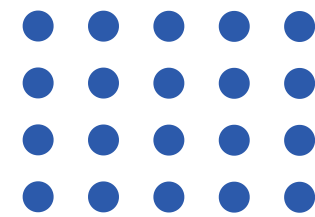




# DATABASE TECHNOLOGY

# FINAL PROJECT



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GROUP 1 - LB09



# Team Member



2702249663  
**Hans** Ardianta



2702257450  
Gervasius **Russell**



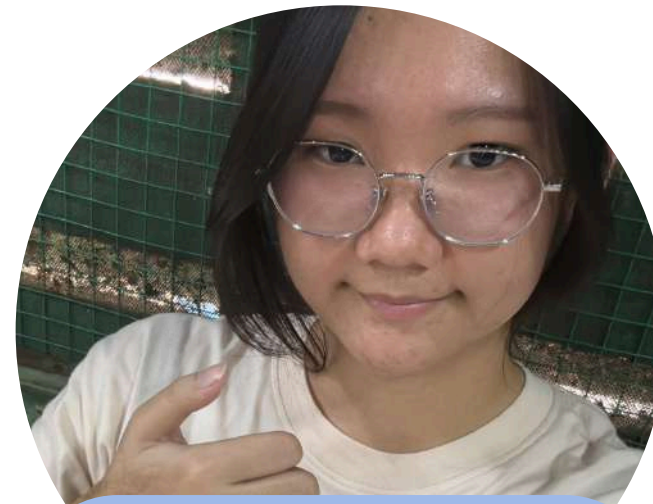
2702251794  
**Jonathan** William G.



2702247216  
**Adrian** Marc Fedier P.



2702302183  
**Gabriella** Clairine



2702291356  
**Shyra** Alexandria



01)

# Introduction

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# About the Dataset

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- Sumber: **kaggle**
- Link dataset:  
<https://www.kaggle.com/datasets/prasad22/healthcare-dataset>
- Ukuran awal dataset: 55500 baris, 15 atribut
- Problem terkait dataset: Tidak ada unique identifier dan kurang variasi relasi antar kolom
- Modifikasi --> 100 baris, 25 atribut



# Modifikasi

Sebelum Modifikasi	Setelah Modifikasi
<ul style="list-style-type: none"><li>• <b>Pasien:</b> Name, Age, Gender, Blood Type</li><li>• <b>Kunjungan Rumah Sakit:</b> Date of Admission, Discharge Date, Room Number, Medical Condition, Admission Type</li><li>• <b>Dokter:</b> Doctor</li><li>• <b>Rumah Sakit:</b> Hospital</li><li>• <b>Pembayaran:</b> Insurance Provider, Billing Amount</li><li>• <b>Pengobatan:</b> Medication, Test Results.</li></ul>	<ul style="list-style-type: none"><li>• <b>Pasien:</b> <b>Patient_ID (PK)</b>, Patient_Name, Patient_DOB, Patient_Gender, Patient_BloodType</li><li>• <b>Kunjungan Rumah Sakit:</b> <b>Admission_ID (PK)</b>, Hospital_ID, Doctor_ID, Patient_ID, Visit_Date, Discharge_Date, Room_Number</li><li>• <b>Rumah Sakit:</b> <b>Hospital_ID (PK)</b>, Hospital_Name, Hospital_Address, City_Code</li><li>• <b>Kota:</b> <b>City_Code (PK)</b>, City_Name</li><li>• <b>Dokter:</b> <b>Doctor_ID (PK)</b>, Doctor_Name, Doctor_Specialty</li><li>• <b>Admisi:</b> <b>Admission_ID (PK)</b>, Admission_Type, Admission_MedicalCondition</li><li>• <b>Pengobatan:</b> <b>Medical_ID (PK)</b>, Medication, Test_Results</li><li>• <b>Pembayaran:</b> <b>Transaction_ID (PK)</b>, Billing_Amount, Insurance_Provider</li></ul>

# Tujuan



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Mengelola data kesehatan secara terstruktur

Mempermudah analisis dan penelitian  
terkait layanan kesehatan

Meningkatkan efisiensi administrasi rumah sakit

Mendukung pelacakan pasien,  
pengobatan, dan transaksi



02)

# Normalization

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# UNF

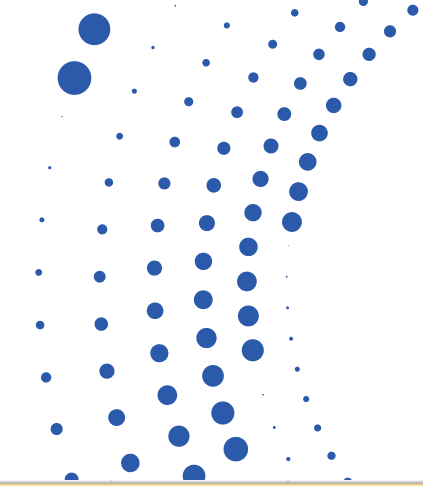
Unnormalized form of the data

City_Name	City_Code	Hospital_ID	Hospital_Name	Hospital_Address	Doctor_Name	Doctor_ID	Doctor_Specialty	Patient_ID	Patient_Name	Patient_DOB	Patient_Gender	
Jakarta	JKT	HC001	Bethsaida	Jl. Kebon Jeruk	Emily Taylor	DR040	Endocrinologist	PT054	Peggy Lee	2008-04-19	Female	
						Heather Smith		DR048	PT044	Katherine Smith	1970-10-19	Female
					Kristin Martinez			DR045	Oncologist	PT040	Pamela Fernandez	1958-06-30
						PT048				Chris Frye	1957-09-30	Male
						PT053	Jesse Banks			1998-06-13	Female	
						PT052	Stephanie Kent			2019-12-11	Female	
					Matthew Thomas	DR043	Pulmonologist	PT045	Paul Williams	1976-06-03	Female	
								PT046	Lynn Martinez	1987-07-06	Male	
								PT043	Eric Lane	2018-04-24	Female	
								PT055	Tamara Hernandez	1980-05-13	Female	
					William Reynolds	DR041	Internist	PT050	Brandon Collins	1972-03-31	Female	
								PT051	Michael Liu	2018-01-25	Male	
								PT049	Kyle Bennett	1972-11-04	Male	
								PT056	David Pierce	1979-12-14	Female	
								PT041	Christopher Lee	1970-03-07	Female	
								PT042	Thomas Morse	1986-09-30	Male	
		PT047	Christopher Chapman	1974-07-31				Female				
		Cindy Ellis	DR062	Pulmonologist				PT062	Kim Scott	1971-06-11	Male	
		Ian Benitez	DR070	Rheumatologist				PT070	Erica Myers	1960-05-18	Female	
		Jacob Daniel	DR058	Internist				PT058	Michael Mills	1977-11-04	Male	
					PT068	John Hartman	2000-01-18	Male				
					PT060	Jacqueline Jordan	1959-11-05	Male				
					PT064	Larry Rodgers	1994-04-15	Female				
					PT065	Nancy Glover	1980-04-23	Male				
		Jonathan Drake	DR067	Endocrinologist	PT067	Christopher Gonzalez	1994-01-19	Male				
					PT069	Michael Miller	1956-11-26	Male				
		Penny Pruitt	DR057	Oncologist	PT066	Jessica King	1957-10-24	Male				
					PT059	Kyle Wiley	1962-09-20	Female				
					PT063	Travis Carter	1966-04-01	Male				
					PT057	Bethany Moore	1978-12-06	Female				
		Tyler Braun	DR061	Endocrinologist	PT061	Ashley Gutierrez	1957-12-20	Male				
					Angela Contreras	DR026	PT026	Peter Fitzgerald	2010-02-17	Male		
					James Ellis	DR028	PT028	Kenneth Moore	1982-12-27	Female		
							PT029	Mary Hunter	2005-06-11	Female		

