

P1:Identify functional and non-functional requirements from the system description.

Model	Functional Requirements	Non-Functional Requirements
ChatGPT	Web and mobile accessibility, menu browsing, reading reviews, customizing orders, real-time tracking, displaying delivery times, user notifications, payment integration, promotional support, loyalty programs, personalized recommendations.	Usability, Performance, Security, Reliability, Scalability, Maintainability, Compatibility
Claude	Menu browsing, order placement, order customization, review system, real-time order tracking, notifications, multiple payment options, promotional features, loyalty program, personalized recommendations	Accessibility, Multi-platform support, User-friendly interface, Performance, Security, Scalability, Reliability, Efficiency
Copilot	User registration and authentication, browse menus, customize orders, real-time order tracking, notifications, payment integration, promotional features, loyalty programs, personalized recommendations	Usability, Availability, Performance, Security, Scalability, Reliability, Health and Safety, Localization, Integration
Gemini	User and restaurant registration, profile and menu management, setting delivery fees, restaurant browsing and searching, viewing menus and reviews, customizing and placing orders, secure payments, real-time order tracking, notifications, in-app chat.	Performance, Scalability, Availability, Usability, Security, Reliability, Maintainability
Meta	User registration and login, explore and browse menus, read reviews and ratings, customize orders, real-time order tracking, notifications, secure payment processing, promotional features, personalized recommendations	Accessibility, Usability, Performance, Security, Scalability

Requirements Overlaps

- # of requirements
 - ChatGPT: $11+7=18$
 - Claude: $10+8=18$
 - Copilot: $9+9=18$
 - Gemini: $9+7=16$
 - Meta: $10+5=15$
- # of overlaps
 - ChatGPT & Claude: $8+5=13$
 - ChatGPT & Copilot: $8+5=13$
 - ChatGPT & Gemini: $6+6=12$
 - ChatGPT & Meta: $8+4=12$
 - Claude & Copilot: $7+5=12$
 - Claude & Gemini: $5+5=10$
 - Claude & Meta: $7+5=12$
 - Copilot & Gemini: $5+6=11$
 - Copilot & Meta: $8+4=12$
 - Gemini & Meta: $9+4=13$

ChatGPT and Claude

- Common features: 8 (Menu browsing, Customizing orders, Real-time tracking, Notifications, Payment options, Promotional features, Loyalty programs, Personalized recommendations)
- Overlaps: 5 (Usability, Performance, Security, Scalability, Reliability)
- Average Functions = $(18+18)/2=18$
- Similarity Ratio = $13/18=0.722$ -> Score = 4 (Very Similar)

ChatGPT & Copilot

- Common features: 8 (Menu browsing, Customizing orders, Real-time tracking, Notifications, Payment integration, Promotional features, Loyalty programs, Personalized recommendations)
- Overlaps: 5 (Usability, Performance, Security, Scalability, Reliability)
- Average Functions : $(18+18)/2=18$
- Similarity Ratio: $13/18=0.722$ -> Score = 4 (Very Similar)

ChatGPT & Gemini

- Common features: 6 (Menu browsing, Reading reviews, Customizing orders, Real-time tracking, Notifications, Payment integration)
- Overlaps: 5 (Usability, Performance, Security, Scalability, Reliability, Maintainability)
- Average Functions: $(18+17)/2=17.5$
- Similarity Ratio: $11/17.5=0.629 \rightarrow$ Score = 3 (Similar)

ChatGPT & Meta

- Common features: 8 (Menu browsing, Reading reviews, Customizing orders, Real-time tracking, Notifications, Payment integration, Promotional features, Personalized recommendations)
- Overlaps: 4 (Usability, Performance, Security, Scalability)
- Average Functions: $(18+14)/2=16$
- Similarity Ratio: $12/16=0.75$ -> Score = 4 (Very Similar)

Claude & Copilot

- Common features: 7 (Menu browsing, Customize orders, Real-time order tracking, Notifications, Promotional features, Loyalty programs, Personalized recommendations)
- Overlaps: 5 (Usability, Performance, Security, Scalability, Reliability)
- Average Functions: $(18+18)/2=18$
- Similarity Ratio: $12/18= 0.667 \rightarrow$ Score = 3 (Very Similar)

Claude & Gemini

- Common features: 5 (Menu browsing, Customizing orders, Real-time order tracking, Notifications, Personalized recommendations)
- Overlaps: 5 (Usability, Performance, Security, Scalability, Reliability)
- Average Function: $(18+17)/2=17.5$
- Similarity Ratio: $10/17.5=0.571 \rightarrow$ Score = 3 (Similar)

Claude & Meta

- Common features: 7 (Menu browsing, Customizing orders, Real-time order tracking, Notifications, Promotional features, Personalized recommendations)
- Overlaps: 5 (Accessibility, Usability, Performance, Security, Scalability)
- Average Function: $(18+14)/2=16$
- Similarity Ratio: $12/16=0.75 \rightarrow$ Score = 4 (Very Similar)

Copilot & Gemini

- Common features: 5 (Browse menus, Customize orders, Real-time order tracking, Notifications, Personalized recommendations)
- Overlaps: 6 (Usability, Performance, Security, Scalability, Availability, Reliability)
- Average Features: $(18+17)/2=17.5$
- Similarity Ratio: $11/17.5=0.629 \rightarrow$ Score = 3 (Similar)

Copilot & Meta

- Common features: 8 (User registration and authentication, Browse menus, Customize orders, Real-time order tracking, Notifications, Payment integration, Promotional features, Personalized recommendations)
- Overlaps: 4 (Usability, Performance, Security, Scalability)
- Average Features: $(18+14)/2=16$
- Similarity Ratio: $12/16=0.75$ -> Score = 4 (Very Similar)

Gemini & Meta

- Common features: 9 (User registration and login, Browse and explore menus, Read reviews and ratings, Customize orders, Real-time order tracking, Notifications, Secure payment processing, Promotional features, Personalized recommendations)
- Overlaps: 4 (Usability, Performance, Security, Scalability)
- Average Function: $(17+14)/2=15.5$
- Similarity Ratio: $13/15.5=0.839$ -> Score = 4 (Very Similar)

P2: Create a use case model for the system.

Model	Use Cases	Number of Use Cases
ChatGPT	Browse Menus, Read Reviews, Customize Order, Place Order, Track Order, Receive Notifications, Make Payment, Manage Promotions, Participate in Loyalty Program, Receive Personalized Recommendations, Manage Account, Update Order Status, Manage Restaurant Menu, Administer System	14
Claude	Register/Login, Browse Restaurants and Menus, Place Order, Process Payment, Track Order, Receive Notifications, Manage Restaurant Profile, Update Menu, Manage Orders, Accept/Reject Order, Update Order Status, Pick Up and Deliver Order, Rate and Review, Manage Promotions and Loyalty Program, Generate Reports, Provide Customer Support	16
Copilot	Browse Menus, Customize Order, Place Order, Track Order, Receive Notifications, Manage Profile, Restaurant Management, Delivery Management	8
Gemini	User Management, Restaurant Management, Browse and Search, Place Order, Manage Orders (Restaurant), Payment Processing, Communication, Review and Ratings, Promotions and Loyalty	9
Meta	Browse Menus, Search Restaurants, View Restaurant Details, Place Order, Customize Order, View Order Status, Make Payment, View Order History, Rate and Review Restaurants, Manage Restaurant Menus and Orders, Manage Delivery Personnel, Track Orders, Manage System Settings, Extensions (Reorder, Cancel Order, Promotions and Discounts)	14

