Visual Modeling Concepts

What is Visual Modeling?

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Graphical representation using a modeling language that takes something complex and makes it easier to understand.

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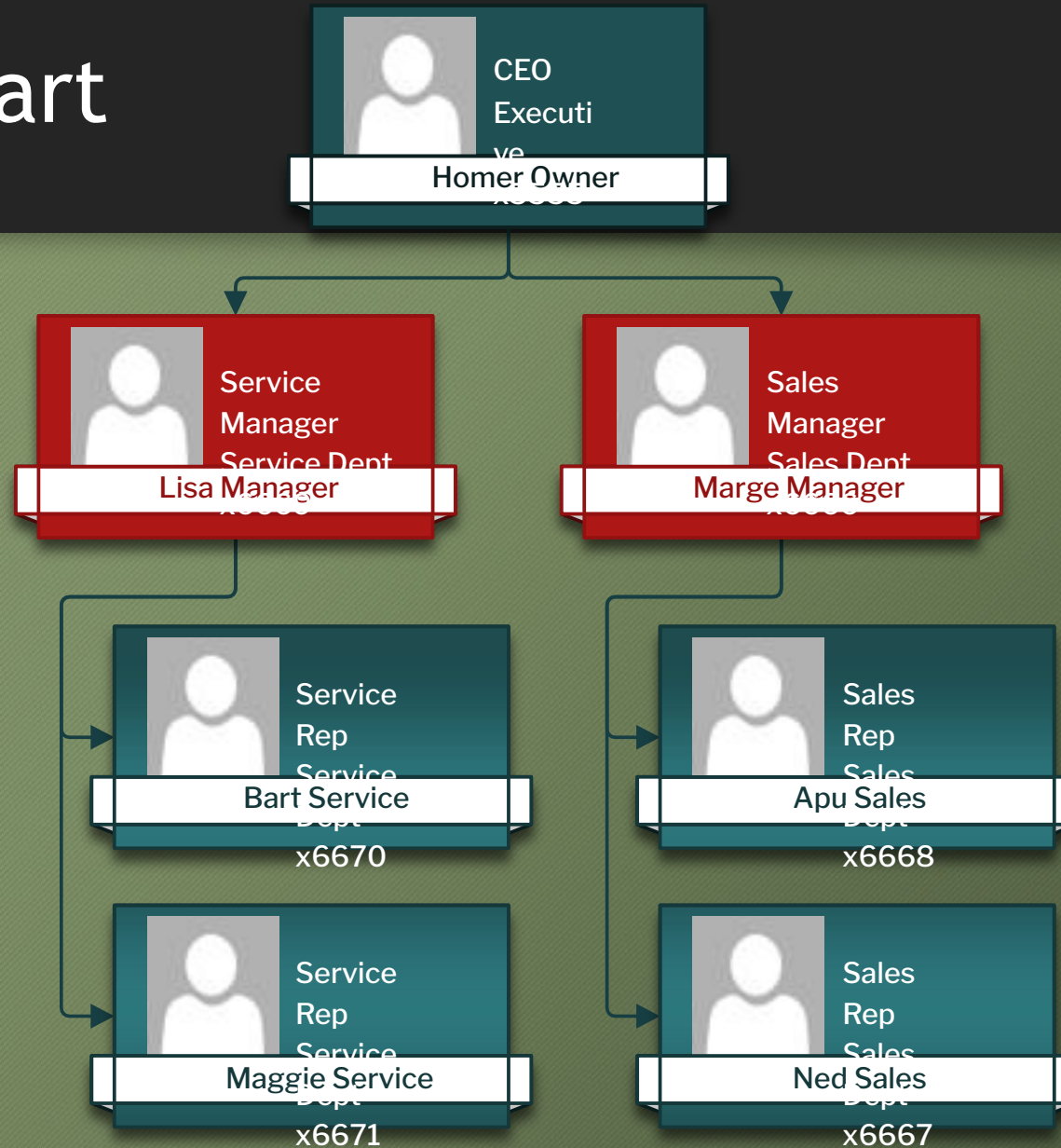
Benefits of Visual Modeling

- Easily understand complex information
- Gets all stakeholders involved
- Receive requirements efficiently
- Identify the underlying problem
- Analyze 'what if' scenarios
- Allows remove of irrelevant information

What Gets Modeled?