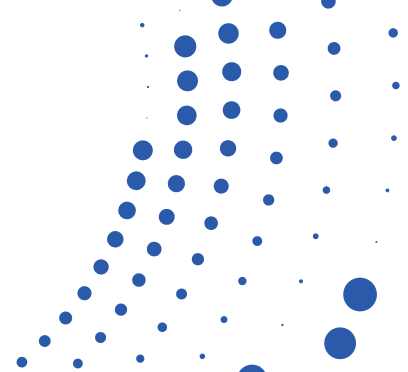


# 1NF

Remove redundancies



City_Code	City_Name	Hospital_ID	Hospital_Name	Hospital_Address	Doctor_Specialty	Doctor_Name	Doctor_ID	Patient_ID	Patient_Name	Patient_DOB	Patient_Gender	Patient_BloodType	Admission_id	Visit_Date	Discharge
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Endocrinologist	Emily Taylor	DR040	PT054	Peggy Lee	2008-04-19	Female	A-	AD054	2022-04-08	2022-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Endocrinologist	Emily Taylor	DR040	PT044	Katherine Smith	1970-10-19	Female	AB+	AD044	2021-06-09	2021-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Endocrinologist	Emily Taylor	DR040	PT040	Pamela Fernandez	1958-06-30	Female	B-	AD040	2021-01-17	2021-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Endocrinologist	Heather Smith	DR048	PT048	Chris Frye	1957-09-30	Male	A-	AD048	2020-05-04	2020-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Oncologist	Kristin Martinez	DR045	PT053	Jesse Banks	1998-06-13	Female	AB+	AD053	2022-10-29	2022-1
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Oncologist	Kristin Martinez	DR045	PT052	Stephanie Kent	2019-12-11	Female	A-	AD052	2019-06-15	2019-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Oncologist	Kristin Martinez	DR045	PT045	Paul Williams	1976-06-03	Female	AB-	AD045	2020-08-23	2020-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Oncologist	Kristin Martinez	DR045	PT046	Lynn Martinez	1987-07-06	Male	O+	AD046	2022-10-12	2022-1
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Pulmonologist	Matthew Thomas	DR043	PT043	Eric Lane	2018-04-24	Female	A-	AD043	2022-06-24	2022-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Pulmonologist	Matthew Thomas	DR043	PT055	Tamara Hernandez	1980-05-13	Female	B-	AD055	2023-08-17	2023-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Pulmonologist	Matthew Thomas	DR043	PT050	Brandon Collins	1972-03-31	Female	O+	AD050	2019-07-19	2019-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Internist	William Reynolds	DR041	PT051	Michael Liu	2018-01-25	Male	AB-	AD051	2024-04-05	2024-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Internist	William Reynolds	DR041	PT049	Kyle Bennett	1972-11-04	Male	O+	AD049	2023-09-09	2023-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Internist	William Reynolds	DR041	PT056	David Pierce	1979-12-14	Female	A-	AD056	2023-11-05	2023-1
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Internist	William Reynolds	DR041	PT041	Christopher Lee	1970-03-07	Female	B-	AD041	2021-09-15	2021-1
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Internist	William Reynolds	DR041	PT042	Thomas Morse	1986-09-30	Male	A+	AD042	2020-01-27	2020-0
JKT	Jakarta	HC001	Bethsaida	Jl. Kebon Jeruk	Internist	William Reynolds	DR041	PT047	Christopher Chapman	1974-07-31	Female	O+	AD047	2021-12-01	2021-1
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Pulmonologist	Cindy Ellis	DR062	PT062	Kim Scott	1971-06-11	Male	A-	AD062	2024-04-07	2024-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Rheumatologist	Ian Benitez	DR070	PT070	Erica Myers	1960-05-18	Female	A+	AD070	2020-01-30	2020-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Internist	Jacob Daniel	DR058	PT058	Michael Mills	1977-11-04	Male	O-	AD058	2022-09-21	2022-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Internist	Jacob Daniel	DR058	PT068	John Hartman	2000-01-18	Male	B-	AD068	2023-01-07	2023-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Internist	Jacob Daniel	DR058	PT060	Jacqueline Jordan	1959-11-05	Male	O+	AD060	2020-07-10	2020-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Internist	Jacob Daniel	DR058	PT064	Larry Rodgers	1994-04-15	Female	B-	AD064	2022-08-03	2022-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Internist	Jacob Daniel	DR058	PT065	Nancy Glover	1980-04-23	Male	A-	AD065	2020-05-08	2020-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Endocrinologist	Jonathan Drake	DR067	PT067	Christopher Gonzalez	1994-01-19	Male	B+	AD067	2019-11-21	2019-1
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Endocrinologist	Jonathan Drake	DR067	PT069	Michael Miller	1956-11-26	Male	B+	AD069	2024-02-06	2024-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Oncologist	Penny Pruitt	DR057	PT066	Jessica King	1957-10-24	Male	AB-	AD066	2019-12-09	2019-1
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Oncologist	Penny Pruitt	DR057	PT059	Kyle Wiley	1962-09-20	Female	AB-	AD059	2021-01-21	2021-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Oncologist	Penny Pruitt	DR057	PT063	Travis Carter	1966-04-01	Male	A+	AD063	2022-07-06	2022-0
JKT	Jakarta	HC002	Eka Hospital	Jl. Soedirman	Oncologist	Penny Pruitt	DR057	PT057	Bethany Moore	1978-12-06	Female	A+	AD057	2023-04-09	2023-0