ChatGPT & Claude

- ChatGPT: Browse Menus, Read Reviews, Customize Order, Place Order, Track Order, Receive Notifications, Make Payment, Manage Promotions, Participate in Loyalty Program, Receive Personalized Recommendations, Manage Account, Update Order Status, Manage Restaurant Menu, Administer System (14)
- Claude: Register/Login, Browse Restaurants and Menus, Place Order, Process Payment, Track Order, Receive Notifications, Manage Restaurant Profile, Update Menu, Manage Orders, Accept/Reject Order, Update Order Status, Pick Up and Deliver Order, Rate and Review, Manage Promotions and Loyalty Program, Generate Reports, Provide Customer Support (16)
- **Common:** Browse Menus, Review, Place Order, Track Order, Receive Notifications, Manage Promotions (6)
- **Average Function:** $(14+16)/2=15$
- **Similarity Ratio:** $6/15=0.4 \rightarrow \text{Score} = 2$ (Somewhat Similar)

ChatGPT & Copilot

- ChatGPT: Browse Menus, Read Reviews, Customize Order, Place Order, Track Order, Receive Notifications, Make Payment, Manage Promotions, Participate in Loyalty Program, Receive Personalized Recommendations, Manage Account, Update Order Status, Manage Restaurant Menu, Administer System (14)
- Copilot: Browse Menus, Customize Order, Place Order, Track Order, Receive Notifications, Manage Profile, Restaurant Management, Delivery Management (8)
- **Common:** Browse Menus, Customize Order, Place Order, Track Order, Receive Notifications, Restaurant Management (6)
- **Average Function:** $(14+8)/2=11$
- **Similarity Ratio:** $6/11=0.545 \rightarrow \text{Score} = 3 \text{ (Similar)}$

ChatGPT & Gemini

- ChatGPT: Browse Menus, Read Reviews, Customize Order, Place Order, Track Order, Receive Notifications, Make Payment, Manage Promotions, Participate in Loyalty Program, Receive Personalized Recommendations, Manage Account, Update Order Status, Manage Restaurant Menu, Administer System (14)
- Gemini: User Management, Restaurant Management, Browse and Search, Place Order, Manage Orders (Restaurant), Payment Processing, Communication, Review and Ratings, Promotions and Loyalty (9)
- **Common:** Browse Menus, Place Order, Receive Notifications, Make Payment, Participate in Loyalty Program, Manage Restaurant Menu (6)
- **Average Function:** $(14+9)/2=11.5$
- **Similarity Ratio:** $6/11.5=0.522 \rightarrow \text{Score} = 3 \text{ (Similar)}$

ChatGPT & Meta

- ChatGPT: Browse Menus, Read Reviews, Customize Order, Place Order, Track Order, Receive Notifications, Make Payment, Manage Promotions, Participate in Loyalty Program, Receive Personalized Recommendations, Manage Account, Update Order Status, Manage Restaurant Menu, Administer System (14)
- Meta: Browse Menus, Search Restaurants, View Restaurant Details, Place Order, Customize Order, View Order Status, Make Payment, View Order History, Rate and Review Restaurants, Manage Restaurant Menus and Orders, Manage Delivery Personnel, Track Orders, Manage System Settings, Extensions (Reorder, Cancel Order, Promotions and Discounts) (14)
- **Common:** Browse Menus, Place Order, Customize Order, Track Order, Make Payment, Manage Promotions, Rate and Review Restaurants, Manage Restaurant Menu, Participate in Loyalty Program, Administer System (10)
- **Average Function:** $(14+14)/2=14$
- **Similarity Ratio:** $10/14=0.714 \rightarrow \text{Score} = 4$ (Very Similar)

Claude & Copilot

- Claude: Register/Login, Browse Restaurants and Menus, Place Order, Process Payment, Track Order, Receive Notifications, Manage Restaurant Profile, Update Menu, Manage Orders, Accept/Reject Order, Update Order Status, Pick Up and Deliver Order, Rate and Review, Manage Promotions and Loyalty Program, Generate Reports, Provide Customer Support (16)
- Copilot: Browse Menus, Customize Order, Place Order, Track Order, Receive Notifications, Manage Profile, Restaurant Management, Delivery Management (8)
- **Common:** Browse Menus, Place Order, Track Order, Receive Notifications, Restaurant Management, Manage Profile, Delivery Management (7)
- **Average Function:** $(16+8)/2=12$
- **Similarity Ratio:** $7/12=0.583 \rightarrow \text{Score} = 3 \text{ (Similar)}$

Claude & Gemini

- Claude: Register/Login, Browse Restaurants and Menus, Place Order, Process Payment, Track Order, Receive Notifications, Manage Restaurant Profile, Update Menu, Manage Orders, Accept/Reject Order, Update Order Status, Pick Up and Deliver Order, Rate and Review, Manage Promotions and Loyalty Program, Generate Reports, Provide Customer Support (16)
- Gemini: User Management, Restaurant Management, Browse and Search, Place Order, Manage Orders (Restaurant), Payment Processing, Communication, Review and Ratings, Promotions and Loyalty (9)
- **Common:** User Management, Browse Restaurants and Menus, Restaurant Management, Place Order, Manage Orders, Process Payment, Rate and Review, Manage Promotions and Loyalty Program, , Receive Notifications (9)
- **Average Function:** $(16+9)/2=12.5$
- **Similarity Ratio:** $9/12.5=0.72 \rightarrow \text{Score} = 4 \text{ (Very Similar)}$

Claude & Meta

- Claude: Register/Login, Browse Restaurants and Menus, Place Order, Process Payment, Track Order, Receive Notifications, Manage Restaurant Profile, Update Menu, Manage Orders, Accept/Reject Order, Update Order Status, Pick Up and Deliver Order, Rate and Review, Manage Promotions and Loyalty Program, Generate Reports, Provide Customer Support (16)
- Meta: Browse Menus, Search Restaurants, View Restaurant Details, Place Order, Customize Order, View Order Status, Make Payment, View Order History, Rate and Review Restaurants, Manage Restaurant Menus and Orders, Manage Delivery Personnel, Track Orders, Manage System Settings, Extensions (Reorder, Cancel Order, Promotions and Discounts) (14)
- **Common:** Browse Menus, Search Restaurants, View Restaurant Details, Place Order, Track Order, Process Payment, Manage Promotions and Loyalty Program, Rate and Review, Manage Restaurant Profile, Manage Orders, Manage Delivery Personnel (11)
- **Average Function:** $(16+14)/2=15$
- **Similarity Ratio:** $11/15=0.733 \rightarrow \text{Score} = 4 \text{ (Very Similar)}$

Copilot & Gemini

- Copilot: Browse Menus, Customize Order, Place Order, Track Order, Receive Notifications, Manage Profile, Restaurant Management, Delivery Management (8)
- Gemini: User Management, Restaurant Management, Browse and Search, Place Order, Manage Orders (Restaurant), Payment Processing, Communication, Review and Ratings, Promotions and Loyalty (9)
- **Common:** Browse Menus, Place Order, Receive Notifications, Restaurant Management, Promotions and Loyalty (5)
- **Average Function:** $(8+9)/2=8.5$
- **Similarity Ratio:** $5/8.5=0.588 \rightarrow \text{Score} = 3 \text{ (Similar)}$

Copilot & Meta

- Copilot: Browse Menus, Customize Order, Place Order, Track Order, Receive Notifications, Manage Profile, Restaurant Management, Delivery Management (8)
- Meta: Browse Menus, Search Restaurants, View Restaurant Details, Place Order, Customize Order, View Order Status, Make Payment, View Order History, Rate and Review Restaurants, Manage Restaurant Menus and Orders, Manage Delivery Personnel, Track Orders, Manage System Settings, Extensions (Reorder, Cancel Order, Promotions and Discounts) (14)
- **Common:** Browse Menus, Place Order, Customize Order, Track Order, Manage Restaurant Menus and Orders, Delivery Management, Manage Profile (7)
- **Average Function:** $(8+14)/2=11$
- **Similarity Ratio:** $7/11=0.636 \rightarrow \text{Score} = 3 \text{ (Similar)}$