- Current state, "as-is"
- Future state, "to-be"

- Requirements fill the gap

Business Models

Organizational Chart

CEO
Executive

Homer Owner
x6666

Service Manager
Service Dept

Lisa Manager
x6669

Sales Manager
Sales Dept

Marge Manager
x6666

Service Rep
Service

Bart Service
Dept
x6670

Sales Rep
Sales

Apu Sales
Dept
x6668

Service Rep
Service

Maggie Service
Dept
x6671

Sales Rep
Sales

Ned Sales
Dept
x6667

Competitive Comparison Matrix

	fakebook!	FP FakePress	Saje Co	
Price	$19.95/mo	$24.95/mo	$25.50/mo	$29.99/mo
Administrative Controls	✓	✗	✓	✓
Quick Install	✓	✓	✓	✓
Training Included	✗	✓	✓	✓
Unique Features	✗	✓	✗	✓

	fakebook!	FP FakePress	Saje Co	
Price	$19.95/mo	$24.95/mo	$25.50/mo	$29.99/mo
Ease of Use	3	1	4	4
Time to Install	4	5	4	4
Quality of Training	0	4	3	5
Additional Features	0	3	1	4

Stakeholder Map

President

Vice President

Head of Operations

Executive Management

Dough-C-Dough

Bake Goods R Us

Suppliers

Dough-Licious System

Order Placer

Goods Consumer

Customers

Employees

Cashier

Baker

Shopper

Store Management

Use Case Diagram

System

Actor

Use Case

Association

Generalization

Dough-licious Pastry System

Cashier

Baker

Shopper

Enter Order

Process Order

Prepare Order

Update Inventory

Buy Inventory

Inventory System

Process Flow Diagram

Start/End

Process

Decision

Dough-Licious Pastry Work Flow – Unit Level

Cashier	Enter Order
Inventory System	1.0 Process Order · 3.0 Update Inventory · End
Baker	2.0 Prepare Order
Shopper	4.0 Buy Inventory

