

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

| Model | Functional Requirements | Non-Functional Requirements |
|---------|--|---|
| ChatGPT | Multi-Cryptocurrency Management, Smart Contract Execution, Automated Transactions, Integration with Decentralized Applications (dApps), Enhanced Security Mechanisms (Multi-Signature Authentication, Social Recovery Options), Customizable Spending Limits, Account Abstraction, Gas Fee Optimization, Batch Transactions. | Usability, Performance, Reliability, Scalability, Security, Interoperability, Maintainability, Availability, Compliance. |
| Claude | Support storage and transfer of multiple cryptocurrencies, Handle various digital assets, Execute cryptocurrency transfers, Display balances, Support batch transactions, Execute smart contract operations, Interact with decentralized applications, Support programmable transactions, Enable automated transaction execution, Implement account abstraction, Implement multi-signature authentication, Provide social recovery mechanisms, Enable setting and enforcement of spending limits, Verify transaction authenticity, Support key management functions, Process cryptocurrency payments, Optimize gas fees, Support transaction scheduling, Enable transaction batching, Provide transaction history and status tracking, Present unified interface for all supported assets, Display real-time asset values, Show transaction status updates, Provide dApp interaction interface, Enable customization of security settings. | Security, Performance, Usability, Reliability, Compatibility, Maintainability, Interoperability, Scalability, Compliance, Recovery, Accessibility |
| Copilot | Digital Asset Storage and Transfer, Smart Contract Execution, Automated Transactions, Interaction with Decentralized Applications, Enhanced Security Features, Account Abstraction, Gas Fee Optimization, Batch Transactions. | Security, Usability, Performance, Reliability, Compatibility, Scalability, Maintainability, Interoperability. |
| Gemini | Payment Functionality (sending/receiving cryptocurrencies, support for various payment methods), Smart Contract Interaction, Security Features (multi-signature authentication, social recovery options, customizable spending limits), Multi-Asset Support, Advanced Features (account abstraction, gas fee optimization, batch transactions). | Security (robust measures, compliance, audits), Performance (fast and reliable transaction processing), Usability (user-friendly interface, clear documentation), Reliability (high availability, fault tolerance), Scalability (handling growing user demand, efficient resource utilization). |
| Meta | Smart Contract Execution, Automated Transactions, Decentralized Application Interaction, Multi-Signature Authentication, Social Recovery Options, Customizable Spending Limits, Multi-Asset Management, Account Abstraction, Gas Fee Optimization, Batch Transactions. | Security, User-Friendliness, Simplification, Interoperability, Scalability, Reliability, Performance. |

Requirements Overlaps

- # of requirements
 - ChatGPT: $9+9=18$
 - Claude: $25+11=36$
 - Copilot: $8+8=16$
 - Gemini: $10+5=15$
 - Meta: $10+7=17$

ChatGPT and Claude

- Common features: 10 (Multi-Cryptocurrency Management, Smart Contract Execution, Automated Transactions, Integration with Decentralized Applications (dApps), Enhanced Security Mechanisms (Multi-Signature Authentication), Enhanced Security Mechanisms (Social Recovery Options), Customizable Spending Limits, Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 8 (Usability, Performance, Reliability, Scalability, Security, Interoperability, Maintainability, Compliance.)
- Average Functions = $(18+36)/2=27$
- Similarity Ratio = $18/27=0.666 \rightarrow$ Score = 3 (Similar)

ChatGPT & Copilot

- Common features: 8 (Smart Contract Execution, Automated Transactions, Integration with Decentralized Applications, Enhanced Security Features (including Multi-Signature Authentication and Social Recovery Options), Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 7 (Security, Performance, Usability, Reliability, Scalability, Maintainability, Interoperability)
- Average Functions : $(18+16)/2=17$
- Similarity Ratio: $15/17=0.882$ -> Score = 4 (Very Similar)

ChatGPT & Gemini

- Common features: 8 (Multi-Cryptocurrency Management, Smart Contract Interaction, Multi-Signature Authentication, Social Recovery Options, Customizable Spending Limits, Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 5 (Security, Performance, Usability, Reliability, Scalability)
- Average Functions: $(18+15)/2=16.5$
- Similarity Ratio: $13/16.5=0.787$ -> Score = 4 (Very Similar)

ChatGPT & Meta

- Common features: 10 (Multi-Asset Management, Smart Contract Execution, Automated Transactions, Integration with Decentralized Applications, Multi-Signature Authentication, Social Recovery Options, Customizable Spending Limits, Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 6 (Security, Performance, Usability, Reliability, Scalability, Interoperability)
- Average Functions: $(18+17)/2=17.5$
- Similarity Ratio: $16/17.5=914 \rightarrow$ Score = 5 (Nearly Identical)

Claude & Copilot

- Common features: 11 (Digital Asset Storage and Transfer, Smart Contract Execution, Automated Transactions, Interaction with Decentralized Applications, Batch Transactions, Multi-Signature Authentication, Social Recovery Options, Customizable Spending Limits, Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 8 (Security, Performance, Usability, Reliability, Scalability, Maintainability, Interoperability, Compatibility)
- Average Functions: $(36+16)/2=26$
- Similarity Ratio: $19/26=0.730 \rightarrow$ Score = 4 (Very Similar)

Claude & Gemini

- Common features: 9 (Transfer of multiple cryptocurrencies, Smart Contract Interaction, Multi-Signature Authentication, Social Recovery Options, Customizable Spending Limits, Multi-Asset Support, Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 5 (Security, Performance, Usability, Reliability, Scalability)
- Average Function: $(36+15)/2=25.5$
- Similarity Ratio: $14/25.5=0.549 \rightarrow$ Score = 3 (Similar)

