-11-05 14:29:13] completed in 99 ms
```

- index_nama_obat pada tabel **OBAT** kolom **nama**.



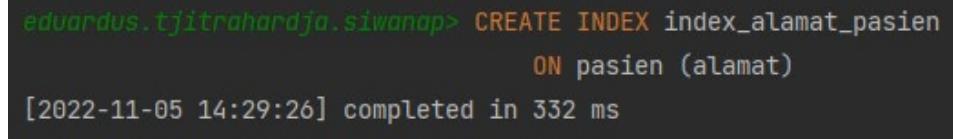
```
edwardus.tjitrahardja.siwanap> CREATE INDEX index_tgl_keluar_rawat_inap
ON rawat_inap (tgl_keluar)
[2022-11-05 14:29:24] completed in 86 ms
```

- index_nama_dokter pada tabel **DOKTER** kolom **nama**.



```
edwardus.tjitrahardja.siwanap> CREATE INDEX index_nama_perawat
ON perawat (nama)
[2022-11-05 14:29:25] completed in 277 ms
```

- index_nama_perawat pada tabel **PERAWAT** kolom **nama**.



```
edwardus.tjitrahardja.siwanap> CREATE INDEX index_alamat_pasien
ON pasien (alamat)
[2022-11-05 14:29:26] completed in 332 ms
```

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Tampilkan *query* dan *index* untuk setiap tabel di dalam laporan submisi Anda.

- c. [SQL] Jalankan kembali setiap *query* SELECT di atas dari pertanyaan nomor 3 menggunakan perintah EXPLAIN ANALYZE. Screenshot eksekusinya dan tulis hasilnya pada tabel di bawah, sertakan dalam laporan submisi Anda.

```
eduardus.tjitrahardja=> \d KAMAR
Table "siwanap.kamar"
 Column | Type | Collation | Nullable | Default
-----+-----+-----+-----+-----+
 id_kamar | character varying(10) | | not null |
 nama | character varying(30) | | not null |
 jenis | character varying(10) | | not null |
 kapasitas | smallint | | not null |
 harga | integer | | not null |
Indexes:
 "kamar_pkey" PRIMARY KEY, btree (id_kamar)
Referenced by:
 TABLE "rawat_inap" CONSTRAINT "rawat_inap_id_kamar_fkey" FOREIGN KEY (id_kamar) REFERENCES kamar(id_kamar) ON DELETE CASCADE
```

```
[2022-11-05 14:29:26] completed in 332 ms
eduardus.tjitrahardja> EXPLAIN ANALYZE
SELECT *
FROM kamar
ORDER BY harga DESC
[2022-11-05 14:30:25] 6 rows retrieved starting from 1 in 60 ms (execution: 34 ms,
```

Step	Operations	Cost	Time
1	Sort	2.69..2.80	0.078..0.087
2	Sort Key: harga		
3	Sort Method: quicksort	Memory: 20KB	
4	> Seq Scan on kamar	(cost=0.00..1.45)	0.006..0.010
5	Planning time:	0.397 ms	
6	Execution time:	0.121 ms	

```
eduardus.tjitrahardja=> \d RAWAT_INAP
Table "siwanap.rawat_inap"
 Column | Type | Collation | Nullable | Default
-----+-----+-----+-----+-----+
 id_rawat_inap | character varying(10) | | not null |
 id_kamar | character varying(10) | | not null |
 id_pasien | character varying(10) | | not null |
 tgl_masuk | date | | not null |
 tgl_keluar | date | | not null |
Indexes:
 "rawat_inap_pkey" PRIMARY KEY, btree (id_rawat_inap)
Foreign-key constraints:
 "rawat_inap_id_kamar_fkey" FOREIGN KEY (id_kamar) REFERENCES kamar(id_kamar) ON DELETE CASCADE
 "rawat_inap_id_pasien_fkey" FOREIGN KEY (id_pasien) REFERENCES pasien(id_pasien) ON DELETE CASCADE
Referenced by:
 TABLE "dokter_rawat_inap" CONSTRAINT "dokter_rawat_inap_id_rawat_inap_fkey" FOREIGN KEY (id_rawat_inap) REFERENCES rawat_inap(id_rawat_inap) ON DELETE CASCADE
 TABLE "shift_perawat" CONSTRAINT "shift_perawat_id_rawat_inap_fkey" FOREIGN KEY (id_rawat_inap) REFERENCES rawat_inap(id_rawat_inap) ON DELETE CASCADE
```