Process Flow Diagram

Start/End

Process

Decision

Process Order (1.0) – Task Level

Order Table
- Receive Order → 1.1 Log Order

Ingredient Table
- 1.2 Determine Ingredients → Ingredients In Stock — Yes / No

Dashboard
- 1.3 Receive Alert

Baker
- 2.0 Prepare Order
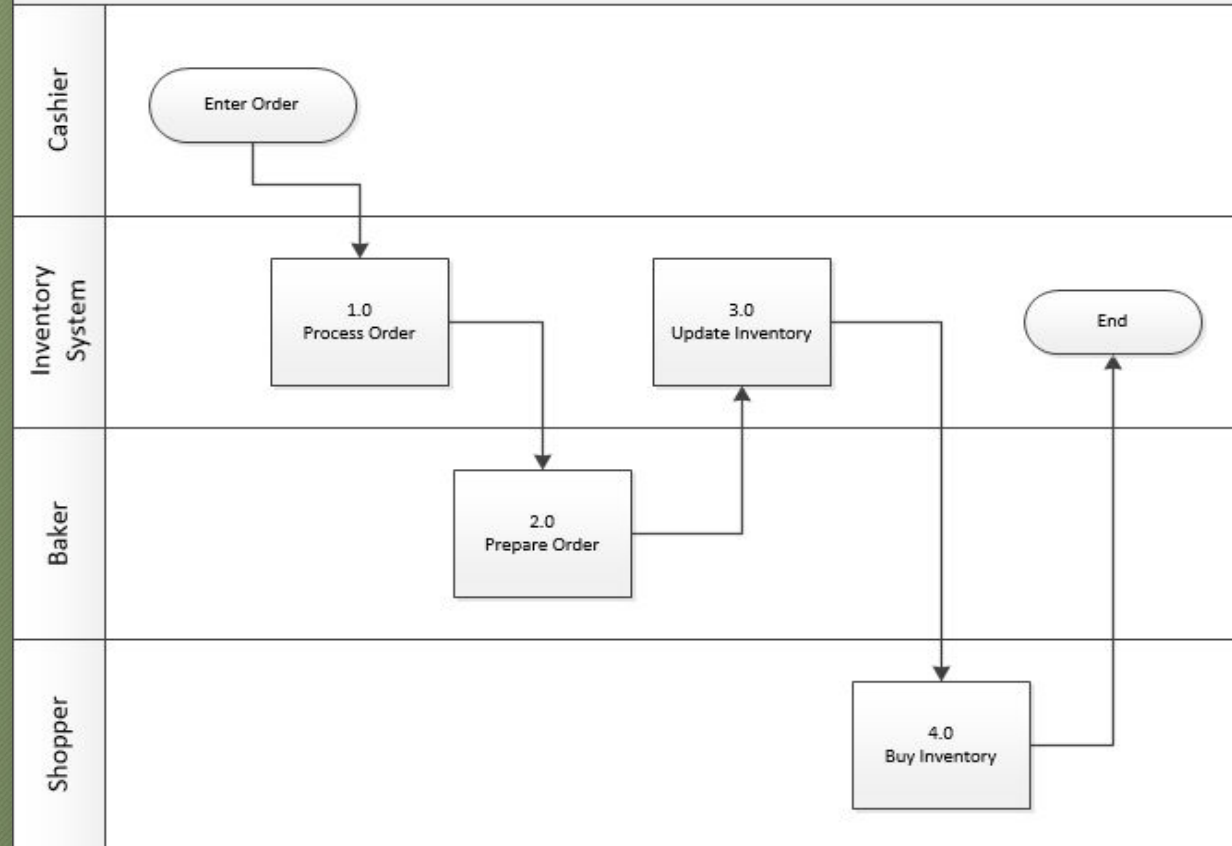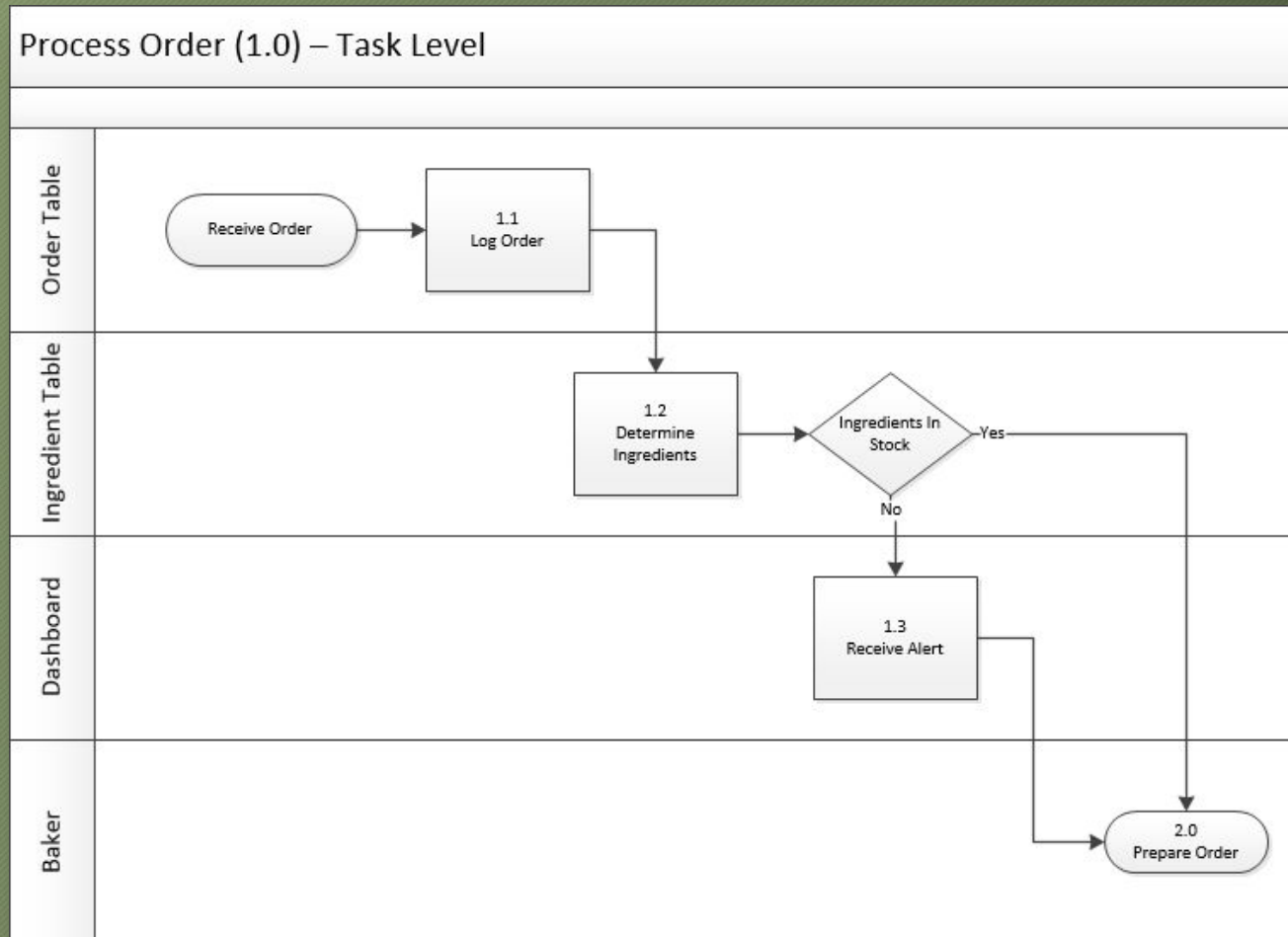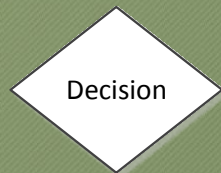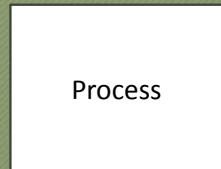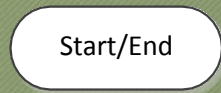
User Interface Wireframe
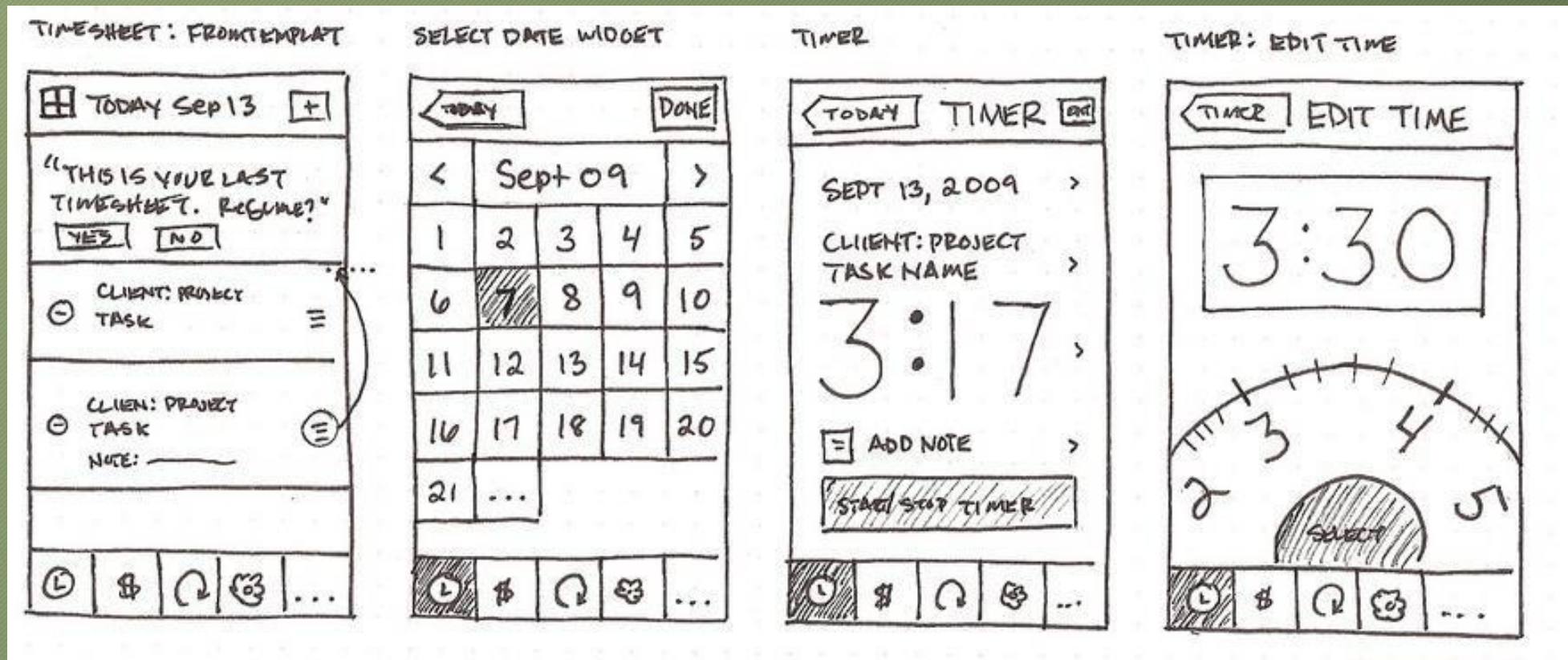
Technical Models