Claude & Meta

- Common features: 10 (Smart Contract Execution, Automated Transactions, Interaction with Decentralized Applications, Multi-Signature Authentication, Social Recovery Options, Customizable Spending Limits, Multi-Signature Authentication, Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 6 (Security, Performance, Usability, Reliability, Scalability, Interoperability)
- Average Function: $(36+17)/2=26.5$
- Similarity Ratio: $16/26.5=0.603 \rightarrow$ Score = 3 (Similar)

Copilot & Gemini

- Common features: 10 (Digital Asset Storage and Transfer, Smart Contract Execution, Automated Transactions, Interaction with Decentralized Applications, Multi-Signature Authentication, Social Recovery Options, Customizable Spending Limits, Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 5 (Security, Performance, Usability, Reliability, Scalability)
- Average Features: $(16+15)/2=15.5$
- Similarity Ratio: $15/15.5=0.967 \rightarrow$ Score = 5 (Nearly Identical)

Copilot & Meta

- Common features: 9 (Smart Contract Execution, Automated Transactions, Interaction with Decentralized Applications, Multi-Signature Authentication, Social Recovery Options, Customizable Spending Limits, Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 6 (Security, Performance, Usability, Reliability, Scalability, Interoperability)
- Average Features: $(16+17)/2=16.5$
- Similarity Ratio: $15/16.5=0.909 \rightarrow$ Score = 5 (Nearly Identical)

Gemini & Meta

- Common features: 9 (Smart Contract Execution, Automated Transactions, Multi-Signature Authentication, Social Recovery Options, Customizable Spending Limits, Multi-Asset Management, Account Abstraction, Gas Fee Optimization, Batch Transactions)
- Overlaps: 5 (Security, Performance, Usability, Reliability, Scalability)
- Average Function: $(15+17)/2=16$
- Similarity Ratio: $14/16=0.875$ -> Score = 4 (Very Similar)

P2: Create a use case model for the system.

| AI Model | Use Case Names | Count |
|----------|---|-------|
| ChatGPT | 1. Manage Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhanced Security Features, 6. Social Recovery, 7. Optimize Gas Fees, 8. Batch Transactions | 8 |
| Claude | 1. View Balance, 2. Transfer Assets, 3. Setup Multi-Signature, 4. Configure Recovery, 5. Execute Transaction, 6. Batch Transactions, 7. Connect to DApp, 8. Execute Smart Contract | 8 |
| Copilot | 1. Manage Digital Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhance Security, 6. Optimize Gas Fees, 7. Execute Batch Transactions | 7 |
| Gemini | 1. Create Wallet, 2. Fund Wallet, 3. Send Transaction, 4. Interact with Smart Contract, 5. Manage Wallet | 5 |
| Meta | 1. Set Up Smart Wallet, 2. Deposit Cryptocurrency, 3. Execute Smart Contract, 4. Automate Transaction, 5. Interact with dApps, 6. Manage Multiple Assets, 7. Optimize Gas Fees, 8. Recover Account, 9. Set Custom Spending Limits, 10. Perform Batch Transactions | 10 |

ChatGPT & Claude

- ChatGPT: 1. Manage Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhanced Security Features, 6. Social Recovery, 7. Optimize Gas Fees, 8. Batch Transactions
- Claude: 1. View Balance, 2. Transfer Assets, 3. Setup Multi-Signature, 4. Configure Recovery, 5. Execute Transaction, 6. Batch Transactions, 7. Connect to DApp, 8. Execute Smart Contract
- **Common:** Manage Assets, Execute Smart Contracts, Automate Transactions, Interact with dApps, Batch Transactions, Setup Multi-Signature, Configure Recovery (7)
- **Average Function:** $(8+8)/2=8$
- **Similarity Ratio:** $7/8=0.875 \rightarrow \text{Score} = 4$ (Very Similar)

ChatGPT & Copilot

- ChatGPT: 1. Manage Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhanced Security Features, 6. Social Recovery, 7. Optimize Gas Fees, 8. Batch Transactions
- Copilot: 1. Manage Digital Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhance Security, 6. Optimize Gas Fees, 7. Execute Batch Transactions
- **Common:** Manage Assets (related to Manage Digital Assets), Execute Smart Contracts, Automate Transactions, Interact with dApps, Enhance Security, Optimize Gas Fees, Batch Transactions (7)
- **Average Function:** $(8+7)/2=7.5$
- **Similarity Ratio:** $7/7.5=0.933 \rightarrow \text{Score} = 5$ (Nearly Identical)

ChatGPT & Gemini

- ChatGPT: 1. Manage Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhanced Security Features, 6. Social Recovery, 7. Optimize Gas Fees, 8. Batch Transactions
- Gemini: 1. Create Wallet, 2. Fund Wallet, 3. Send Transaction, 4. Interact with Smart Contract, 5. Manage Wallet
- **Common:** Manage Assets (Fund Wallet, Manage Wallet), Automate Transactions, Execute Smart Contracts (4)
- **Average Function:** $(7+5)/2=6$
- **Similarity Ratio:** $4/6=0.666 \rightarrow \text{Score} = 3 \text{ (Similar)}$