# 2NF

Remove partial dependencies

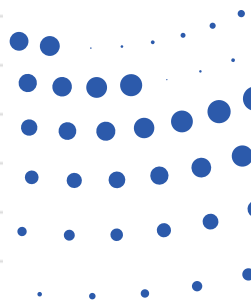
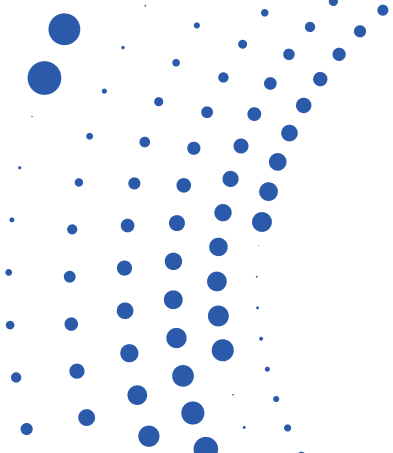
KUNJUNGAN RUMAH SAKIT						
Admission_id (PK)	Hospital_ID (FK)	Doctor_ID (FK)	Patient_ID (FK)	Visit_Date	Discharge_Date	Room_Number
AD054	HC001	DR040	PT054	2022-04-08	2022-04-13	180
AD044	HC001	DR040	PT044	2021-06-09	2021-07-01	410
AD040	HC001	DR040	PT040	2021-01-17	2021-01-29	272
AD048	HC001	DR048	PT048	2020-05-04	2020-05-13	413
AD053	HC001	DR045	PT053	2022-10-29	2022-11-20	492
AD052	HC001	DR045	PT052	2019-06-15	2019-07-05	234
AD045	HC001	DR045	PT045	2020-08-23	2020-09-08	328
AD046	HC001	DR045	PT046	2022-10-12	2022-11-02	300
AD043	HC001	DR043	PT043	2022-06-24	2022-07-18	418
AD055	HC001	DR043	PT055	2023-08-17	2023-09-11	250
AD050	HC001	DR043	PT050	2019-07-19	2019-07-29	138
AD051	HC001	DR041	PT051	2024-04-05	2024-04-22	456
AD049	HC001	DR041	PT049	2023-09-09	2023-09-23	157

PASIE				
Patient_ID (PK)	Patient_Name	Patient_DOB	Patient_Gender	Patient_BloodType
PT001	Bobby Jackson	2008-04-19	Male	B-
PT002	Leslie Terry	1970-10-19	Male	A+
PT003	Danny Smith	1958-06-30	Female	A-
PT004	Andrew Watts	1957-09-30	Female	O+
PT005	Adrienne Bell	1998-06-13	Female	AB+
PT006	Emily Johnson	2019-12-11	Male	A+
PT007	Edward Edwards	1976-06-03	Female	AB-
PT008	Christina Martinez	1987-07-06	Female	A+
PT009	Jasmine Aguilar	2018-04-24	Male	AB+
PT010	Christopher Berg	1980-05-13	Female	AB-
PT011	Michelle Daniels	1972-03-31	Male	O+
PT012	Aaron Martinez	2018-01-25	Female	A-
PT013	Connor Hansen	1972-11-04	Female	A+
PT014	Robert Bauer	1979-12-14	Female	AB+

RUMAH SAKIT				
Hospital_ID (PK)	Hospital_Name	Hospital_Address	City_Code	City_Name
HC001	Bethsaida	Jl. Kebon Jeruk	JKT	Jakarta
HC002	Eka Hospital	Jl. Soedirman	JKT	Jakarta
HC003	Mitra Keluarga	Jl. Pungkur	BDG	Bandung
HC004	Royal Taruma	Jl. Teuku Umar	BDG	Bandung
HC005	RS PIK	Jl. M.T. Haryono	TGR	Tangerang
HC006	RSCM	Jl. Gulingan	TGR	Tangerang
HC007	Siloam	Jl. Soekarni	TGR	Tangerang
HC008	St. Carolus Hospital	Pusat Kesehatan D...	TGR	Tangerang

# 2NF

Remove partial dependencies



ADMISI								
Admission_id (PK)	Admission_Type	Admission_MedicalCondition	Medical_id (FK)	Medication	Test_Results	Transaction_id (FK)	(\$) Billing_Amount	Insurance_Provider
AD054	Elective	Obesity	MD04054	Lipitor	Abnormal	TR054	6,767.63	AXA Mandiri
AD044	Urgent	Obesity	MD00044	Paracetamol	Normal	TR044	21,784.45	BCALife
AD040	Urgent	Obesity	MD03040	Penicillin	Abnormal	TR040	32,973.94	BPJS
AD048	Urgent	Diabetes	MD02048	Aspirin	Normal	TR048	36,992.27	Sequis
AD053	Urgent	Cancer	MD03053	Penicillin	Inconclusive	TR053	21,879.53	Asuransi Sinarmas
AD052	Emergency	Cancer	MD01052	Ibuprofen	Abnormal	TR052	14,681.02	BPJS
AD045	Urgent	Cancer	MD03045	Penicillin	Abnormal	TR045	42,684.56	Prudential
AD046	Emergency	Cancer	MD03046	Penicillin	Normal	TR046	45,585.89	Sequis
AD043	Elective	Asthma	MD00043	Paracetamol	Normal	TR043	25,966.33	Allianz
AD055	Elective	Asthma	MD01055	Ibuprofen	Inconclusive	TR055	19,973.46	BPJS
AD050	Urgent	Asthma	MD01050	Ibuprofen	Abnormal	TR050	16,320.23	Sequis
AD051	Emergency	Hypertension	MD00051	Paracetamol	Inconclusive	TR051	30,590.54	Allianz
AD049	Urgent	Hypertension	MD01049	Ibuprofen	Abnormal	TR049	28,051.50	BPJS
AD056	Emergency	Hypertension	MD00056	Paracetamol	Inconclusive	TR056	14,362.31	Manulife

DOKTER		
Doctor_ID (PK)	Doctor_Name	Doctor_Specialty
DR001	Edi	Oncologist
DR002	Samantha Davies	Endocrinologist
DR004	Kevin Wells	Endocrinologist
DR006	Taylor Newton	Pulmonologist
DR009	Daniel Ferguson	Pulmonologist
DR010	Heather Day	Oncologist
DR012	Douglas Mayo	Internist
DR013	Kenneth Fletcher	Endocrinologist
DR015	Roberta Stewart	Oncologist
DR016	Maria Dougherty	Endocrinologist
DR017	Erica Spencer	Rheumatologist
DR019	Justin Moore Jr.	Internist
DR020	Denise Galloway	Pulmonologist
DR026	Angela Contreras	Endocrinologist



# 3NF

Remove transitive dependencies

KUNJUNGAN RUMAH SAKIT						
Admission_id (PK)	Hospital_ID (FK)	Doctor_ID (FK)	Patient_ID (FK)	Visit_Date	Discharge_Date	Room_Number
AD054	HC001	DR040	PT054	2022-04-08	2022-04-13	180
AD044	HC001	DR040	PT044	2021-06-09	2021-07-01	410
AD040	HC001	DR040	PT040	2021-01-17	2021-01-29	272
AD048	HC001	DR048	PT048	2020-05-04	2020-05-13	413
AD053	HC001	DR045	PT053	2022-10-29	2022-11-20	492
AD052	HC001	DR045	PT052	2019-06-15	2019-07-05	234
AD045	HC001	DR045	PT045	2020-08-23	2020-09-08	328
AD046	HC001	DR045	PT046	2022-10-12	2022-11-02	300
AD043	HC001	DR043	PT043	2022-06-24	2022-07-18	418
AD055	HC001	DR043	PT055	2023-08-17	2023-09-11	250
AD050	HC001	DR043	PT050	2019-07-19	2019-07-29	138
AD051	HC001	DR041	PT051	2024-04-05	2024-04-22	456
AD049	HC001	DR041	PT049	2023-09-09	2023-09-23	157
AD056	HC001	DR041	PT056	2023-11-05	2023-11-07	296
AD041	HC001	DR041	PT041	2021-09-15	2021-10-05	478
AD042	HC001	DR041	PT042	2020-01-27	2020-02-09	196
AD047	HC001	DR041	PT047	2021-12-01	2021-12-09	211
AD062	HC002	DR062	PT062	2024-04-07	2024-05-04	244
AD070	HC002	DR070	PT070	2020-01-30	2020-02-12	241
AD058	HC002	DR058	PT058	2022-09-21	2022-09-25	405
AD068	HC002	DR058	PT068	2023-01-07	2023-01-27	263