System Context Diagram

Main System

Actor / Other System

Data Flow

Patient

Invoices

Invoice Details

Billing Clerk

Hospital Invoice System

Payments

Maintain Patient Data

Record Treatment

Doctors

Data Flow Diagram

Process

External Entity

_____

Database

_____
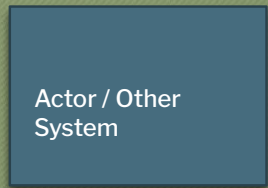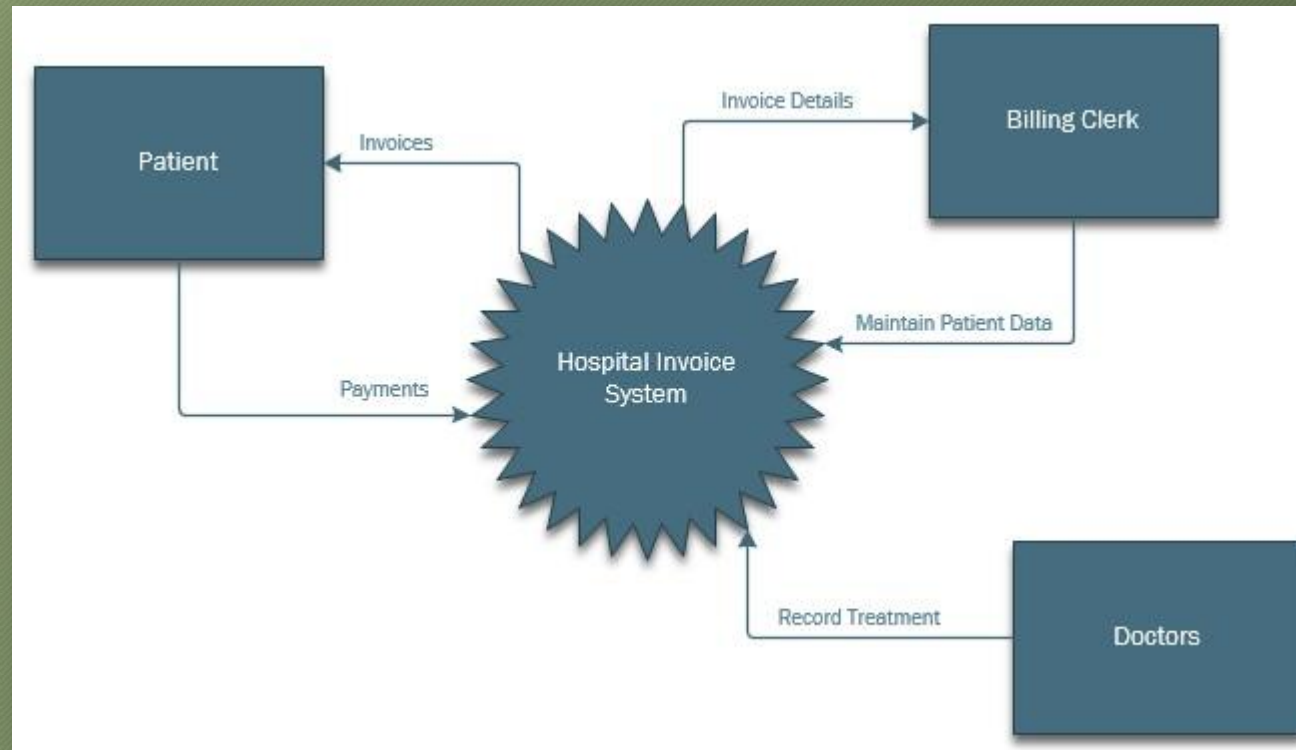
Data Flow
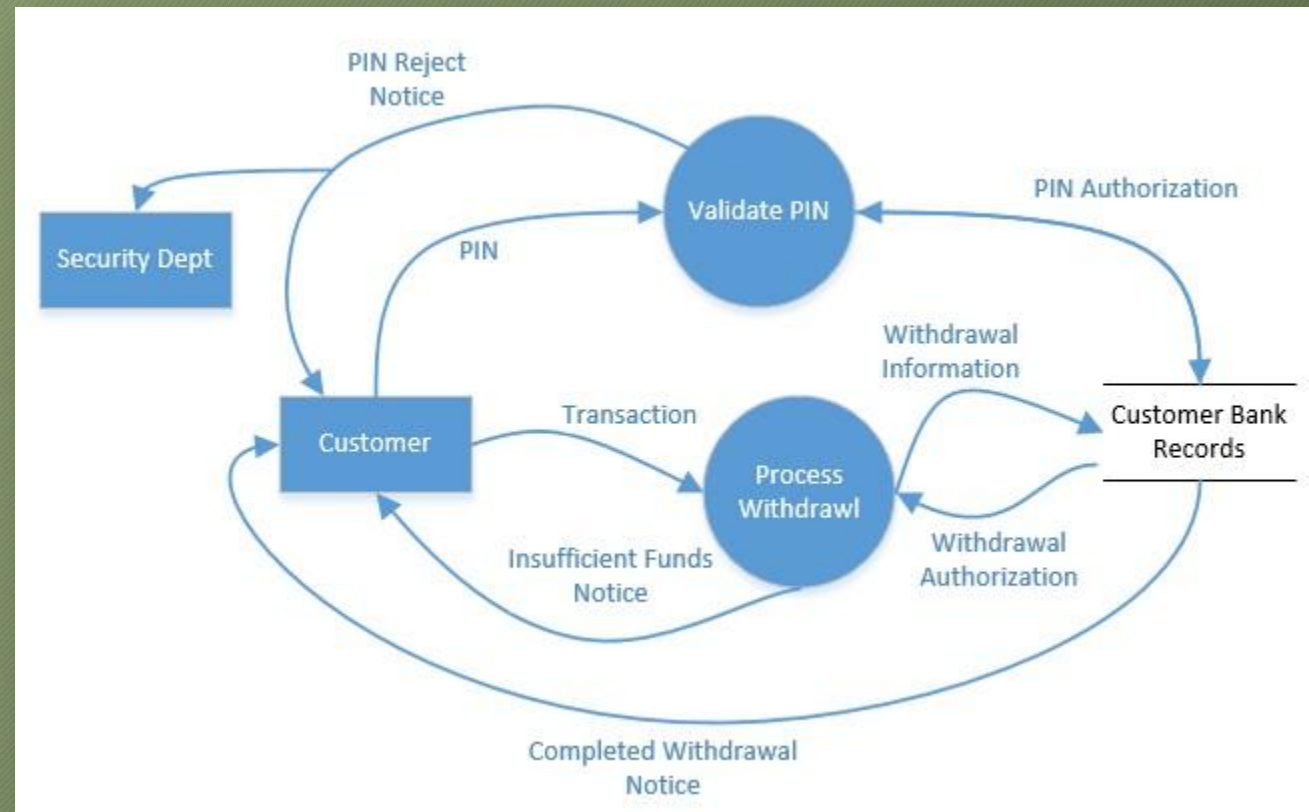
CRUD Matrix