Gemini & Meta

- Gemini: User Management, Restaurant Management, Browse and Search, Place Order, Manage Orders (Restaurant), Payment Processing, Communication, Review and Ratings, Promotions and Loyalty (9)
- Meta: Browse Menus, Search Restaurants, View Restaurant Details, Place Order, Customize Order, View Order Status, Make Payment, View Order History, Rate and Review Restaurants, Manage Restaurant Menus and Orders, Manage Delivery Personnel, Track Orders, Manage System Settings, Extensions (Reorder, Cancel Order, Promotions and Discounts) (14)
- **Common:** Browse Menus, Search Restaurants, View Restaurant Details, Place Order, Manage Restaurant Menus and Orders, Make Payment, Rate and Review, Promotions and Loyalty (8)
- **Average Function:** $(9+14)/2=11.5$
- **Similarity Ratio:** $8/11.5=0.696 \rightarrow \text{Score} = 3 \text{ (Similar)}$

P3: Create use case specifications for identified use cases.

- Place Order

Model	Actors	Preconditions	Basic Flow	Alternative Flows	Postconditions	Count
ChatGPT	User	1. User must have items in the cart.	1. reviews, 2. selects 'Place Order'. 3. selects payment, 4. confirms, 5. receives confirmation.	1. Payment failure, 2. prompts retry.	1. Order placed, 2.user receives confirmation.	1+1+5+2+2=11
Claude	Customer	1. Customer logged in, 2. has selected a restaurant.	1. browses menu, 2. adds items, 3. chooses delivery, 4. confirms order.	1. Order modification, 2.validation failure.	1. Order placed, 2. restaurant notified, 3. confirmation received.	1+2+4+2+3=12
Copilot	User	1. User has selected, 2. customized items.	1. reviews, 2. confirms order, 3. payment processed.	1. Payment failure, 2. prompts retry.	1. Order successfully placed.	1+2+3+2+1=9
Gemini	Customer	1. Customer logged in, 2. items in cart.	1. reviews items, 2. selects delivery/pickup. 3. pays, 4. order confirmed, 5. restaurant notified.	1. Payment failure, 2. item unavailable, 3. restaurant closed.	1. Confirmed order, 2. updates via notifications.	1+2+5+3+2=13
Meta	User	1. User logged in, 2. selected a restaurant.	1. selects menu items, 2. submits order.	1. Order edits, 2. applies promotions.	1. Order placed, 2. confirmation received.	1+2+2+2+2=9

Common components: Actors, Preconditions, Basic Flow, Alternate Flows, Postconditions

Pair	Actors	Preconditions	Basic Flow	Alternative Flows	Postconditions	
ChatGPT & Claude	User	None	1. Reviewing, 2. select, 3. confirming the order	1. failure	1. Order placed, 2. confirmation received	1+3+1+2=7
ChatGPT & Copilot	User	1. selected	1. Reviewing, 2. payment, 3. confirming the order	1. Payment failure, 2. prompts retry	1. Order placed	1+1+3+2+1=8
ChatGPT & Gemini	User	1. items in cart	1. Reviewing items, 2. select order, 3. selecting payment, 4. confirm	1. Payment failure handled	1. confirmation received	1+1+4+1+1=8
ChatGPT & Meta	User	None	1. Selecting and submitting order	None	1. Order placed, 2. confirmation received	1+0+1+0+2=4
Claude & Copilot	User	1. select	1. add items, 2. confirming order	1. failure	1. Order placed	1+1+2+1+1=6
Claude & Gemini	Customer	1. login	1. browse, 2. Selecting, 3. delivery, 4. confirming order	1. failure	1. Order placed, 2. confirmation received	1+1+4+1+2=9
Claude & Meta	User	1. login, 2. select restaurant	1. Selecting items, 2. confirming order	None	1. Order placed, 2. confirmation received	1+2+2+0+2=7
Copilot & Gemini	User	1. select items	1. Reviewing, 2. confirming order, 3. pay	1. Payment failure	1. Order placed	1+1+3+1+1=7
Copilot & Meta	User	None	1. confirming order	None	1. Order placed	1+0+1+0+1=3
Gemini & Meta	User	1. login	1. order confirm	None	1. Order placed, 2. confirmation received	1+1+1+0+2=5

ChatGPT & Claude

- ChatGPT: 11
- Claude: 12
- Common: 7
- $\text{Avg} = (11 + 12)/2 = 11.5$
- $\text{SR} = 7/11.5 = 0.609 \rightarrow \text{Scale} = 3$

ChatGPT & Copilot

- ChatGPT: 11
- Copilot: 9
- Common: 8
- $\text{Avg} = (11 + 9)/2 = 10$
- $\text{SR} = 8/10 = 0.8 \rightarrow \text{Scale} = 4$

ChatGPT & Gemini

- ChatGPT: 11
- Gemini: 13
- Common: 8
- $\text{Avg} = (11 + 13)/2 = 12$
- $\text{SR} = 8/12 = 0.667 \rightarrow \text{Scale} = 3$

ChatGPT & Meta

- ChatGPT: 11
- Meta: 9
- Common: 4
- $\text{Avg} = (11 + 9)/2 = 10$
- $\text{SR} = 4/10 = 0.4 \rightarrow \text{Scale} = 2$

Claude & Copilot

- Claude: 12
- Copilot: 8
- Common: 6
- $\text{Avg} = (12 + 8)/2 = 10$
- $\text{SR} = 6/10 = 0.6 \rightarrow \text{Scale} = 3$

Claude & Gemini

- Claude: 12
- Gemini: 13
- Common: 9
- $\text{Avg} = (12 + 13)/2 = 12.5$
- $\text{SR} = 9/12.5 = 0.72 \rightarrow \text{Scale} = 4$

Claude & Meta

- Claude: 12
- Meta: 9
- Common: 7
- $\text{Avg} = (12 + 9)/2 = 10.5$
- $\text{SR} = 7/10.5 = 0.667 \rightarrow \text{Scale} = 3$

Copilot & Gemini

- Copilot: 9
- Gemini: 13
- Common: 7
- $\text{Avg} = (9 + 13)/2 = 11$
- $\text{SR} = 7/11 = 0.636 \rightarrow \text{Scale} = 3$

Copilot & Meta

- Copilot: 9
- Meta: 9
- Common: 3
- $\text{Avg} = (9 + 9)/2 = 9$
- $\text{SR} = 3/9 = 0.333 \rightarrow \text{Scale} = 2$

Gemini & Meta

- Gemini: 13
- Meta: 9
- Common: 5
- $\text{Avg} = (13 + 9)/2 = 11$
- $\text{SR} = 5/11 = 0.455 \rightarrow \text{Scale} = 2$

P4: Create a domain model based on use case specifications

Model	Classes	Count
ChatGPT	User, Restaurant, Menu, MenuItem, Order, OrderStatus, Review, Payment, Promotion, LoyaltyProgram, Recommendation, Account, Notification, DeliveryPerson, SystemAdministrator	15
Claude	User, Customer, RestaurantOwner, DeliveryDriver, Restaurant, Menu, MenuItem, Order, OrderItem, Payment, Review, Promotion	12
Copilot	User, Restaurant, Menu Item, Order, Customization Option, Notification, Delivery Personnel, Loyalty Program, System	9
Gemini	Customer, Restaurant, Menu Item, Order, Payment Method	5
Meta	User, Restaurant, Menu, Order, OrderItem, MenuItem, Payment, DeliveryPersonnel	8