PASIEEN				
Patient_ID (PK)	Patient_Name	Patient_DOB	Patient_Gender	Patient_BloodType
PT001	Bobby Jackson	2008-04-19	Male	B-
PT002	Leslie Terry	1970-10-19	Male	A+
PT003	Danny Smith	1958-06-30	Female	A-
PT004	Andrew Watts	1957-09-30	Female	O+
PT005	Adrienne Bell	1998-06-13	Female	AB+
PT006	Emily Johnson	2019-12-11	Male	A+
PT007	Edward Edwards	1976-06-03	Female	AB-
PT008	Christina Martinez	1987-07-06	Female	A+
PT009	Jasmine Aguilar	2018-04-24	Male	AB+
PT010	Christopher Berg	1980-05-13	Female	AB-
PT011	Michelle Daniels	1972-03-31	Male	O+
PT012	Aaron Martinez	2018-01-25	Female	A-
PT013	Connor Hansen	1972-11-04	Female	A+
PT014	Robert Bauer	1979-12-14	Female	AB+
PT015	Brooke Brady	1970-03-07	Female	AB+

DOKTER		
Doctor_ID (PK)	Doctor_Name	Doctor_Specialty
DR040	Emily Taylor	Endocrinologist
DR048	Heather Smith	Endocrinologist
DR045	Kristin Martinez	Oncologist
DR043	Matthew Thomas	Pulmonologist
DR041	William Reynolds	Internist
DR062	Cindy Ellis	Pulmonologist
DR070	Ian Benitez	Rheumatologist
DR058	Jacob Daniel	Internist
DR067	Jonathan Drake	Endocrinologist
DR057	Penny Pruitt	Oncologist
DR061	Tyler Braun	Endocrinologist
DR026	Angela Contreras	Endocrinologist
DR028	James Ellis	Endocrinologist
DR029	Jared Bruce Jr.	Internist
DR032	Kristina Frazier	Rheumatologist
DR027	Wendy Glenn	Pulmonologist
DR020	Denise Galloway	Pulmonologist
DR017	Erica Spencer	Rheumatologist

# 3NF

Remove transitive dependencies

RUMAH SAKIT				
Hospital_ID (PK)	Hospital_Name	Hospital_Address	City_Code (FK)	City_Name
HC001	Bethsaida	Jl. Kebon Jeruk	JKT	Jakarta
HC002	Eka Hospital	Jl. Soedirman	JKT	Jakarta
HC003	Mitra Keluarga	Jl. Pungkur	BDG	Bandung
HC004	Royal Taruma	Jl. Teuku Umar	BDG	Bandung
HC005	RS PIK	Jl. M.T. Haryono	TGR	Tangerang
HC006	RSCM	Jl. Gulingan	TGR	Tangerang
HC007	Siloam	Jl. Soekarni	TGR	Tangerang
HC008	St. Carolus Hospital	Jl. Bumi Serpong Damai	TGR	Tangerang
HC009	St. John Hospital	Jl. Turuni	BKS	Bekasi
HC010	YARSI Hospital	Jl. Cut Nyak Dlen	BKS	Bekasi

KOTA	
City_Code (PK)	City_Name
JKT	Jakarta
BDG	Bandung
TGR	Tangerang
BKS	Bekasi

ADMISI		
Admission_id (PK)	Admission_Type	Admission_MedicalCondition
AD054	Elective	Obesity
AD044	Urgent	Obesity
AD040	Urgent	Obesity
AD048	Urgent	Diabetes

PROSES PENGOBATAN	
Admission_id (FK)	Medical_id (FK)
AD054	MD04054
AD044	MD00044
AD040	MD03040
AD048	MD02048
AD053	MD03053

PROSES PEMBAYARAN	
Admission_id (FK)	Transaction_id (FK)
AD054	TR054
AD044	TR044
AD040	TR040
AD048	TR048
AD053	TR053
AD052	TR052
AD045	TR045

PENGOBATAN		
Medical_id (PK)	Medication	Test_Results
MD04054	Lipitor	Abnormal
MD00044	Paracetamol	Normal
MD03040	Penicillin	Abnormal
MD02048	Aspirin	Normal
MD03053	Penicillin	Inconclusive

PEMBAYARAN		
Transaction_id (PK)	(\$) Billing_Amount	Insurance_Provider
TR054	6,767.63	AXA Mandiri
TR044	21,784.45	BCALife
TR040	32,973.94	BPJS
TR048	36,992.27	Sequis
TR053	21,879.53	Asuransi Sinarmas
TR052	14,681.02	BPJS
TR045	42,684.56	Prudential