Information	Role			
	Doctor	Nurse	Billing Clerk	Billing Manager
Access to Medical Data				
Patient History	CRU	RU	R	R
Test Results	R	R		
Treatment Results	R	R		
Treatment Authorization	CRUD	R		
Access to Administrative Data				
Patient demographics	R	RU	RU	RU
Patient Registration		CRUD	R	R
Billing				
Patient Bill			CRU	CRUD

Create

Read

Update

Delete

CRUD Matrix

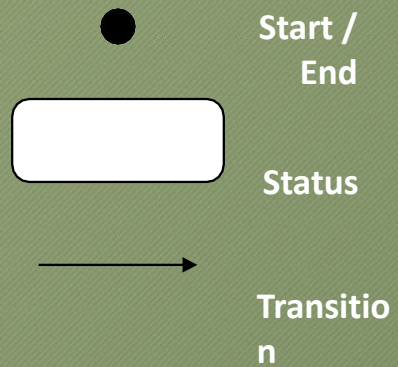| Process	Entity			
	Patient	Patient History	Patient Invoice	Patient Account
Process Patient Intake	CRU	CRU		CRU
Maintain Patient Data	RU	RU		RU
Conduct Patient Tests	R	RU		
Prescribe Treatment	R	R		RU
Invoice Patient	RU		C	RU
Receive Payment	R			RU

Create
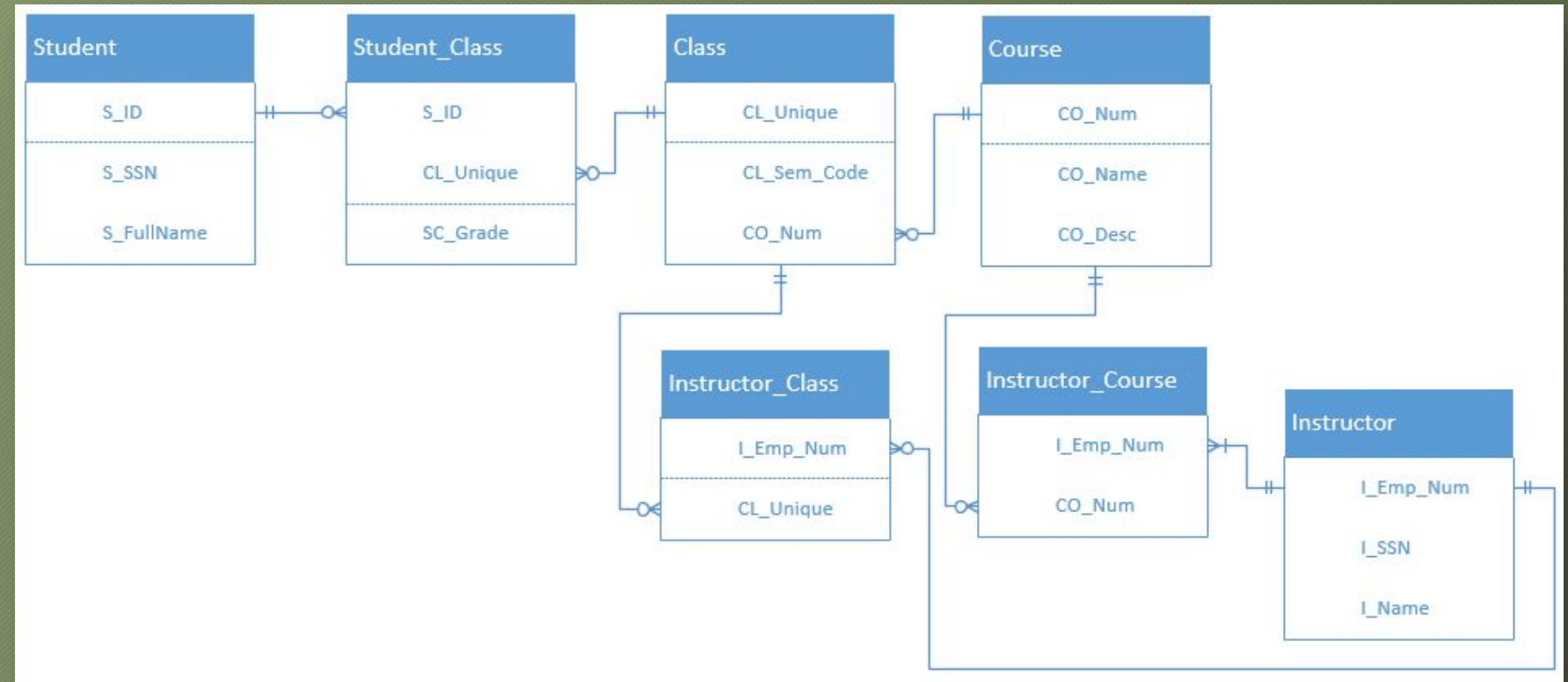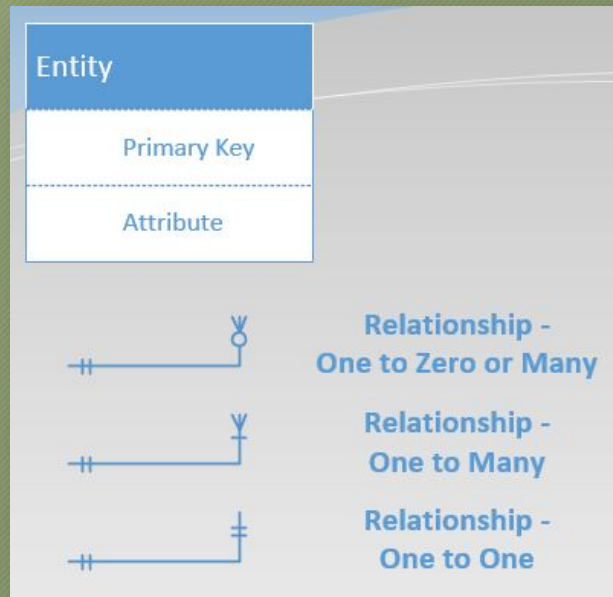
Read