ChatGPT & Meta

- ChatGPT: 1. Manage Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhanced Security Features, 6. Social Recovery, 7. Optimize Gas Fees, 8. Batch Transactions
- Meta: 1. Set Up Smart Wallet, 2. Deposit Cryptocurrency, 3. Execute Smart Contract, 4. Automate Transaction, 5. Interact with dApps, 6. Manage Multiple Assets, 7. Optimize Gas Fees, 8. Recover Account, 9. Set Custom Spending Limits, 10. Perform Batch Transactions
- **Common:** Manage Assets (related to Deposit Cryptocurrency, Manage Multiple Assets), Execute Smart Contracts, Automate Transactions, Interact with dApps, Optimize Gas Fees, Batch Transactions (related to Perform Batch Transactions) (6)
- **Average Function:** $(8+10)/2=9$
- **Similarity Ratio:** $6/9=0.666 \rightarrow \text{Score} = 3 \text{ (Similar)}$

Claude & Copilot

- Claude: 1. View Balance, 2. Transfer Assets, 3. Setup Multi-Signature, 4. Configure Recovery, 5. Execute Transaction, 6. Batch Transactions, 7. Connect to DApp, 8. Execute Smart Contract
- Copilot: 1. Manage Digital Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhance Security, 6. Optimize Gas Fees, 7. Execute Batch Transactions
- **Common:** Manage Digital Assets, Execute Smart Contracts, Automate Transactions, Interact with dApps, Enhance Security, Batch Transactions (6)
- **Average Function:** $(8+7)/2=7.5$
- **Similarity Ratio:** $6/7.5=0.8 \rightarrow \text{Score} = 4 \text{ (Very Similar)}$

Claude & Gemini

- Claude: 1. View Balance, 2. Transfer Assets, 3. Setup Multi-Signature, 4. Configure Recovery, 5. Execute Transaction, 6. Batch Transactions, 7. Connect to DApp, 8. Execute Smart Contract
- Gemini: 1. Create Wallet, 2. Fund Wallet, 3. Send Transaction, 4. Interact with Smart Contract, 5. Manage Wallet
- **Common:** Transfer Assets (Fund Wallet, Manage Wallet), Execute Smart Contracts, Execute Transaction, Interact with Smart Contract (related to Execute Smart Contracts) (4)
- **Average Function:** $(8+5)/2=6.5$
- **Similarity Ratio:** $4/6.5=0.615 \rightarrow \text{Score} = 3 \text{ (Similar)}$

Claude & Meta

- Claude: 1. View Balance, 2. Transfer Assets, 3. Setup Multi-Signature, 4. Configure Recovery, 5. Execute Transaction, 6. Batch Transactions, 7. Connect to DApp, 8. Execute Smart Contract
- Meta: 1. Set Up Smart Wallet, 2. Deposit Cryptocurrency, 3. Execute Smart Contract, 4. Automate Transaction, 5. Interact with dApps, 6. Manage Multiple Assets, 7. Optimize Gas Fees, 8. Recover Account, 9. Set Custom Spending Limits, 10. Perform Batch Transactions
- **Common:** Transfer Assets, Configure Recovery, Execute Smart Contracts, Automate Transactions, Interact with dApps, Batch Transactions (related to Perform Batch Transactions) (6)
- **Average Function:** $(8+10)/2=9$
- **Similarity Ratio:** $6/9=0.666 \rightarrow \text{Score} = 3 \text{ (Similar)}$

Copilot & Gemini

- Copilot: 1. Manage Digital Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhance Security, 6. Optimize Gas Fees, 7. Execute Batch Transactions
- Gemini: 1. Create Wallet, 2. Fund Wallet, 3. Send Transaction, 4. Interact with Smart Contract, 5. Manage Wallet
- **Common:** Manage Digital Assets (Fund Wallet, Manage Wallet), Automate Transactions, Interact with Smart Contract (related to Execute Smart Contracts) (4)
- **Average Function:** $(7+5)/2=6$
- **Similarity Ratio:** $4/6=0.666 \rightarrow \text{Score} = 3 \text{ (Similar)}$

Copilot & Meta

- Copilot: 1. Manage Digital Assets, 2. Execute Smart Contracts, 3. Automate Transactions, 4. Interact with dApps, 5. Enhance Security, 6. Optimize Gas Fees, 7. Execute Batch Transactions
- Meta: 1. Set Up Smart Wallet, 2. Deposit Cryptocurrency, 3. Execute Smart Contract, 4. Automate Transaction, 5. Interact with dApps, 6. Manage Multiple Assets, 7. Optimize Gas Fees, 8. Recover Account, 9. Set Custom Spending Limits, 10. Perform Batch Transactions
- **Common:** Manage Assets (related to Manage Multiple Assets), Execute Smart Contracts, Automate Transactions, Interact with dApps, Enhance Security (Recover Account, Set Custom Spending Limits), Optimize Gas Fees, Batch Transactions (related to Perform Batch Transactions) (7)
- **Average Function:** $(7+10)/2=8.5$
- **Similarity Ratio:** $7/8.5=0.823 \rightarrow \text{Score} = 4$ (Very Similar)

Gemini & Meta

- Gemini: 1. Create Wallet, 2. Fund Wallet, 3. Send Transaction, 4. Interact with Smart Contract, 5. Manage Wallet
- Meta: 1. Set Up Smart Wallet, 2. Deposit Cryptocurrency, 3. Execute Smart Contract, 4. Automate Transaction, 5. Interact with dApps, 6. Manage Multiple Assets, 7. Optimize Gas Fees, 8. Recover Account, 9. Set Custom Spending Limits, 10. Perform Batch Transactions
- **Common:** Execute Smart Contracts (Fund Wallet, Manage Wallet), Send Transaction, Interact with Smart Contract (related to Execute Smart Contracts) (4)
- **Average Function:** $(5+10)/2=7.5$
- **Similarity Ratio:** $4/7.5=0.533 \rightarrow \text{Score} = 3 \text{ (Similar)}$

P3: Create use case specifications for identified use cases.