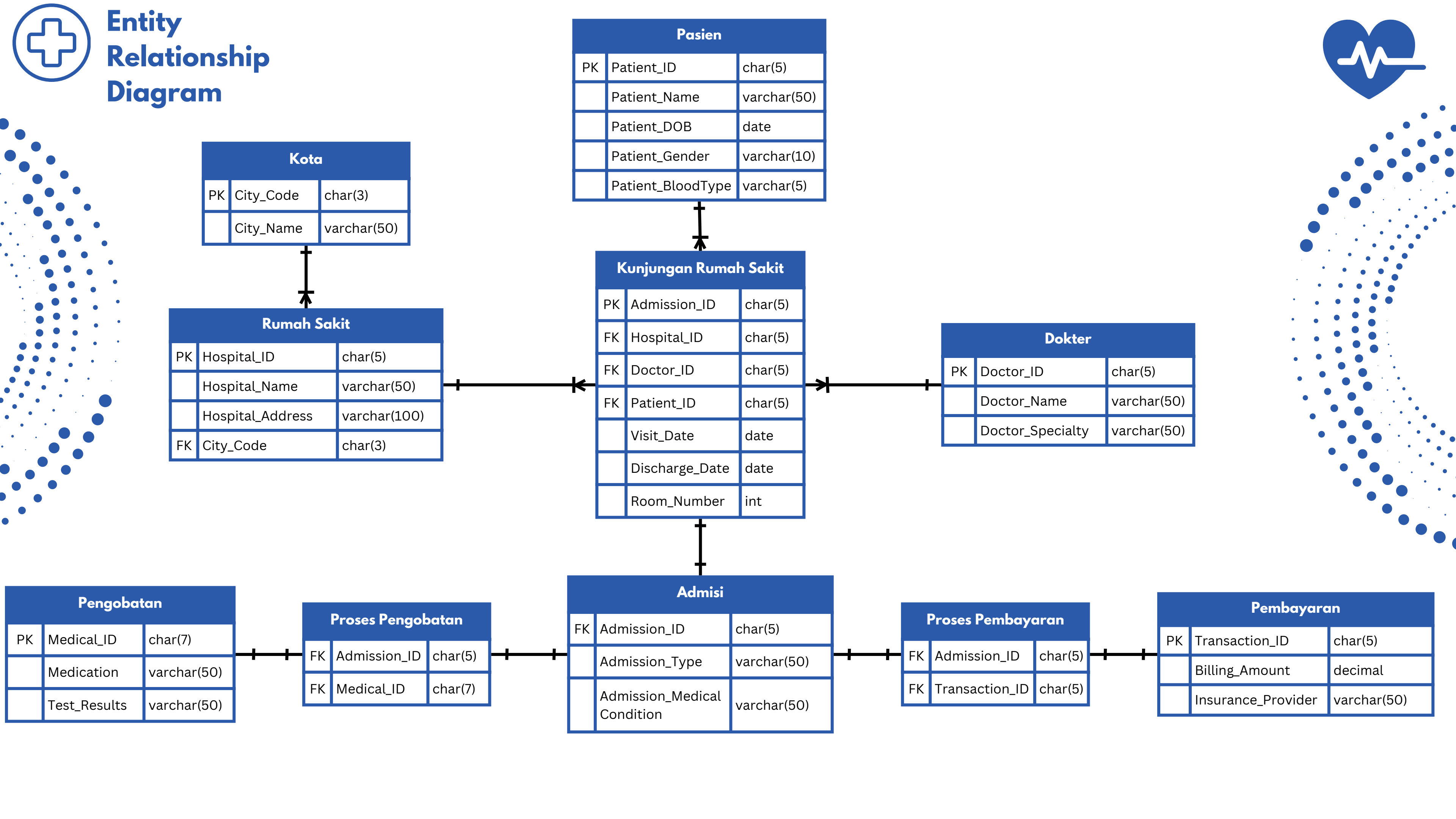
# 03)

## ERD

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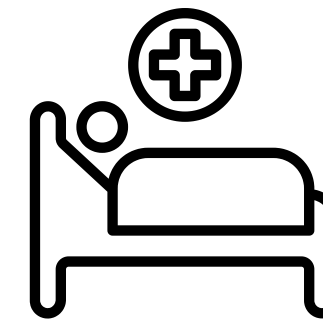
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	City_Name	varchar(50)

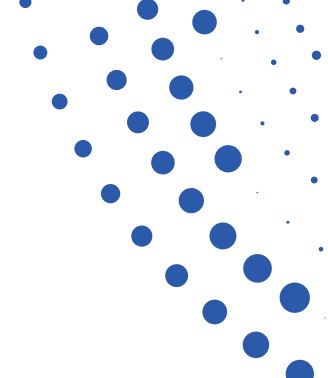
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	Hospital_Address	varchar(100)
FK	City_Code	char(3)

Pasien		
PK	Patient_ID	char(5)
	Patient_Name	varchar(50)
	Patient_DOB	date
	Patient_Gender	varchar(10)
	Patient_BloodType	varchar(5)

Kunjungan Rumah Sakit		
PK	Admission_ID	char(5)
FK	Hospital_ID	char(5)
FK	Doctor_ID	char(5)
FK	Patient_ID	char(5)
	Visit_Date	date
	Discharge_Date	date
	Room_Number	int

Dokter		
PK	Doctor_ID	char(5)
	Doctor_Name	varchar(50)
	Doctor_Specialty	varchar(50)





Rumah Sakit		
PK	Hospital_ID	char(5)
	Hospital_Name	varchar(50)
	Hospital_Address	varchar(100)
FK	City_Code	char(3)

Kunjungan Rumah Sakit		
PK	Admission_ID	char(5)
FK	Hospital_ID	char(5)
FK	Doctor_ID	char(5)
FK	Patient_ID	char(5)
	Visit_Date	date
	Discharge_Date	date
	Room_Number	int

Dokter		
PK	Doctor_ID	char(5)
	Doctor_Name	varchar(50)
	Doctor_Specialty	varchar(50)

Admisi		
FK	Admission_ID	char(5)
	Admission_Type	varchar(50)
	Admission_Medical Condition	varchar(50)

Proses Pengobatan			
FK	Admission_ID	char(5)	
FK	Medical_ID	char(7)	

Proses Pembayaran			
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FK	Transaction_ID	char(5)	

Pembayaran		
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	Billing_Amount	decimal
	Insurance_Provider	varchar(50)

Pengobatan		
PK	Medical_ID	char(7)
	Medication	varchar(50)
	Test_Results	varchar(50)





# 04)

## Skenario & Flowchart

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# Skenario 1:

## Pasien memerlukan perawatan inap

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1. Admin akan melakukan update data rawat inap rumah sakit seperti kamar yang tersedia
2. Admin update jadwal tim medis dan dokter yang berhubungan dengan pasien
3. Setelah selesai perawatan inap, admin update tagihan dan tanggal keluar pasien.
4. Kamar yang baru digunakan kembali ke status tersedia

Anomali : Jika admin mengubah status kamar menjadi tersedia tanpa memperbarui data terkait pasien yang keluar, kamar tersebut bisa dianggap tersedia padahal masih ada pasien.