Update

Delete

State Diagram
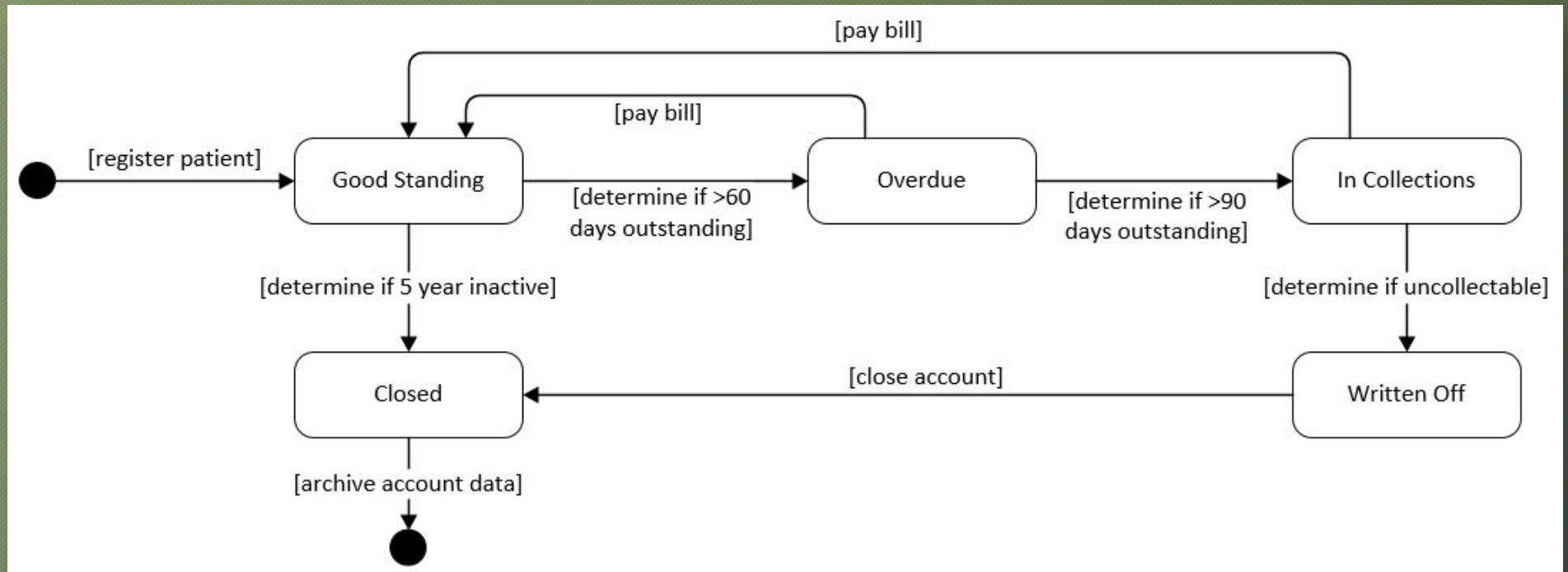
Entity Relationship Diagram (ERD)