- Manage Asset

| Model | Actors | Preconditions | Main Flow | Alternative Flow | Postconditions | Count |
|---------|--------------|---|--|--|--|--------------|
| ChatGPT | User | 1. User is authenticated. 2. Logged into the smart wallet. 3. Wallet has access to the blockchain network. | 1. User accesses the "Assets" section in the wallet. 2. User views their current portfolio. 3. User selects an asset to send or receive. | 1. Invalid Recipient Address: Error message, prompt to correct. | 1. Assets are managed successfully, with updated balances. | 1+3+3+1+1=9 |
| Claude | Wallet Owner | 1. User has authenticated into the wallet. 2. Wallet has active network connection. 3. User has at least one asset in wallet. | 1. User opens wallet application. 2. System retrieves current blockchain state. 3. System displays balances and value changes. | 1a. Authentication fails: Error and re-authentication. 3a. Network connection fails: Last known balances shown. 4a. Asset price data unavailable: Shows balance in native token. | 1. Current balances are displayed. 2. Transaction history is updated. 3. Asset values are calculated in selected currency. | 1+3+3+3+3=13 |
| Copilot | User | 1. User is authenticated. 2. User has a digital asset account. | 1. User logs into the smart wallet. 2. User selects the type of digital asset to manage. 3. User performs actions like store, transfer, or manage. 4. System confirms and executes the user's actions. | 1. Invalid Authentication: Access denied, prompts for credentials. 2. Insufficient Funds: Alerts user of insufficient funds. | 1. Digital assets are successfully stored, transferred, or managed. | 1+2+3+2+1=9 |
| Gemini | User | 1. User has an existing wallet. | 1. User initiates a fund transfer to their wallet. 2. System processes the transfer and updates the wallet's balance. | 1. Insufficient Funds: Error message displayed. 2. Transfer Failure: Error message displayed. | 1. The user's wallet balance is increased by the deposited amount. 2. A transaction record is created in the database. | 1+1+2+2+2=8 |
| Meta | User | 1. User has a smart wallet set up and a blockchain account with sufficient funds. | 1. User selects the deposit option. 2. User chooses the cryptocurrency to deposit. 3. User confirms the transaction. | 1. User scans a QR code to initiate the deposit. 2. User imports a transaction history from a different platform. | 1. User's smart wallet balance is updated. | 1+1+2+2+1=7 |

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

| Pair | Actors | Preconditions | Basic Flow | Alternative Flows | Postconditions | |
|-------------------|-------------------|--|---|--|---|-------------|
| ChatGPT & Claude | User/Wallet Owner | 1. authenticated, 2 network connected | 1. access wallet, 2. select transfer | 1. invalid address | 1. Balance updated | 1+2+2+1+1=7 |
| ChatGPT & Copilot | User | 1. authenticated | 1. access wallet, 2. select assets | None | 1. Assets updated | 1+1+2+0+1=5 |
| ChatGPT & Gemini | User | None | None | None | 1. Updated balance | 1+0+0+0+1=2 |
| ChatGPT & Meta | User | 1. Access to blockchain | 1. Select asset to send/deposit | None | 1. Updated balance | 1+1+1+0+1=4 |
| Claude & Copilot | Wallet Owner/User | 1. Authenticated, 2. Has asset account | 1. Perform transfer, 2. system confirms | 1. Insufficient funds, 2. transfer failure | 1. Successfully managed | 1+2+2+1+1=7 |
| Claude & Gemini | Wallet Owner/User | 1. has balance | 1. transfer funds, 2. system updates | 1. Insufficient funds | 1. Updated balance, 2. Recorded Transaction | 1+2+1+2+2=8 |
| Claude & Meta | Wallet Owner/User | 1. sufficient balance | 1. select deposit/transfer, 2. select currency, 3. confirms | None | 1. Updated balance | 1+1+3+0+1=6 |
| Copilot & Gemini | User | 1. Having asset account | 1. Perform action, 2. System processes | 1. Insufficient funds | 1. Successfully managed | 1+1+2+1+1=7 |
| Copilot & Meta | User | 1. Having asset account | 1. Choose asset, 2. Perform action, 3. System confirm | None | 1. Updated balance | 1+1+3+0+1=6 |
| Gemini & Meta | User | 1. Having wallet | 1. Select deposit | None | 1. Updated balance | 1+1+1+0+1=4 |

ChatGPT & Claude

- ChatGPT: 9
- Claude: 19
- Common: 7
- $\text{Avg} = (9 + 19)/2 = 14$
- $\text{SR} = 7/14 = 0.5 \rightarrow \text{Scale} = 3$

ChatGPT & Copilot

- ChatGPT: 9
- Copilot: 9
- Common: 5
- $\text{Avg} = (9 + 9)/2 = 9$
- $\text{SR} = 5/9 = 0.555 \rightarrow \text{Scale} = 3$

ChatGPT & Gemini

- ChatGPT: 9
- Gemini: 8
- Common: 2
- $\text{Avg} = (9 + 8)/2 = 8.5$
- $\text{SR} = 2/8.5 = 0.235 \rightarrow \text{Scale} = 1$

ChatGPT & Meta

- ChatGPT: 9
- Meta: 7
- Common: 4
- $\text{Avg} = (9 + 7)/2 = 8$
- $\text{SR} = 4/8 = 0.5 \rightarrow \text{Scale} = 3$

Claude & Copilot

- Claude: 19
- Copilot: 9
- Common: 7
- $\text{Avg} = (19 + 9)/2 = 14$
- $\text{SR} = 7/14 = 0.5 \rightarrow \text{Scale} = 3$