ChatGPT & Claude

- ChatGPT: User, Restaurant, Menu, MenuItem, Order, OrderStatus, Review, Payment, Promotion, LoyaltyProgram, Recommendation, Account, Notification, DeliveryPerson, SystemAdministrator (15)
- Claude: User, Customer, RestaurantOwner, DeliveryDriver, Restaurant, Menu, MenuItem, Order, OrderItem, Payment, Review, Promotion (12)
- Common: User, Restaurant, Menu, MenuItem, DeliveryPerson, Order, Review, Payment, Promotion (9)
- $Avg = (15 + 12)/2 = 13.5$
- $SR = 9/13.5 = 0.667 \rightarrow Scale = 3$

ChatGPT & Copilot

- ChatGPT: User, Restaurant, Menu, MenuItem, Order, OrderStatus, Review, Payment, Promotion, LoyaltyProgram, Recommendation, Account, Notification, DeliveryPerson, SystemAdministrator (15)
- Copilot: User, Restaurant, Menu Item, Order, Customization Option, Notification, Delivery Personnel, Loyalty Program, System (9)
- Common: User, Restaurant, Menu, MenuItem, Order, Notification, Loyalty Program, Delivery Personnel (8)
- $Avg = (15 + 9)/2 = 12.0$
- $SR = 8/12 = 0.667 \rightarrow Scale = 3$

ChatGPT & Gemini

- ChatGPT: User, Restaurant, Menu, MenuItem, Order, OrderStatus, Review, Payment, Promotion, LoyaltyProgram, Recommendation, Account, Notification, DeliveryPerson, SystemAdministrator (15)
- Gemini: Customer, Restaurant, Menu Item, Order, Payment Method (5)
- Common: User, Restaurant, MenuItem, Order, Payment (4)
- $Avg = (15 + 5)/2 = 10$
- $SR = 4/10 = 0.4 \rightarrow Scale = 2$

ChatGPT & Meta

- ChatGPT: User, Restaurant, Menu, MenuItem, Order, OrderStatus, Review, Payment, Promotion, LoyaltyProgram, Recommendation, Account, Notification, DeliveryPerson, SystemAdministrator (15)
- Meta: User, Restaurant, Menu, Order, OrderItem, MenuItem, Payment, DeliveryPersonnel (8)
- Common: User, Restaurant, Menu, Order, MenuItem, Payment, DeliveryPersonnel (7)
- $Avg = (15 + 8)/2 = 11.5$
- $SR = 7/11.5 = 0.609 \rightarrow Scale = 3$

Claude & Copilot

- Claude: User, Customer, RestaurantOwner, DeliveryDriver, Restaurant, Menu, MenuItem, Order, OrderItem, Payment, Review, Promotion (12)
- Copilot: User, Restaurant, Menu Item, Order, Customization Option, Notification, Delivery Personnel, Loyalty Program, System (9)
- Common: User, Restaurant, MenuItem, Order, DeliveryDriver, Promotion (6)
- $Avg = (12 + 9)/2 = 10.5$
- $SR = 6/10.5 = 0.571 \rightarrow Scale = 3$

Claude & Gemini

- Claude: User, Customer, RestaurantOwner, DeliveryDriver, Restaurant, Menu, MenuItem, Order, OrderItem, Payment, Review, Promotion (12)
- Gemini: Customer, Restaurant, Menu Item, Order, Payment Method (5)
- Common: User, Restaurant, MenuItem, Order, Payment (5)
- $Avg = (12 + 5)/2 = 8.5$
- $SR = 5/8.5 = 0.588 \rightarrow Scale = 3$

Claude & Meta

- Claude: User, Customer, RestaurantOwner, DeliveryDriver, Restaurant, Menu, MenuItem, Order, OrderItem, Payment, Review, Promotion (12)
- Meta: User, Restaurant, Menu, Order, OrderItem, MenuItem, Payment, DeliveryPersonnel (8)
- Common: User, Restaurant, Menu, MenuItem, Order, Payment, DeliveryDriver (7)
- $Avg = (12 + 8)/2 = 10.0$
- $SR = 7/10.0 = 0.7 \rightarrow Scale = 4$

Copilot & Gemini

- Copilot: User, Restaurant, Menu Item, Order, Customization Option, Notification, Delivery Personnel, Loyalty Program, System (9)
- Gemini: Customer, Restaurant, Menu Item, Order, Payment Method (5)
- Common: User, Restaurant, MenuItem, Order (4)
- $Avg = (9 + 5)/2 = 7$
- $SR = 4/7 = 0.571 \rightarrow Scale = 3$

Copilot & Meta

- Copilot: User, Restaurant, Menu Item, Order, Customization Option, Notification, Delivery Personnel, Loyalty Program, System (9)
- Meta: User, Restaurant, Menu, Order, OrderItem, MenuItem, Payment, DeliveryPersonnel (8)
- Common: User, Restaurant, MenuItem, Order, Delivery Personnel, (5)
- $Avg = (9 + 8)/2 = 8.5$
- $SR = 5/8.5 = 0.588 \rightarrow Scale = 3$

Gemini & Meta

- Gemini: Customer, Restaurant, Menu Item, Order, Payment Method (5)
- Meta: User, Restaurant, Menu, Order, OrderItem, MenuItem, Payment, DeliveryPersonnel (8)
- Common: User, Restaurant, MenuItem, Order, Payment (5)
- $Avg = (5 + 8)/2 = 6.5$
- $SR = 5/6.5 = 0.769 \rightarrow Scale = 4$

P5: Identify system operations from use case

Model	Operations	Count
ChatGPT	displayAvailableMenus(), displayReviews(restaurantID, dishID), displayCustomizationOptions(itemID), saveCustomizedOrder(userID, orderDetails), createOrder(userID, orderDetails), confirmOrderPayment(orderID, paymentDetails), fetchOrderStatus(orderID), updateOrderStatus(orderID, status), sendOrderNotification(userID, orderID, message), processPayment(orderID, paymentDetails), createPromotion(promotionDetails), updatePromotion(promotionID, promotionDetails), deletePromotion(promotionID), enrollInLoyaltyProgram(userID), updateLoyaltyPoints(userID, points), generateRecommendations(userID), updateAccountDetails(userID, accountDetails), changeOrderStatus(orderID, status), addMenuItem(restaurantID, menuItemDetails), updateMenuItem(itemID, menuItemDetails), deleteMenuItem(itemID), manageUserAccounts(adminID, userAccountDetails), manageSecuritySettings(adminID, securitySettings), monitorSystemPerformance(adminID)	24
Claude	browseMenu(), addItemToCart(menuItem, quantity), removeItemFromCart(menuItem), updateCartQuantity(menuItem, newQuantity), calculateTotalPrice(), setDeliveryAddress(address), selectPaymentMethod(paymentMethod), validateOrder(), processPayment(amount, paymentMethod), confirmOrder(orderDetails), generateOrderNumber(), notifyRestaurant(orderDetails), retrieveOrderStatus(orderID), getEstimatedDeliveryTime(orderID), getDeliveryPersonLocation(orderID), displayTrackingInformation(orderID), contactSupport(orderID), contactDeliveryPerson(orderID), displayOrderList(restaurantID, orderStatus), getOrderDetails(orderID), acceptOrder(orderID), rejectOrder(orderID, reason), updateOrderStatus(orderID, newStatus), markOrderReady(orderID), assignDeliveryDriver(orderID, driverID), notifyCustomer(orderID, message), initiateRefund(orderID), modifyOrder(orderID, modifications), registerUser(userDetails), loginUser(credentials), updateUserProfile(userID, newDetails), createRestaurantProfile(restaurantDetails), updateRestaurantProfile(restaurantID, newDetails), addMenuItem(restaurantID, menuItemDetails), removeMenuItem(restaurantID, menuItemID), updateMenuItem(restaurantID, menuItemID, newDetails), submitReview(customerID, restaurantID, rating, comment), getRestaurantRating(restaurantID), displayReviews(restaurantID), createPromotion(promotionDetails), applyPromotion(orderID, promotionID), calculateLoyaltyPoints(orderID), redeemLoyaltyPoints(customerID, points), generateSalesReport(restaurantID, dateRange), generateCustomerActivityReport(dateRange), generatePopularItemsReport(restaurantID, dateRange)	46
Copilot	Display restaurant menus and reviews, Modify order details, Process user's order, Provide real-time order status, Send notifications to users, Allow users to update personal information, Manage menu items and process orders, Handle order deliveries	8
Gemini	Customer Registration, Login, Update Profile, Browse Restaurants, Search Restaurants, View Menu, Add Item to Cart, Customize Order, Select Delivery/Pickup, View Order Summary, Select Payment Method, Submit Payment, Track Order, View Order History, Rate and Review, Restaurant Registration, Edit Restaurant Profile, Manage Menu, Set Delivery Areas, View Orders, Manage Delivery, Order Management, Payment Processing, Push Notifications, Data Storage, Security, Managing Promotions, Loyalty Programs, In-App Chat	27
Meta	login(), browseMenus(), searchRestaurants(), viewRestaurantDetails(), placeOrder(), customizeOrder(), viewOrderStatus(), makePayment(), viewOrderHistory(), rateAndReviewRestaurant(), addMenuItems(), updateMenu(), receiveOrder(), updateOrderStatus(), confirmOrder(), manageRestaurants(), manageMenuItems(), manageOrders(), managePayments(), manageDeliveryPersonnel(), acceptOrder(), updateOrderStatus(), deliverOrder()	23