BPMN vs UML
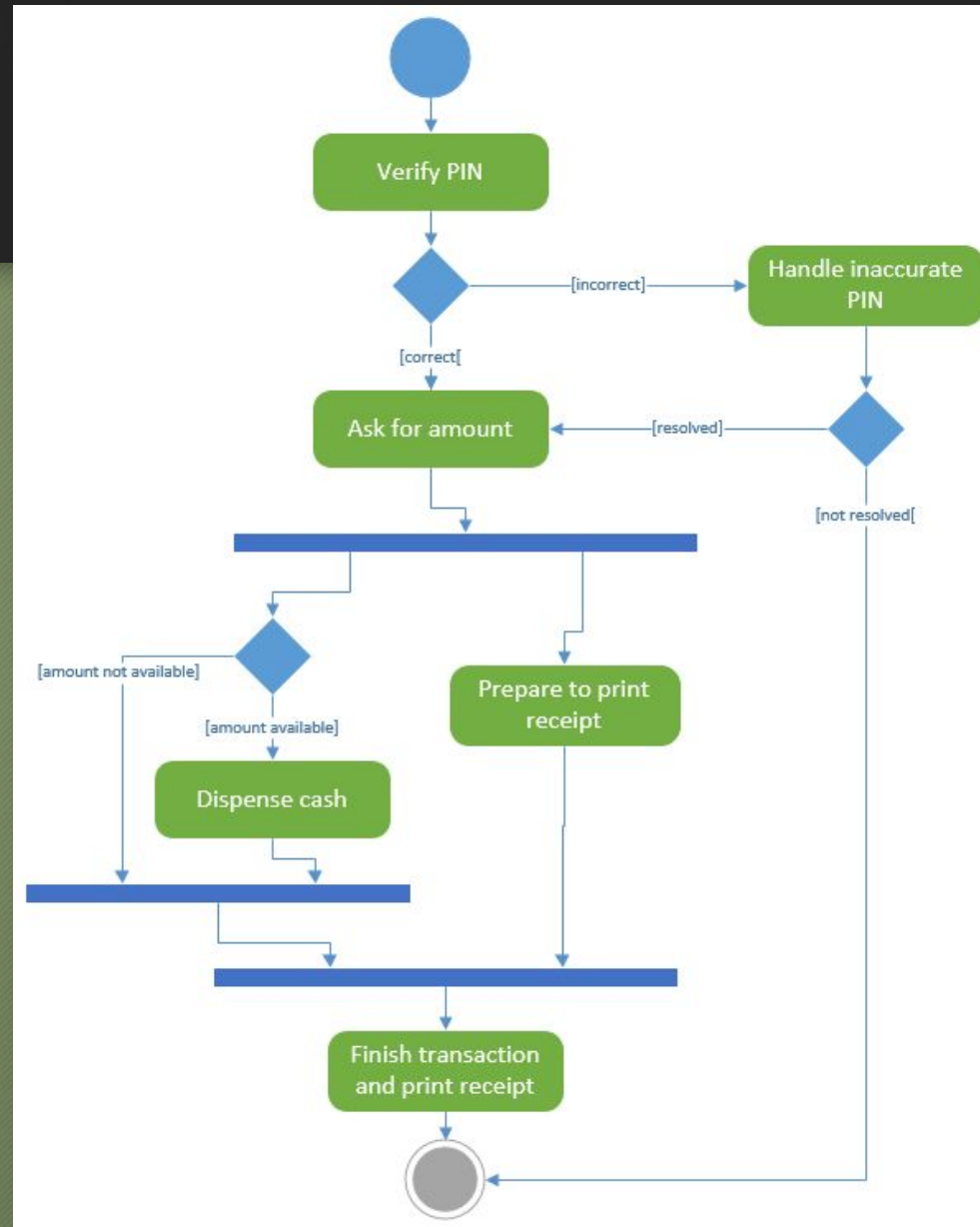
Business Process Modeling Notation

vs

Unified Modeling Language

BPMN vs UML: Common Parts

- <u>Activity</u> – Activity within a process, triggered by an event

- <u>Event</u> – Manual or automated action, or delay in time that triggers an action

- <u>Gateway</u> – Split of pathways, where multiple paths can be taken or decision on a path must be made per a condition

- <u>Flow</u> – Direction of the sequence or order of events and actions

- <u>Swimlanes</u> – Visual distinction of who is doing what within a process

UML Activity Diagram

Business Process Modeling (BPMN)