# Skenario 2:

## Pasien mengalami perubahan kondisi medis

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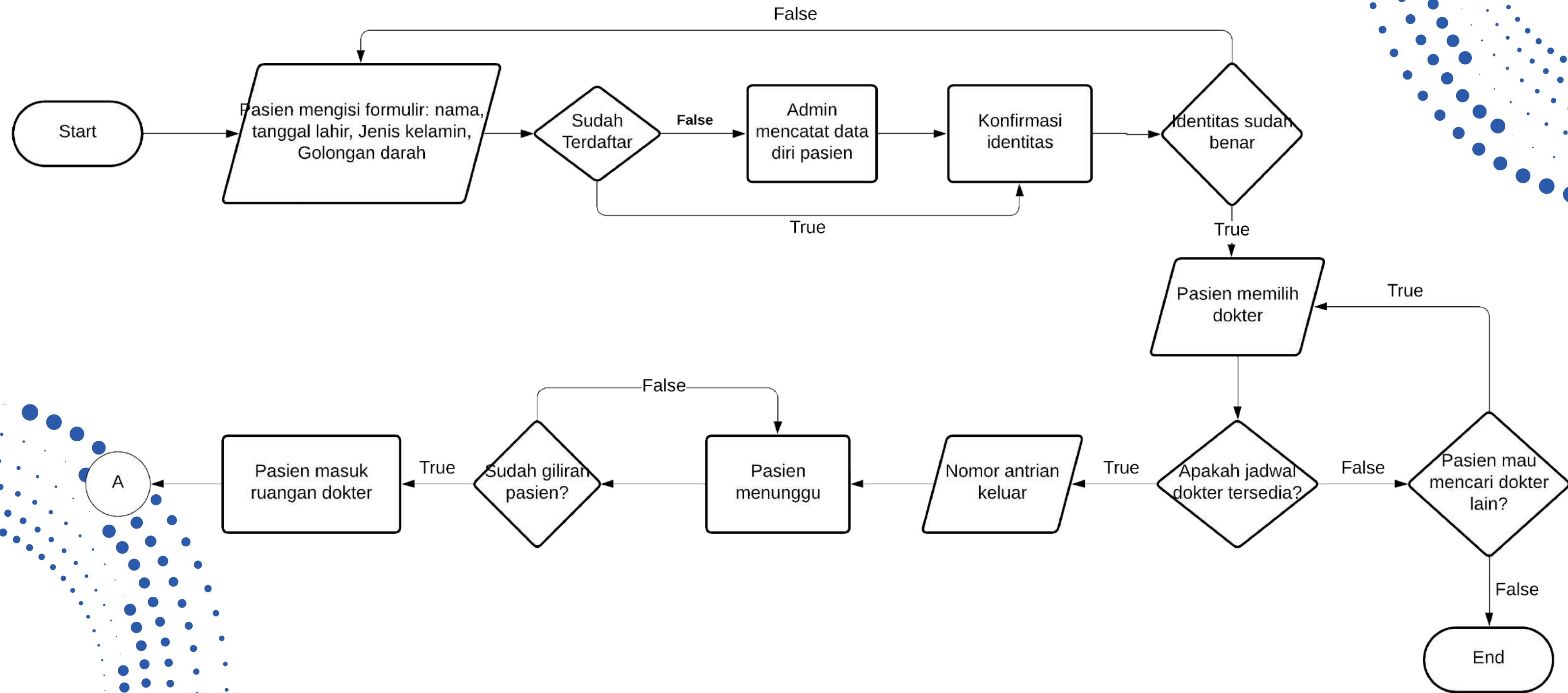
1. Admin menghubungi suster untuk memindahkan pasien ke ruang IGD yang tersedia
2. Dokter melakukan pemeriksaan kondisi pasien
3. Penanganan lebih lanjut kepada pasien jika diperlukan
4. Jika kondisi pasien sudah membaik, dapat kembali ke ruangan biasa

Anomali : Data tentang dokter yang bertugas dihapus secara tidak sengaja dari sistem sebelum pasien mendapatkan perawatan, sehingga menyulitkan identifikasi dokter yang seharusnya menangani pasien.