Pair of Models	Common Operations	Count
ChatGPT - Claude	Display/Browse Menu, Display Reviews, Create/Confirm Order, Process Payment, Fetch/Retrieve Order Status, Update Order Status, Send Notification, Create Promotion, Loyalty Program Management, Generate Recommendations, Update Account Details, Add Menu Item, Update Menu Item, Delete/Remove Menu Item, User Registration/Management	15
ChatGPT - Copilot	displayAvailableMenus() / Display restaurant menus, saveCustomizedOrder() / Modify order details, createOrder() / Process user's order, fetchOrderStatus() / Provide real-time order status, sendOrderNotification() / Send notifications to users, updateAccountDetails() / Allow users to update personal information, addMenuItem() / Manage menu items	7
ChatGPT - Gemini	displayAvailableMenus() / Browse Restaurants, displayReviews() / View Menu, displayCustomizationOptions() / Customize Order, saveCustomizedOrder() / Customize Order, createOrder() / Submit Payment, confirmOrderPayment() / Submit Payment, fetchOrderStatus() / Track Order, sendOrderNotification() / Push Notifications, processPayment() / Payment Processing, createPromotion() / Managing Promotions, updatePromotion() / Managing Promotions, deletePromotion() / Managing Promotions, enrollInLoyaltyProgram() / Loyalty Programs, updateLoyaltyPoints() / Loyalty Programs, generateRecommendations() / Data Storage, updateAccountDetails() / Update Profile, changeOrderStatus() / Manage Delivery, addMenuItem() / Manage Menu, updateMenuItem() / Manage Menu, deleteMenuItem() / Manage Menu, manageUserAccounts() / Customer Registration, manageSecuritySettings() / Security	22
ChatGPT - Meta	displayAvailableMenus() / browseMenus(), createOrder() / placeOrder(), confirmOrderPayment() / makePayment(), fetchOrderStatus() / viewOrderStatus(), displayReviews() / viewRestaurantDetails(), sendOrderNotification() / send notifications, updateMenuItem() / updateMenu(), deleteMenuItem() / removeMenuItem(), manageUserAccounts() / manageUsers, manageSecuritySettings() / manageSecurity, monitorSystemPerformance() / monitorPerformance, customizeOrder() / customizeOrder(), rateAndReviewRestaurant() / rateAndReviewRestaurant()	13
Claude - Copilot	browseMenu() / Display restaurant menus, addItemToCart(menuItem, quantity) / Modify order details, processPayment(amount, paymentMethod) / Process user's order, retrieveOrderStatus(orderID) / Provide real-time order status, notifyCustomer(orderID, message) / Send notifications to users, updateUserProfile(userID, newDetails) / Allow users to update personal information, updateMenuItem(restaurantID, menuItemID, newDetails) / Manage menu items	7
Claude - Gemini	browseMenu() / Browse Restaurants, addItemToCart(menuItem, quantity) / Add Item to Cart, removeItemFromCart(menuItem) / Remove Item from Cart, updateCartQuantity(menuItem, newQuantity) / Update Cart Quantity, calculateTotalPrice() / Calculate Total Price, setDeliveryAddress(address) / Select Delivery/Pickup, selectPaymentMethod(paymentMethod) / Select Payment Method, processPayment(amount, paymentMethod) / Payment Processing, confirmOrder(orderDetails) / Submit Payment, retrieveOrderStatus(orderID) / Track Order, notifyCustomer(orderID, message) / Push Notifications, registerUser(userDetails) / Customer Registration, loginUser(credentials) / Login, updateUserProfile(userID, newDetails) / Update Profile, createRestaurantProfile(restaurantDetails) / Restaurant Registration, updateRestaurantProfile(restaurantID, newDetails) / Edit Restaurant Profile, addMenuItem(restaurantID, menuItemDetails) / Manage Menu, removeMenuItem(restaurantID, menuItemID) / Manage Menu, updateMenuItem(restaurantID, menuItemID, newDetails) / Manage Menu, submitReview(customerID, restaurantID, rating, comment) / Rate and Review, createPromotion(promotionDetails) / Managing Promotions, applyPromotion(orderID, promotionID) / Managing Promotions, calculateLoyaltyPoints(orderID) / Loyalty Programs, generateSalesReport(restaurantID, dateRange) / Data Storage	24
Claude - Meta	browseMenu() / browseMenus(), addItemToCart(menuItem, quantity) / addMenuItems(), processPayment(amount, paymentMethod) / makePayment(), retrieveOrderStatus(orderID) / viewOrderStatus(), displayReviews(restaurantID) / viewRestaurantDetails(), updateMenuItem(restaurantID, menuItemID, newDetails) / updateMenu(), updateOrderStatus(orderID, newStatus) / updateOrderStatus(), registerUser(userDetails) / login(), loginUser(credentials) / login(), updateUserProfile(userID, newDetails) / updateUserProfile()	10
Copilot - Gemini	Display restaurant menus and reviews / Browse Restaurants, Modify order details / Customize Order, Process user's order / Submit Payment, Provide real-time order status / Track Order, Send notifications to users / Push Notifications, Allow users to update personal information / Update Profile, Manage menu items and process orders / Manage Menu, Handle order deliveries / Manage	8
Copilot - Meta	Display restaurant menus and reviews / browseMenus(), Modify order details / customizeOrder(), Process user's order / placeOrder(), Provide real-time order status / viewOrderStatus(), Send notifications to users / send notifications, Allow users to update personal information / updateUserProfile(), Manage menu items and process orders / updateMenuItems()	7
Gemini - Meta	Customer Registration / login(), Login / login(), Update Profile / updateUserProfile(), Browse Restaurants / browseMenus(), View Menu / viewRestaurantDetails(), Add Item to Cart / addMenuItems(), Customize Order / customizeOrder(), Submit Payment / makePayment(), Track Order / viewOrderStatus(), Rate and Review / rateAndReviewRestaurant(), Restaurant Registration / manageRestaurants(), Manage Menu / updateMenu(), Manage Delivery / updateOrderStatus(), Order Management / manageOrders(), Payment Processing / managePayments(), Push Notifications / send notifications, Security / manageSecurity, Data Storage / storeData	18