Claude & Gemini

- Claude: 19
- Gemini: 8
- Common: 7
- $\text{Avg} = (19 + 8)/2 = 13.5$
- $\text{SR} = 7/13.5 = 0.518 \rightarrow \text{Scale} = 3$

Claude & Meta

- Claude: 19
- Meta: 7
- Common: 3
- $\text{Avg} = (19 + 7)/2 = 13$
- $\text{SR} = 6/13 = 0.461 \rightarrow \text{Scale} = 2$

Copilot & Gemini

- Copilot: 9
- Gemini: 8
- Common: 7
- $\text{Avg} = (9 + 8)/2 = 8.5$
- $\text{SR} = 7/8.5 = 0.823 \rightarrow \text{Scale} = 4$

Copilot & Meta

- Copilot: 9
- Meta: 7
- Common: 6
- $\text{Avg} = (9 + 7)/2 = 8$
- $\text{SR} = 6/8 = 0.75 \rightarrow \text{Scale} = 4$

Gemini & Meta

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

P4: Create a domain model based on use case specifications

| Model | Classes | Count |
|---------|--|-------|
| ChatGPT | User, Wallet, Asset, SmartContract, Transaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, BatchTransaction | 10 |
| Claude | Wallet, Asset, Transaction, SecuritySettings, MultiSigConfig, RecoveryConfig, SpendingLimit, WalletOwner, DAppConnection, SmartContract, GasFee, TransactionStatus | 12 |
| Copilot | User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction | 8 |
| Gemini | User, Wallet, Transaction, Currency, Amount | 5 |
| Meta | User, Wallet, MultipleAssets, SmartContract, DecentralizedApplication (dApp), DepositAddress, Transaction, Amount, Cryptocurrency | 9 |

ChatGPT & Claude

- ChatGPT: User, Wallet, Asset, SmartContract, Transaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, BatchTransaction (10)
- Claude: Wallet, Asset, Transaction, SecuritySettings, MultiSigConfig, RecoveryConfig, SpendingLimit, WalletOwner, DAppConnection, SmartContract, GasFee, TransactionStatus (12)
- Common: WalletOwner, Wallet, Asset, Transaction, SecuritySettings, SmartContract, dApp, RecoveryContact (8)
- $Avg = (10 + 12)/2 = 11$
- $SR = 8/11 = 0.727 \rightarrow Scale = 4$

ChatGPT & Copilot

- ChatGPT: User, Wallet, Asset, SmartContract, Transaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, BatchTransaction (10)
- Copilot: User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction (8)
- Common: User, Asset, SmartContract, Transaction, dApp, BatchTransaction (6)
- $Avg = (10 + 8)/2 = 9$
- $SR = 6/9 = 0.666 \rightarrow Scale = 3$

ChatGPT & Gemini

- ChatGPT: User, Wallet, Asset, SmartContract, Transaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, BatchTransaction (10)
- Gemini: User, Wallet, Transaction, Currency, Amount (5)
- Common: User, Wallet, Transaction (3)
- $Avg = (10 + 5)/2 = 7.5$
- $SR = 3/7.5 = 0.4 \rightarrow Scale = 2$

ChatGPT & Meta

- ChatGPT: User, Wallet, Asset, SmartContract, Transaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, BatchTransaction (10)
- Meta: User, Wallet, MultipleAssets, SmartContract, DecentralizedApplication (dApp), DepositAddress, Transaction, Amount, Cryptocurrency (9)
- Common: User, Wallet, Asset, SmartContract, Transaction, dApp (5)
- $Avg = (10 + 9)/2 = 8.5$
- $SR = 5/8.5 = 0.588 \rightarrow Scale = 3$

Claude & Copilot

- Claude: Wallet, Asset, Transaction, SecuritySettings, MultiSigConfig, RecoveryConfig, SpendingLimit, WalletOwner, DAppConnection, SmartContract, GasFee, TransactionStatus (12)
- Copilot: User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction (8)
- Common: Asset, Transaction, SecuritySettings, SmartContract, dApp GasFee/GasOptimization (5)
- $Avg = (12 + 8)/2 = 10$
- $SR = 5/10 = 0.5 \rightarrow Scale = 3$

Claude & Gemini

- Claude: Wallet, Asset, Transaction, SecuritySettings, MultiSigConfig, RecoveryConfig, SpendingLimit, WalletOwner, DAppConnection, SmartContract, GasFee, TransactionStatus (12)
- Gemini: User, Wallet, Transaction, Currency, Amount (5)
- Common: Wallet, Transaction (2)
- $Avg = (12 + 5)/2 = 8.5$
- $SR = 2/8.5 = 0.235 \rightarrow Scale = 1$

Claude & Meta

- Claude: Wallet, Asset, Transaction, SecuritySettings, MultiSigConfig, RecoveryConfig, SpendingLimit, WalletOwner, DAppConnection, SmartContract, GasFee, TransactionStatus (12)
- Meta: User, Wallet, MultipleAssets, SmartContract, DecentralizedApplication (dApp), DepositAddress, Transaction, Amount, Cryptocurrency (9)
- Common: Wallet, Asset, Transaction, Dapp, SmartContract (4)
- $Avg = (12 + 9)/2 = 10.5$
- $SR = 4/10.5 = 0.380 \rightarrow Scale = 2$

Copilot & Gemini

- Copilot: User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction (8)
- Gemini: User, Wallet, Transaction, Currency, Amount (5)
- Common: User, Transaction (2)
- $Avg = (8 + 5)/2 = 6.5$
- $SR = 2/6.5 = 0.307 \rightarrow Scale = 2$