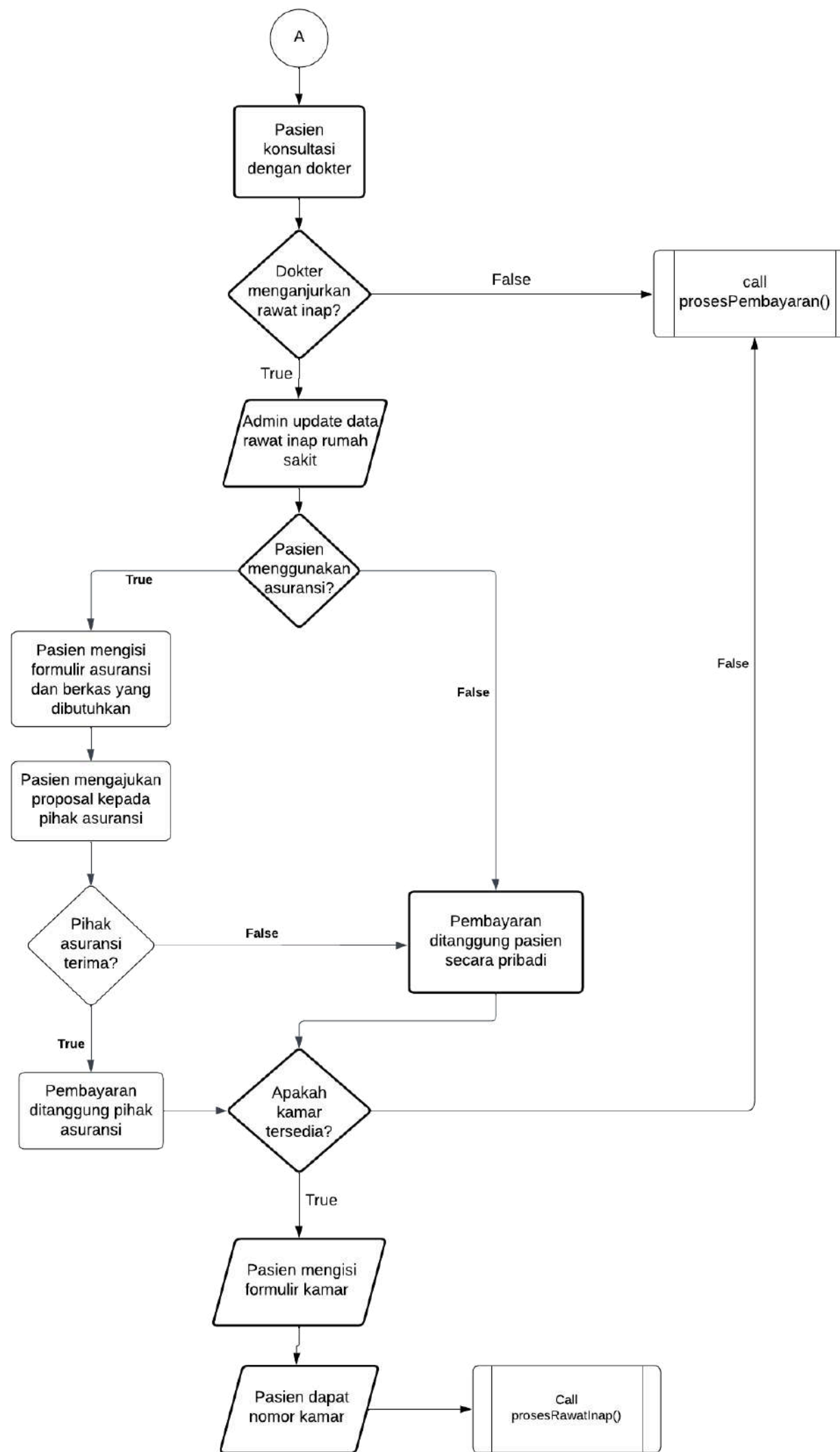




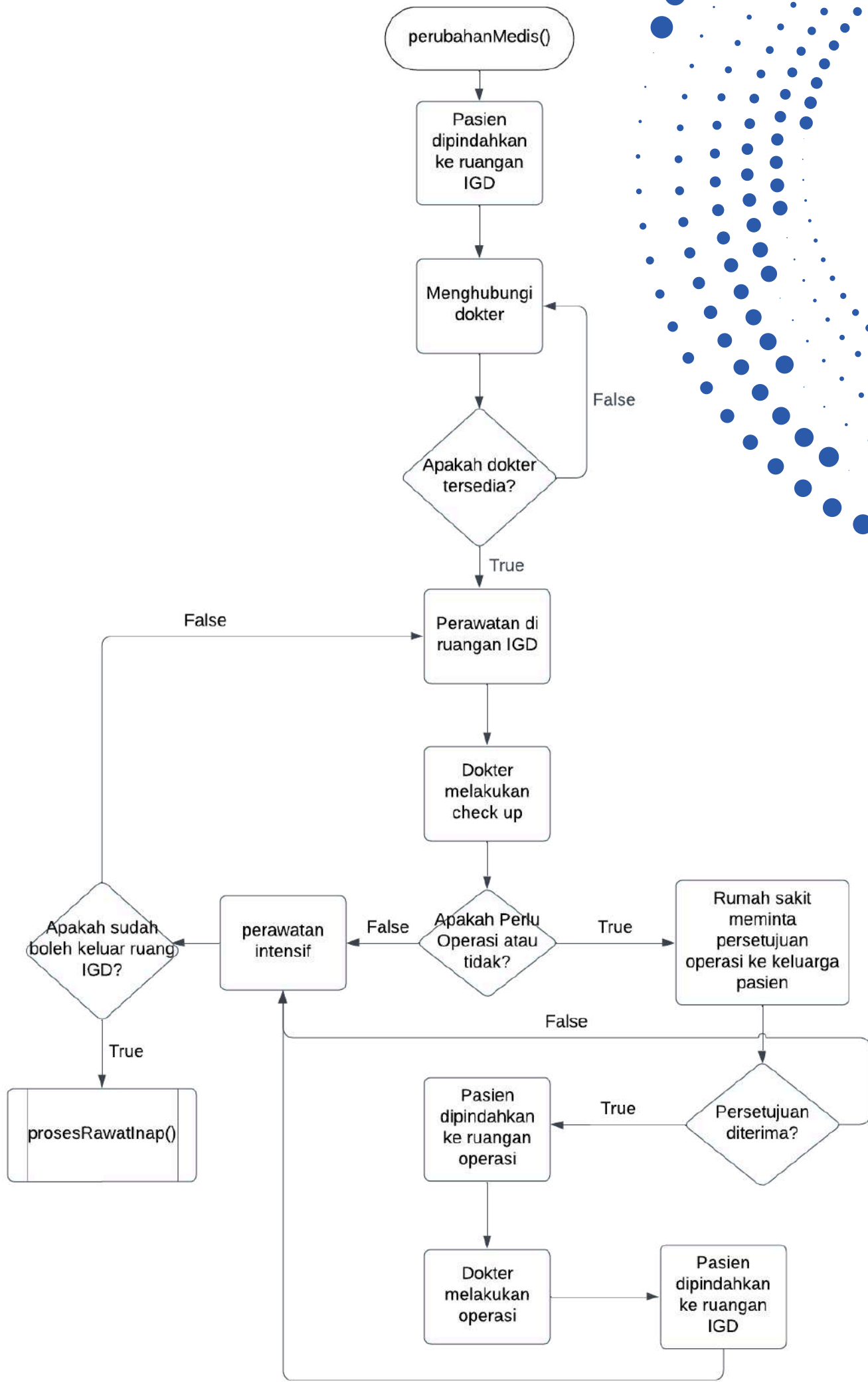
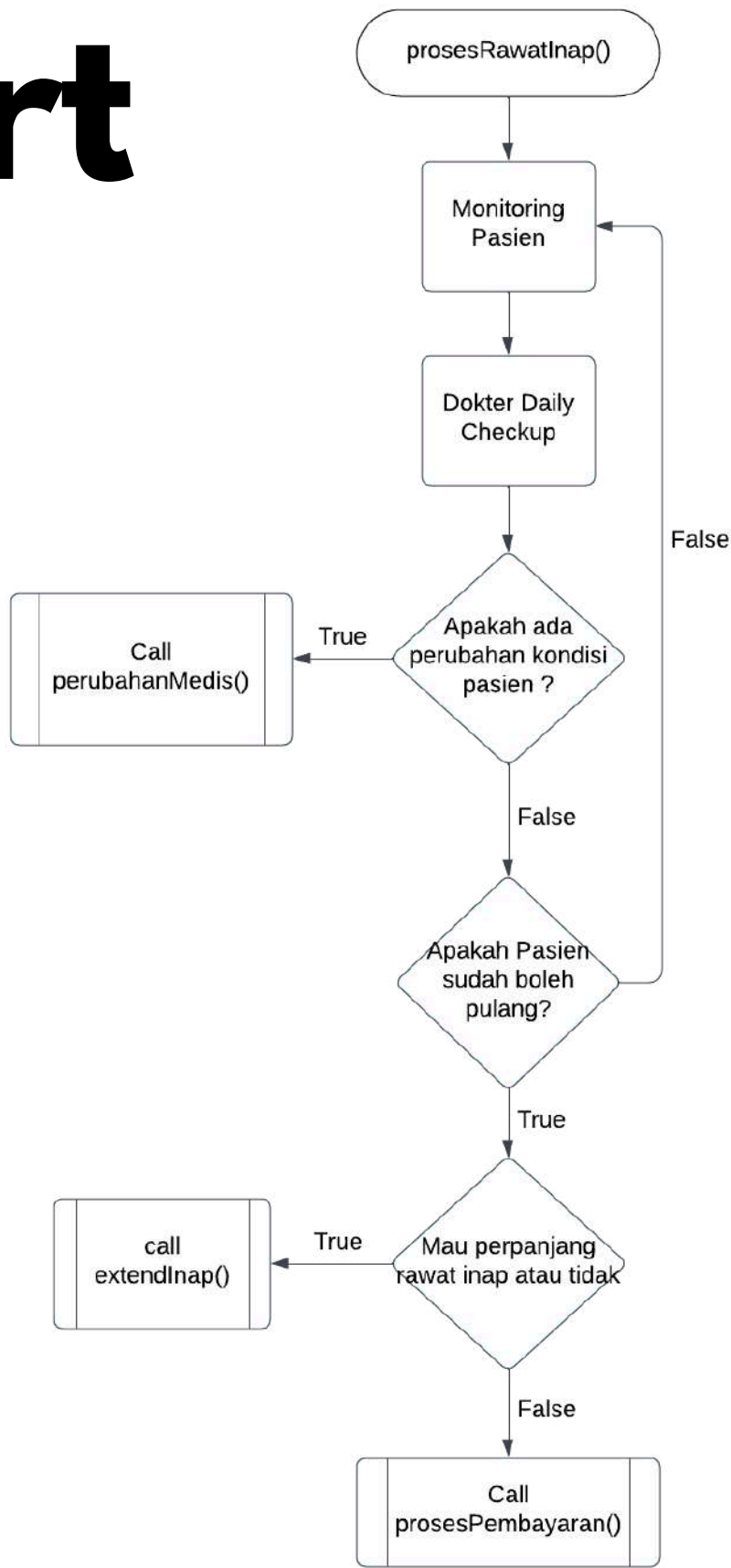
# Flowchart