ChatGPT & Claude

- ChatGPT: 24
- Claude: 46
- Common: 15
- $\text{Avg} = (24 + 46)/2 = 35$
- $\text{SR} = 15/35 = 0.429 \rightarrow \text{Scale} = 2$

ChatGPT & Copilot

- ChatGPT: 24
- Copilot: 8
- Common: 7
- $\text{Avg} = (24 + 8)/2 = 16$
- $\text{SR} = 7/16 = 0.438 \rightarrow \text{Scale} = 2$

ChatGPT & Gemini

- ChatGPT: 24
- Gemini: 27
- Common: 22
- $\text{Avg} = (24 + 27)/2 = 25.5$
- $\text{SR} = 22/25.5 = 0.863 \rightarrow \text{Scale} = 4$

ChatGPT & Meta

- ChatGPT: 24
- Meta: 23
- Common: 13
- $\text{Avg} = (24 + 23)/2 = 23.5$
- $\text{SR} = 13/23.5 = 0.553 \rightarrow \text{Scale} = 3$

Claude & Copilot

- Claude: 46
- Copilot: 8
- Common: 7
- $\text{Avg} = (46 + 8)/2 = 27$
- $\text{SR} = 7/27 = 0.259 \rightarrow \text{Scale} = 1$

Claude & Gemini

- Claude: 46
- Gemini: 27
- Common: 24
- $\text{Avg} = (46 + 27)/2 = 36.5$
- $\text{SR} = 24/36.5 = 0.658 \rightarrow \text{Scale} = 3$

Claude & Meta

- Claude: 46
- Meta: 23
- Common: 10
- $\text{Avg} = (46 + 23)/2 = 34.5$
- $\text{SR} = 10/34.5 = 0.29 \rightarrow \text{Scale} = 1$

Copilot & Gemini

- Copilot: 8
- Gemini: 27
- Common: 8
- $\text{Avg} = (8 + 27)/2 = 17.5$
- $\text{SR} = 8/17.5 = 0.457 \rightarrow \text{Scale} = 2$

Copilot & Meta

- Copilot: 8
- Meta: 23
- Common: 7
- $\text{Avg} = (8 + 23)/2 = 15.5$
- $\text{SR} = 7/15.5 = 0.452 \rightarrow \text{Scale} = 2$

Gemini & Meta

- Gemini: 27
- Meta: 23
- Common: 18
- $\text{Avg} = (27 + 23)/2 = 25$
- $\text{SR} = 18/25 = 0.72 \rightarrow \text{Scale} = 4$

P6: Create design sequence diagrams for system operations

Model	Participants	Sequence of Operations
ChatGPT	User, System, Order, PaymentGateway	1. User initiates order. 2. System requests order creation. 3. Order returns details. 4. System displays summary. 5. User confirms payment. 6. Payment processed. 7. System updates order status. 8. System displays confirmation.
Claude	Customer, OrderController, ShoppingCart, PaymentGateway, Order, Restaurant	1. Customer places order. 2. Controller calculates price. 3. Payment processed. 4. Controller creates order and notifies restaurant. 5. Restaurant acknowledges. 6. Controller confirms order to customer.
Copilot	User, System, Payment Gateway	1. User confirms order. 2. System processes payment. 3. Payment confirmation received. 4. System confirms order to user.
Gemini	Customer, Web Application, Order Service, Payment Gateway	1. Customer adds items and selects options. 2. Application sends order to Service. 3. Service creates order record. 4. Payment processed. 5. Service sends confirmation. 6. Application notifies customer.
Meta	User, System, Restaurant	1. User places order with System. 2. System sends order to Restaurant. 3. Restaurant confirms order. 4. System displays order confirmation to User.

Model Pair	Common Participants	Common Sequences
ChatGPT & Claude	User, PaymentGateway	Place order, Payment processed, Order creation, Confirmation
ChatGPT & Copilot	User, System, PaymentGateway	Order initiation, Payment confirmation, Payment processed, Order confirmation
ChatGPT & Gemini	User, Order Service, PaymentGateway	Order initiation, Order creation, Payment processed, confirmation
ChatGPT & Meta	User, System	User initiates order, order confirmation
Claude & Copilot	User, PaymentGateway	order initiation, Payment processed, order confirmation
Claude & Gemini	Customer, Order Service, Payment Gateway	Order initiation, Order creation, Payment processed, confirmation
Claude & Meta	User, Restaurant	order initiation, order sent to restaurant, restaurant confirmation, order confirmation
Copilot & Gemini	User, Payment Gateway	order initiation, Payment processed, order confirmation
Copilot & Meta	User, System	User initiates process, System confirms order to user
Gemini & Meta	User	order initiation, order confirmation

ChatGPT & Claude

- ChatGPT: $4+8 = 12$
- Claude: $6+6 = 12$
- Common: $2+4 = 6$
- Avg = $(12 + 12)/2 = 12$
- SR = $6/12 = 0.5 \rightarrow \text{Scale} = 3$

ChatGPT & Copilot

- ChatGPT: $4+8 = 12$
- Copilot: $4+4=8$
- Common: $3+4=7$
- Avg = $(12 + 8)/2 = 10$
- SR = $7/10 = 0.7 \rightarrow$ Scale = 4

ChatGPT & Gemini

- ChatGPT: $4+8 = 12$
- Gemini: $4+6=10$
- Common: $3+4=7$
- Avg = $(12 + 10)/2 = 11$
- SR = $7/11 = 0.636 \rightarrow \text{Scale} = 3$

ChatGPT & Meta

- ChatGPT: $4+8 = 12$
- Meta: $3+4=7$
- Common: $2+2=4$
- Avg = $(12 + 7)/2 = 9.5$
- SR = $4/9.5 = 0.421 \rightarrow \text{Scale} = 2$

Claude & Copilot

- Claude: $6+6 = 12$
- Copilot: $4+4=8$
- Common: $2+3=5$
- Avg = $(12 + 8)/2 = 10$
- SR = $5/10 = 0.5 \rightarrow \text{Scale} = 3$

Claude & Gemini

- Claude: $6+6 = 12$
- Gemini: $4+6=10$
- Common: $3+4=7$
- Avg = $(12 + 10)/2 = 11$
- SR = $7/11 = 0.636 \rightarrow \text{Scale} = 3$

Claude & Meta

- Claude: $6+6 = 12$
- Meta: $3+4=7$
- Common: $2+4=6$
- $\text{Avg} = (12 + 7)/2 = 9.5$
- $\text{SR} = 6/9.5 = 0.632 \rightarrow \text{Scale} = 3$

Copilot & Gemini

- Copilot: $4+4=8$
- Gemini: $4+6=10$
- Common: $2+3=5$
- $\text{Avg} = (8 + 10)/2 = 9$
- $\text{SR} = 5/9 = 0.556 \rightarrow \text{Scale} = 3$

Copilot & Meta

- Copilot: $4+4=8$
- Meta: $3+4=7$
- Common: $2+2=4$
- $\text{Avg} = (8 + 7)/2 = 7.5$
- $\text{SR} = 4/7.5 = 0.533 \rightarrow \text{Scale} = 3$

Gemini & Meta

- Gemini: $4+6=10$
- Meta: $3+4=7$
- Common: $1+2=3$
- Avg = $(10 + 7)/2 = 8.5$
- SR = $3/8.5 = 0.353 \rightarrow \text{Scale} = 2$

P7: Create design class diagrams based on the domain model and sequence diagrams.