Copilot & Meta

- Copilot: User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction (8)
- Meta: User, Wallet, MultipleAssets, SmartContract, DecentralizedApplication (dApp), DepositAddress, Transaction, Amount, Cryptocurrency (9)
- Common: User, DigitalAsset, SmartContract, Transaction, dApp (5)
- $Avg = (8 + 9)/2 = 8.5$
- $SR = 5/8.5 = 0.588 \rightarrow Scale = 3$

Gemini & Meta

- Gemini: User, Wallet, Transaction, Currency, Amount (5)
- Meta: User, Wallet, MultipleAssets, SmartContract, DecentralizedApplication (dApp), DepositAddress, Transaction, Amount, Cryptocurrency (9)
- Common: User, Wallet, Transaction, Amount (4)
- $Avg = (5 + 9)/2 = 7$
- $SR = 4/7 = 0.571 \rightarrow Scale = 3$

P5: Identify system operations from use case specifications

| Model | Operations | Count |
|---------|---|-------|
| ChatGPT | viewAssets, sendAsset, receiveAsset, updateAssetBalance, executeSmartContract, verifyContractExecution, recordContractTransaction, setAutomationRules, triggerAutomatedTransaction, suspendAutomatedTransaction, updateAutomationCriteria, connectToDApp, authorizeDAppPermissions, disconnectFromDApp, recordDAppInteraction, setMultiSignature, setSpendingLimit, authenticateMultiSignature, configureRecoveryContacts, initiateSocialRecovery, notifyRecoveryContacts, approveRecoveryRequest, restoreAccountAccess, analyzeGasFees, applyGasOptimization, suggestTransactionDelay, createBatchTransaction, executeBatchTransaction, verifyBatchTransactionStatus, recordBatchTransaction | 31 |
| Claude | getWalletBalance, transferAssets, estimateGasFee, setupMultiSig, configureRecovery, setSpendingLimits, createTransaction, signTransaction, broadcastTransaction, connectToDApp, executeSmartContract, validateAddress, encryptData, monitorTransactionStatus | 14 |
| Copilot | Authenticate User, Store Digital Assets, Transfer Digital Assets, Retrieve Digital Asset Information, Deploy Smart Contract, Execute Smart Contract, Retrieve Smart Contract Status, Configure Automated Transactions, Execute Automated Transactions, Monitor Automated Transactions, Connect to dApp, Authorize dApp Access, Perform Actions within dApp, Configure Multi-Signature Authentication, Set Up Social Recovery Options, Customize Spending Limits, Calculate Optimal Gas Fees, Apply Gas Fee Optimization, Prepare Batch Transactions, Validate Batch Transactions, Execute Batch Transactions | 21 |
| Gemini | Create Wallet, Fund Wallet, Send Transaction, View Wallet Balance, View Transaction History, Verify User Credentials, Authorize User Actions, Update Wallet Balance, Retrieve Wallet Information, Initiate Transaction, Validate Transaction, Process Transaction, Record Transaction, Deploy Smart Contract, Execute Smart Contract Function, Monitor Smart Contract Events | 17 |
| Meta | createUser, importWallet, restoreWallet, setPassword, setBiometricAuth, createWallet, getWalletBalance, updateWalletSettings, depositAsset, getAssetBalance, transferAsset, executeSmartContract, createSmartContract, getSmartContract, getSmartContractStatus, createTransaction, getTransaction, getTransactionHistory, confirmTransaction, interactWithDapp, getDappList, getDappDetails | 23 |

| Pair of Models | Common Operations | Count |
|-------------------|--|-------|
| ChatGPT - Claude | executeSmartContract, connectToDApp, setupMultiSig, setSpendingLimits, estimateGasFee, createTransaction*, broadcastTransaction* | 7 |
| ChatGPT - Copilot | Execute Smart Contract, Connect to dApp, Authorize dApp Access, Configure Multi-Signature Authentication, Customize Spending Limits, Apply Gas Fee Optimization, Prepare Batch Transactions, Execute Batch Transactions | 8 |
| ChatGPT - Gemini | Send Transaction, View Wallet Balance, Execute Smart Contract Function, Record Transaction, Initiate Transaction*, Process Transaction* | 6 |
| ChatGPT - Meta | getAssetBalance, transferAsset, executeSmartContract, createTransaction, interactWithDapp, getTransactionHistory | 6 |
| Claude - Copilot | Transfer Digital Assets, Calculate Optimal Gas Fees, Configure Multi-Signature Authentication, Set Up Social Recovery Options, Customize Spending Limits, Prepare Batch Transactions, Execute Batch Transactions*, Connect to dApp, Execute Smart Contract | 9 |
| Claude - Gemini | Send Transaction, View Wallet Balance, Initiate Transaction, Process Transaction, Record Transaction, Execute Smart Contract Function, Monitor Smart Contract Events | 7 |
| Claude - Meta | getWalletBalance, transferAsset, createTransaction, confirmTransaction, executeSmartContract, interactWithDapp, getTransactionHistory | 7 |
| Copilot - Gemini | Send Transaction, Execute Smart Contract Function, Deploy Smart Contract, Initiate/Validate/Process Transactions, Monitor Smart Contract Events | 5 |
| Copilot - Meta | transferAsset, executeSmartContract, interactWithDapp, createTransaction, confirmTransaction, getTransactionHistory | 6 |
| Gemini - Meta | createWallet, depositAsset, transferAsset, getWalletBalance, getTransactionHistory, createTransaction, confirmTransaction, executeSmartContract, getSmartContractStatus, interactWithDapp | 10 |