```
eduardus.tjitrahardja> EXPLAIN ANALYZE
SELECT *
FROM rawat_inap
WHERE tgl_keluar IS NULL
[2022-11-05 14:31:37] 5 rows retrieved starting from 1 in 33 ms (execution: 23 ms,
```

Step	Operations	Cost	Time
1	Seq Scan on rawat_inap	(cost=0.00..1.50)	0.008..0.014
2	Filter: (tgl_keluar IS NULL)		
3	Rows Removed by Filter:	45	
4	Planning time:	0.408 ms	
5	Execution time:	0.036 ms	

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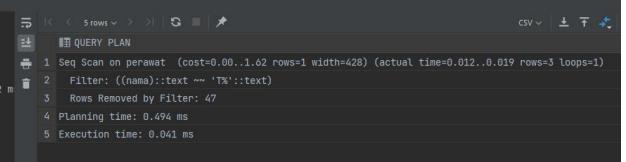
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```
eduardus.tjitrahardja=> \d PERAWAT
                                Table "siwanap.perawat"
      Column   |      Type       | Collation | Nullable | Default
-----+-----+-----+-----+-----+
id_perawat | character varying(18) |           | not null |
nama        | character varying(100) |           | not null |
no_telp     | character varying(14)  |           | not null |
email       | character varying(50)  |           | not null |
jenis_kelamin | character(1)    |           | not null |
Indexes:
"perawat_pkey" PRIMARY KEY, btree (id_perawat)
Referenced by:
    TABLE "shift_perawat" CONSTRAINT "shift_perawat_id_perawat_fkey" FOREIGN KEY (id_perawat) REFERENCES perawat(id_perawat) ON DELETE CASCADE
```

```
eduardus.tjitrahardja=> EXPLAIN ANALYZE
SELECT *
FROM perawat
WHERE nama LIKE 'T%'

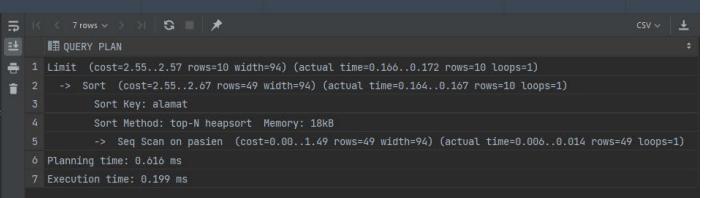
[2022-11-05 14:32:01] 5 rows retrieved starting from 1 in 289 ms (execution: 272 ms)
```



```
eduardus.tjitrahardja=> \d PASIEN
                                Table "siwanap.pasien"
      Column   |      Type       | Collation | Nullable | Default
-----+-----+-----+-----+-----+
id_pasien  | character varying(18) |           | not null |
nama        | character varying(100) |           | not null |
alamat     | text            |           | not null |
no_telp     | character varying(14)  |           | not null |
email       | character varying(50)  |           | not null |
tgl_lahir   | date            |           | not null |
jenis_kelamin | character(1)    |           | not null |
Indexes:
"pasien_pkey" PRIMARY KEY, btree (id_pasien)
"index_nama_pasien" btree (nama)
Referenced by:
    TABLE "rawat_inap" CONSTRAINT "rawat_inap_id_pasien_fkey" FOREIGN KEY (id_pasien) REFERENCES pasien(id_pasien) ON DELETE CASCADE
```

```
eduardus.tjitrahardja=> EXPLAIN ANALYZE
SELECT *
FROM pasien
ORDER BY alamat
LIMIT 10

[2022-11-05 14:32:14] 7 rows retrieved starting from 1 in 291 ms
```



Laporan Tutorial Lab 2

Basis Data

Semester Ganjil 2022/2023

- d. [Trivia] Bandingkan *planning time* dan *execution time* (menggunakan tabel di bawah) dari *query* saat tanpa index dan setelah menggunakan *index*. Mana yang lebih baik? Berikan penjelasan!

Query	Planning Time		Execution Time	
	TANPA INDEX	DENGAN INDEX	TANPA INDEX	DENGAN INDEX
1	0.064ms	0.397ms	0.086ms	0.121ms
2	0.054ms	0.408ms	0.035ms	0.036ms
3	0.073ms	0.494ms	0.042ms	0.041ms
4	0.076ms	0.616ms	0.182ms	0.199ms

Seharusnya, dengan index akan lebih cepat execution timenya. Namun, di saya relatif sama untuk planning dan execution timenya. Lalu untuk *planning time*-nya lebih lama mungkin karena SQL melakukan beberapa modifikasi pada table yang kita index jadi menambah waktu itu *planning time*.