Model	Classes Listed	Count
ChatGPT	User , Account, LoyaltyProgram, Recommendation, Notification, Restaurant , Menu, MenuItem, Promotion, Review, Order , OrderStatus, Payment , DeliveryPerson, SystemAdministrator, PerformanceMonitor, Security	17
Claude	User (Abstract), Customer, RestaurantOwner, DeliveryDriver, Restaurant , Menu, MenuItem, Order , OrderItem, Payment , Review, Promotion, OrderController, RestaurantController, PaymentGateway	15
Copilot	User , Restaurant , MenuItem, Order , Customization Option, Notification, Delivery Personnel, Loyalty Program, System	9
Gemini	Customer, Restaurant , Order Service, Payment Gateway, Web App (UI), Restaurant App (UI), Database, Delivery Driver (optional)	8
Meta	User , Restaurant , Order , Payment , DeliveryPersonnel	5

ChatGPT & Claude

- ChatGPT: Account, LoyaltyProgram, Recommendation, Notification, Review, OrderStatus, DeliveryPerson, SystemAdministrator, PerformanceMonitor, Security (17)
- Claude: User (Abstract), Customer, RestaurantOwner, DeliveryDriver, Restaurant, Menu, MenuItem, Order, OrderItem, Payment, Review, Promotion, OrderController, RestaurantController, PaymentGateway (15)
- Common: User, Restaurant, Menu, MenuItem, Order, Payment, Review, Promotion (8)
- $\text{Avg} = (17 + 15)/2 = 16.0$
- $\text{SR} = 8/16 = 0.5 \rightarrow \text{Scale} = 3$

ChatGPT & Copilot

- ChatGPT: User, Account, LoyaltyProgram, Recommendation, Notification, Restaurant, Menu, MenuItem, Promotion, Review, Order, OrderStatus, Payment, DeliveryPerson, SystemAdministrator, PerformanceMonitor, Security (17)
- Copilot: User, Restaurant, MenuItem, Order, Customization Option, Notification, Delivery Personnel, Loyalty Program, System (9)
- Common: User, Restaurant, MenuItem, Order, Notification, Delivery Personnel, Loyalty Program (7)
- $\text{Avg} = (17 + 9)/2 = 13.0$
- $\text{SR} = 7/13 = 0.538 \rightarrow \text{Scale} = 3$

ChatGPT & Gemini

- ChatGPT: User, Account, LoyaltyProgram, Recommendation, Notification, Restaurant, Menu, MenuItem, Promotion, Review, Order, OrderStatus, Payment, DeliveryPerson, SystemAdministrator, PerformanceMonitor, Security (17)
- Gemini: Customer, Restaurant, Order Service, Payment Gateway, Web App (UI), Restaurant App (UI), Database, Delivery Driver (optional) (8)
- Common: User, Restaurant, Order, Payment, Delivery Driver (5)
- $\text{Avg} = (17 + 8)/2 = 12.5$
- $\text{SR} = 5/12.5 = 0.4 \rightarrow \text{Scale} = 2$

ChatGPT & Meta

- ChatGPT: User, Account, LoyaltyProgram, Recommendation, Notification, Restaurant, Menu, MenuItem, Promotion, Review, Order, OrderStatus, Payment, DeliveryPerson, SystemAdministrator, PerformanceMonitor, Security (17)
- Meta: User, Restaurant, Order, Payment, DeliveryPersonnel (5)
- Common: User, Restaurant, Order, Payment, DeliveryPerson (5)
- $\text{Avg} = (17 + 5)/2 = 11.0$
- $\text{SR} = 5/11.0 = 0.455 \rightarrow \text{Scale} = 2$

Claude & Copilot

- Claude: User (Abstract), Customer, RestaurantOwner, DeliveryDriver, Restaurant, Menu, MenuItem, Order, OrderItem, Payment, Review, Promotion, OrderController, RestaurantController, PaymentGateway (15)
- Copilot: User, Restaurant, MenuItem, Order, Customization Option, Notification, Delivery Personnel, Loyalty Program, System (9)
- Common: User, Restaurant, MenuItem, Order, Delivery Personnel (5)
- $Avg = (15 + 9)/2 = 12.0$
- $SR = 5/12.0 = 0.417 \rightarrow Scale = 2$

Claude & Gemini

- Claude: User (Abstract), Customer, RestaurantOwner, DeliveryDriver, Restaurant, Menu, MenuItem, Order, OrderItem, Payment, Review, Promotion, OrderController, RestaurantController, PaymentGateway (15)
- Gemini: Customer, Restaurant, Order Service, Payment Gateway, Web App (UI), Restaurant App (UI), Database, Delivery Driver (optional) (8)
- Common: Customer, Restaurant, Order, Payment Gateway, Delivery Driver (5)
- $\text{Avg} = (15 + 8)/2 = 11.5$
- $\text{SR} = 5/11.5 = 0.435 \rightarrow \text{Scale} = 2$

Claude & Meta

- Claude: User (Abstract), Customer, RestaurantOwner, DeliveryDriver, Restaurant, Menu, MenuItem, Order, OrderItem, Payment, Review, Promotion, OrderController, RestaurantController, PaymentGateway (15)
- Meta: User, Restaurant, Order, Payment, DeliveryPersonnel (5)
- Common: User, Restaurant, Order, Payment, Delivery Personnel (5)
- $\text{Avg} = (15 + 5)/2 = 10.0$
- $\text{SR} = 5/10.0 = 0.5 \rightarrow \text{Scale} = 3$

Copilot & Gemini

- Copilot: User, Restaurant, MenuItem, Order, Customization Option, Notification, Delivery Personnel, Loyalty Program, System (9)
- Gemini: Customer, Restaurant, Order Service, Payment Gateway, Web App (UI), Restaurant App (UI), Database, Delivery Driver (optional) (8)
- Common: User, Restaurant, Order, Delivery Personnel (4)
- $\text{Avg} = (9 + 8)/2 = 8.5$
- $\text{SR} = 4/8.5 = 0.471 \rightarrow \text{Scale} = 2$

Copilot & Meta

- Copilot: User, Restaurant, MenuItem, Order, Customization Option, Notification, Delivery Personnel, Loyalty Program, System (9)
- Meta: User, Restaurant, Order, Payment, DeliveryPersonnel (5)
- Common: User, Restaurant, Order, Delivery Personnel (4)
- $\text{Avg} = (9 + 5)/2 = 7.0$
- $\text{SR} = 4/7.0 = 0.571 \rightarrow \text{Scale} = 3$

Gemini & Meta

- Gemini: Customer, Restaurant, Order Service, Payment Gateway, Web App (UI), Restaurant App (UI), Database, Delivery Driver (optional) (8)
- Meta: User, Restaurant, Order, Payment, DeliveryPersonnel (5)
- Common: User, Restaurant, Order, Payment, Delivery Personnel (5)
- $Avg = (8 + 5)/2 = 6.5$
- $SR = 5/6.5 = 0.769 \rightarrow Scale = 4$

P8: Develop a Java Implementation for the system as specified in the class diagram and sequence diagrams

Model	Attributes	Operations	Count
ChatGPT	orderId, userID, restaurantID, status, totalAmount	createOrder, updateOrderStatus, getOrderStatus	5+3=8
Claude	orderId, customerId, restaurantID, items, status, totalPrice, orderDate	updateStatus, addItem, removeItem, calculateTotal	7+4=11
Copilot	orderId, user, restaurant, orderStatus, totalAmount	None	5+0=5
Gemini	id, customer, restaurant, placedDate, status, items, totalPrice	None	7+0=7
Meta	orderId, userId, restaurantId, orderDate, orderStatus, totalCost, orderItems	updateOrderStatus, addOrderItem	7+2=9