ChatGPT & Claude

- ChatGPT: 31
- Claude: 14
- Common: 7
- $\text{Avg} = (31 + 14)/2 = 22.5$
- $\text{SR} = 7/22.5 = 0.311 \rightarrow \text{Scale} = 2$

ChatGPT & Copilot

- ChatGPT: 31
- Copilot: 21
- Common: 8
- $\text{Avg} = (31 + 21)/2 = 26$
- $\text{SR} = 8/26 = 0.307 \rightarrow \text{Scale} = 2$

ChatGPT & Gemini

- ChatGPT: 31
- Gemini: 17
- Common: 6
- $\text{Avg} = (31 + 17)/2 = 24$
- $\text{SR} = 6/24 = 0.25 \rightarrow \text{Scale} = 1$

ChatGPT & Meta

- ChatGPT: 31
- Meta: 23
- Common: 6
- $\text{Avg} = (31 + 23)/2 = 27$
- $\text{SR} = 6/27 = 0.222 \rightarrow \text{Scale} = 1$

Claude & Copilot

- Claude: 14
- Copilot: 21
- Common: 9
- $\text{Avg} = (14 + 21)/2 = 17.5$
- $\text{SR} = 9/17.5 = 0.514 \rightarrow \text{Scale} = 3$

Claude & Gemini

- Claude: 14
- Gemini: 17
- Common: 7
- $\text{Avg} = (14 + 17)/2 = 15.5$
- $\text{SR} = 7/15.5 = 0.451 \rightarrow \text{Scale} = 2$

Claude & Meta

- Claude: 14
- Meta: 23
- Common: 7
- $\text{Avg} = (14 + 23)/2 = 18.5$
- $\text{SR} = 7/18.5 = 0.378 \rightarrow \text{Scale} = 2$

Copilot & Gemini

- Copilot: 21
- Gemini: 17
- Common: 5
- $\text{Avg} = (21 + 17)/2 = 19$
- $\text{SR} = 5/19 = 0.263 \rightarrow \text{Scale} = 1$

Copilot & Meta

- Copilot: 21
- Meta: 23
- Common: 6
- $\text{Avg} = (21 + 23)/2 = 22$
- $\text{SR} = 6/22 = 0.272 \rightarrow \text{Scale} = 1$

Gemini & Meta

- Gemini: 17
- Meta: 23
- Common: 10
- $\text{Avg} = (17 + 23)/2 = 20$
- $\text{SR} = 10/20 = 0.5 \rightarrow \text{Scale} = 3$

P6: Create design sequence diagrams for system operations

| Model | Participants | Sequence of Operations |
|---------|---|---|
| ChatGPT | User, WalletService, BlockchainNetwork, TransactionService | 1. User initiates sendAsset. 2. WalletService verifies multi-signature. 3. Authentication success. 4. WalletService requests BlockchainNetwork to create transaction. 5. BlockchainNetwork confirms transaction. 6. WalletService records transaction. 7. User receives sendAsset confirmation. |
| Claude | User, WalletInterface, TransactionController, WalletManager, ValidationManager, GasEstimator, BlockchainConnector | 1. User initiates transfer. 2. Transaction is created and validated. 3. Balance checked and gas fee estimated. 4. Transaction details sent to user. 5. User confirms transaction. 6. Transaction executed and broadcast. 7. User receives transaction status. |
| Copilot | User, Smart Wallet, Blockchain Network | 1. User initiates transfer request. 2. Smart Wallet submits transaction to Blockchain Network. 3. Blockchain Network confirms transaction. 4. Smart Wallet provides transaction confirmation to User. |
| Gemini | User, System | 1. User requests to send transaction. 2. System verifies user authentication and checks balance. 3. Transaction initiated and updated. 4. Transaction record created. 5. User receives confirmation message. |
| Meta | User, System | 1. User requests SendAsset. 2. System prompts for details. 3. User provides details. 4. System checks and validates transaction details and balance. 5. Transaction generated and asset balance updated. 6. Transaction record created. 7. User receives transaction status. |

| Model Pair | Common Participants | Common Sequences |
|-------------------|--|---|
| ChatGPT & Claude | User, WalletService, BlockchainNetwork, TransactionService | 1. User initiates transaction. 2. Transaction creation and execution. 3. User receives confirmation. |
| ChatGPT & Copilot | User, SmartWallet, Blockchain Network | 1. User initiates transaction. 2. Transaction is submitted to and confirmed by Blockchain Network. 3. User receives transaction confirmation. |
| ChatGPT & Gemini | User | 1. User initiates transaction. 2. Transaction is created and confirmed. 3. User receives transaction confirmation. |
| ChatGPT & Meta | User | 1. User initiates transaction. 2. Transaction details are validated and confirmed. 3. Transaction is recorded. 4. User receives transaction status. |
| Claude & Copilot | User, SmartWallet | 1. User initiates transaction. 2. Transaction is executed and confirmed by Blockchain Network. 3. User receives transaction status. |
| Claude & Gemini | User | 1. User initiates transaction. 2. Transaction is created and validated. 3. User receives transaction status. |
| Claude & Meta | User | 1. User initiates transaction. 2. Transaction details validated. 3. Transaction executed and status confirmed to user. |
| Copilot & Gemini | User | 1. User initiates transaction. 2. Transaction is processed and confirmed. 3. User receives transaction confirmation. |
| Copilot & Meta | User | 1. User initiates transaction. 2. Transaction details are provided and validated. 3. Transaction is processed and confirmed. 4. User receives transaction status. |
| Gemini & Meta | User, System | 1. User initiates transaction request. 2. System verifies details and checks balance. 3. Transaction is processed and recorded. 4. User receives transaction status/confirmation. |