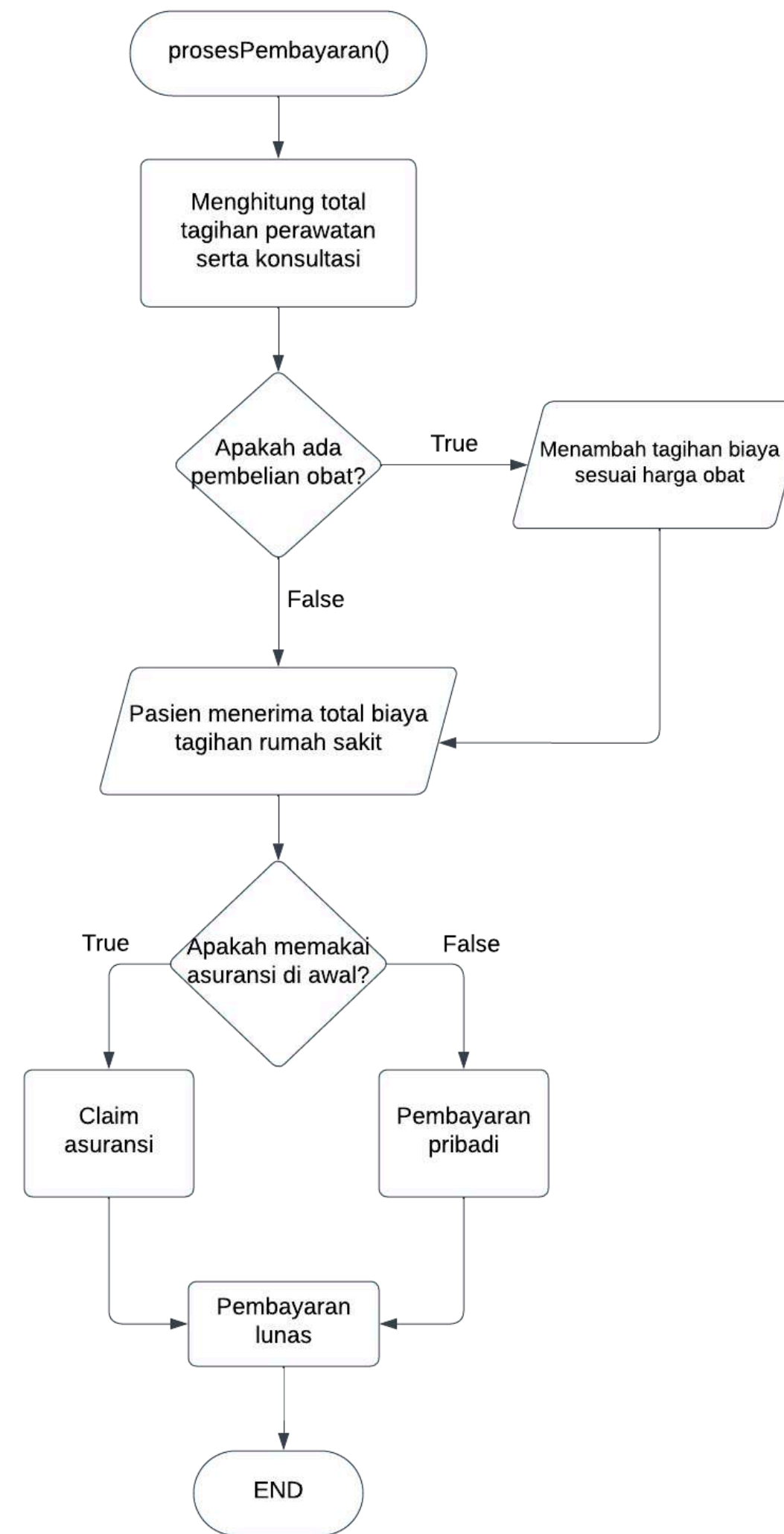
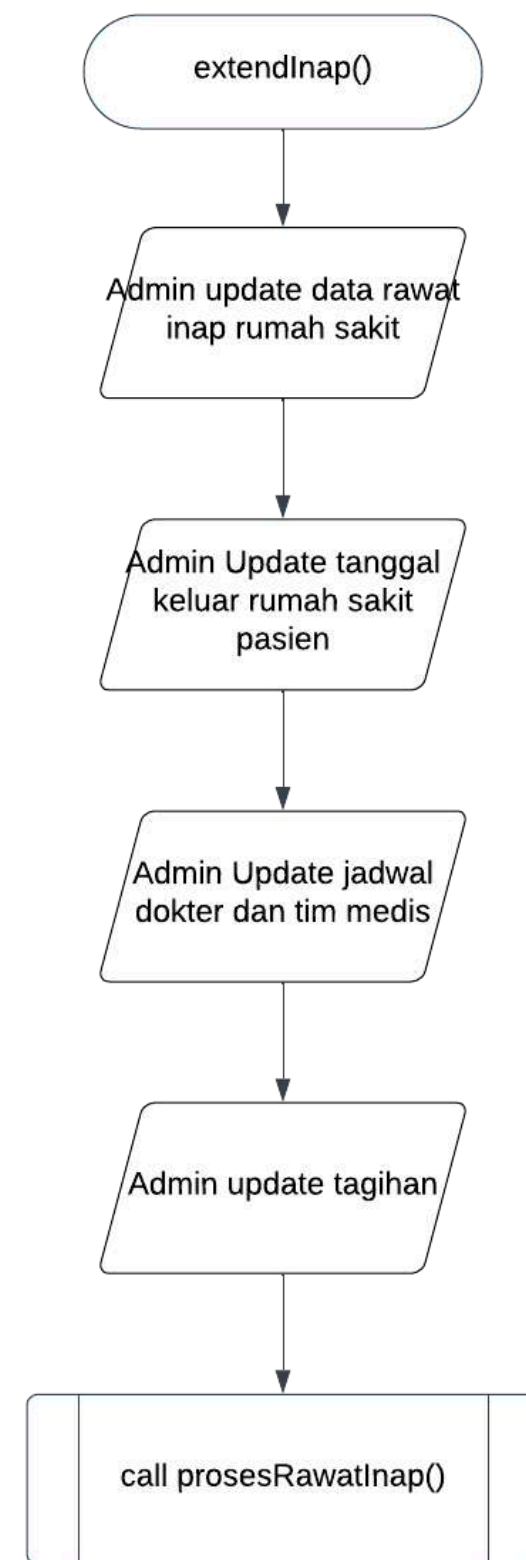
# Flowchart



# Flowchart



# Flowchart







# THANK YOU

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Hopefully the informations we provide is useful.

Any questions?