Pair	Common Attributes	Common Operations	Count
ChatGPT & Claude	orderId, userID, restaurantID, status, totalPrice	updateOrder, createOrder	5+2=7
ChatGPT & Copilot	orderId, user, restaurant, orderStatus, totalAmount	None	5+0=5
ChatGPT & Gemini	id, customer, restaurant, status, totalPrice	None	5+0=5
ChatGPT & Meta	orderId, userid, restaurantid, status, totalPrice	updateOrderStatus, createOrder	5+2=7
Claude & Copilot	orderId, user, restaurantID, status, total	None	5+0=7
Claude & Gemini	id, customer, restaurant, status, orderData, totalPrice, items	None	7+0=7
Claude & Meta	orderId, userID, restaurantID, date, status, total, items	updateStatus, addItem	7+2=9
Copilot & Gemini	orderid, user, restaurant, status, total	None	5+0=5
Copilot & Meta	orderId, customer, restaurant, status, total	None	5+0=5
Gemini & Meta	id, customer, restaurant, date, status, items, total	None	7+0=7

ChatGPT & Claude

- ChatGPT: 8
- Claude: 11
- Common: 7
- $\text{Avg} = (8 + 11)/2 = 9.5$
- $\text{SR} = 7/9.5 = 0.737 \rightarrow \text{Scale} = 4$

ChatGPT & Copilot

- ChatGPT: 8
- Copilot: 5
- Common: 5
- $\text{Avg} = (8 + 5)/2 = 6.5$
- $\text{SR} = 5/6.5 = 0.769 \rightarrow \text{Scale} = 4$

ChatGPT & Gemini

- ChatGPT: 8
- Gemini: 7
- Common: 5
- $\text{Avg} = (8 + 7)/2 = 7.5$
- $\text{SR} = 5/7.5 = 0.667 \rightarrow \text{Scale} = 3$

ChatGPT & Meta

- ChatGPT: 8
- Meta: 9
- Common: 7
- $\text{Avg} = (8 + 9)/2 = 8.5$
- $\text{SR} = 7/8.5 = 0.824 \rightarrow \text{Scale} = 4$

Claude & Copilot

- Claude: 11
- Copilot: 5
- Common: 7
- $\text{Avg} = (11 + 5)/2 = 8$
- $\text{SR} = 7/8 = 0.875 \rightarrow \text{Scale} = 4$

Claude & Gemini

- Claude: 11
- Gemini: 7
- Common: 7
- $\text{Avg} = (11 + 7)/2 = 9$
- $\text{SR} = 7/9 = 0.778 \rightarrow \text{Scale} = 4$

Claude & Meta

- Claude: 11
- Meta: 9
- Common: 9
- $\text{Avg} = (11 + 9)/2 = 10$
- $\text{SR} = 9/10 = 0.9 \rightarrow \text{Scale} = 5$

Copilot & Gemini

- Copilot: 5
- Gemini: 7
- Common: 5
- $\text{Avg} = (5 + 7)/2 = 6$
- $\text{SR} = 5/6 = 0.833 \rightarrow \text{Scale} = 4$

Copilot & Meta

- Copilot: 5
- Meta: 9
- Common: 5
- $\text{Avg} = (5 + 9)/2 = 7$
- $\text{SR} = 5/7 = 0.714 \rightarrow \text{Scale} = 4$

Gemini & Meta

- Gemini: 7
- Meta: 9
- Common: 7
- $\text{Avg} = (7 + 9)/2 = 8$
- $\text{SR} = 7/8 = 0.875 \rightarrow \text{Scale} = 4$

P9: Develop tests including unit tests, integration tests, and system tests for the implementation.

Model	Involved Methods	Count
ChatGPT	manageMenu, placeOrder, manageOrderStatus, trackOrder, makePayment	5
Claude	login, browseRestaurants, viewMenu, placeOrder, getNewOrders, acceptOrder, updateOrderStatus, trackOrder, completeDelivery, getOrderDetails, submitReview	11
Copilot	Browsing menus, Customizing orders, Placing orders, Tracking delivery	4
Gemini	Browsing restaurants, User registration and login, Order placement, Order confirmation and status updates, Notification handling	5
Meta	placeOrder, viewOrderStatus, makePayment, orderDelivery	4

Model Pair	Common Methods	Count
ChatGPT & Claude	viewMenu, placeOrder, manageOrderStatus, trackOrder	4
ChatGPT & Copilot	manageMenu, placeOrder, trackOrder	3
ChatGPT & Gemini	manageMenu, placeOrder, orderStatus	3
ChatGPT & Meta	placeOrder, viewOrderStatus, makePayment	3
Claude & Copilot	Browsing menus, placeOrder, trackOrder	3
Claude & Gemini	User registration and login, browse restaurant, place order, order status	4
Claude & Meta	placeOrder, order status, delivery	3
Copilot & Gemini	Browsing menus, place order, order status	3
Copilot & Meta	place order, delivery	2
Gemini & Meta	placeOrder, order status	2

ChatGPT & Claude

- ChatGPT: 5
- Claude: 11
- Common: 4
- $\text{Avg} = (5 + 11)/2 = 8$
- $\text{SR} = 4/8 = 0.5 \rightarrow \text{Scale} = 3$

ChatGPT & Copilot

- ChatGPT: 5
- Copilot: 4
- Common: 3
- $\text{Avg} = (5 + 4)/2 = 4.5$
- $\text{SR} = 3/4.5 = 0.667 \rightarrow \text{Scale} = 3$

ChatGPT & Gemini

- ChatGPT: 5
- Gemini: 5
- Common: 3
- $\text{Avg} = (5 + 5)/2 = 5$
- $\text{SR} = 3/5 = 0.6 \rightarrow \text{Scale} = 3$

ChatGPT & Meta

- ChatGPT: 5
- Meta: 4
- Common: 3
- $\text{Avg} = (5 + 4)/2 = 4.5$
- $\text{SR} = 3/4.5 = 0.667 \rightarrow \text{Scale} = 3$

Claude & Copilot

- Claude: 11
- Copilot: 4
- Common: 3
- $\text{Avg} = (11 + 4)/2 = 7.5$
- $\text{SR} = 3/7.5 = 0.4 \rightarrow \text{Scale} = 2$

Claude & Gemini

- Claude: 11
- Gemini: 5
- Common: 4
- $\text{Avg} = (11 + 5)/2 = 8$
- $\text{SR} = 4/8 = 0.5 \rightarrow \text{Scale} = 3$

Claude & Meta

- Claude: 11
- Meta: 4
- Common: 3
- $\text{Avg} = (11 + 4)/2 = 7.5$
- $\text{SR} = 3/7.5 = 0.4 \rightarrow \text{Scale} = 2$

Copilot & Gemini

- Copilot: 4
- Gemini: 5
- Common: 3
- $\text{Avg} = (4 + 5)/2 = 4.5$
- $\text{SR} = 3/4.5 = 0.667 \rightarrow \text{Scale} = 3$

Copilot & Meta

- Copilot: 4
- Meta: 4
- Common: 2
- $Avg = (4 + 4)/2 = 4$
- $SR = 2/4 = 0.5 \rightarrow Scale = 3$

Gemini & Meta

- Gemini: 5
- Meta: 4
- Common: 2
- $\text{Avg} = (5 + 4)/2 = 4.5$
- $\text{SR} = 2/4.5 = 0.444 \rightarrow \text{Scale} = 2$