ChatGPT & Claude

- ChatGPT: $4+7 = 11$
- Claude: $7+7 = 12$
- Common: $4+3 = 7$
- Avg = $(12 + 11)/2 = 11.5$
- SR = $7/11.5 = 0.608 \rightarrow \text{Scale} = 3$

ChatGPT & Copilot

- ChatGPT: $4+7 = 11$
- Copilot: $3+4=7$
- Common: $3+3=6$
- Avg = $(11 + 7)/2 = 9$
- SR = $6/9 = 0.666 \rightarrow \text{Scale} = 3$

ChatGPT & Gemini

- ChatGPT: $4+7 = 11$
- Gemini: $2+5=7$
- Common: $1+3=4$
- Avg = $(11 + 7)/2 = 9$
- SR = $4/9 = 0.444 \rightarrow \text{Scale} = 2$

ChatGPT & Meta

- ChatGPT: $4+7 = 11$
- Meta: $2+7=9$
- Common: $1+4=5$
- $\text{Avg} = (11 + 9)/2 = 10$
- $\text{SR} = 5/10 = 0.5 \rightarrow \text{Scale} = 3$

Claude & Copilot

- Claude: $7+7 = 12$
- Copilot: $3+4=7$
- Common: $2+3=5$
- Avg = $(12 + 7)/2 = 9.5$
- SR = $5/9.5 = 0.526 \rightarrow \text{Scale} = 3$

Claude & Gemini

- Claude: $7+7 = 12$
- Gemini: $2+5=7$
- Common: $1+4=5$
- Avg = $(12 + 7)/2 = 9.5$
- SR = $5/9.5 = 0.526 \rightarrow \text{Scale} = 3$

Claude & Meta

- Claude: $7+7 = 12$
- Meta: $2+7=9$
- Common: $1+3=4$
- $\text{Avg} = (12 + 9)/2 = 10.5$
- $\text{SR} = 4/10.5 = 0.380 \rightarrow \text{Scale} = 2$

Copilot & Gemini

- Copilot: $3+4=7$
- Gemini: $2+5=7$
- Common: $1+3=4$
- $\text{Avg} = (7 + 7)/2 = 7$
- $\text{SR} = 4/7 = 0.571 \rightarrow \text{Scale} = 3$

Copilot & Meta

- Copilot: $3+4=7$
- Meta: $2+7=9$
- Common: $1+5=6$
- $\text{Avg} = (7 + 9)/2 = 8$
- $\text{SR} = 6/8 = 0.75 \rightarrow \text{Scale} = 4$

Gemini & Meta

- Gemini: $2+5=7$
- Meta: $3+4=7$
- Common: $2+4=6$
- $\text{Avg} = (7 + 7)/2 = 7$
- $\text{SR} = 6/7 = 0.857 \rightarrow \text{Scale} = 4$

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

| Model | Classes Listed | Count |
|---------|---|-------|
| ChatGPT | User, Wallet, Asset, SmartContract, Transaction, BatchTransaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, GasOptimizationService, AutomationService, SecurityService, TransactionService | 14 |
| Claude | WalletController, TransactionController, SecurityController, WalletManager, SecurityManager, ValidationManager, Wallet, Transaction, SecuritySettings, BlockchainConnector, ContractManager, GasEstimator, MultiSigConfig, RecoveryConfig, GasFee, IWalletRepository, IBlockchainService, ISecurityService. | 12 |
| Copilot | User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction | 8 |
| Gemini | User, Wallet, Transaction, Currency, Amount | 5 |
| Meta | User, UserManager, Wallet, WalletManager, Asset, AssetManager, SmartContract, SmartContractManager, Transaction, TransactionManager, Dapp, DappManager | 12 |

| Model Pair | Common Classes | Count |
|-------------------|---|-------|
| ChatGPT & Claude | Wallet, Transaction, SecuritySettings, BlockchainConnector, GasEstimator, RecoveryConfig, SecurityService | 7 |
| ChatGPT & Copilot | User, SmartContract, BatchTransaction, dApp, SecuritySettings, GasOptimization | 6 |
| ChatGPT & Gemini | User, Wallet, Transaction | 3 |
| ChatGPT & Meta | User, Wallet, Asset, SmartContract, Transaction, BatchTransaction, dApp | 7 |
| Claude & Copilot | SecuritySettings, GasOptimization, BatchTransaction | 3 |
| Claude & Gemini | Wallet, Transaction | 2 |
| Claude & Meta | Wallet, WalletManager, Transaction, SecuritySettings, SmartContract, SmartContractManager, TransactionManager | 7 |
| Copilot & Gemini | User | 1 |
| Copilot & Meta | User, SmartContract, dApp, Transaction | 4 |
| Gemini & Meta | User, Wallet, Transaction | 3 |

ChatGPT & Claude

- ChatGPT: User, Wallet, Asset, SmartContract, Transaction, BatchTransaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, GasOptimizationService, AutomationService, SecurityService, TransactionService (14)
- Claude: WalletController, TransactionController, SecurityController, WalletManager, SecurityManager, ValidationManager, Wallet, Transaction, SecuritySettings, BlockchainConnector, ContractManager, GasEstimator, MultiSigConfig, RecoveryConfig, GasFee, IWalletRepository, IBlockchainService, ISecurityService. (12)
- Common: Wallet, Transaction, SecuritySettings, BlockchainConnector, GasEstimator, RecoveryConfig, SecurityService (7)
- $\text{Avg} = (14 + 12)/2 = 13$
- $\text{SR} = 7/13 = 0.538 \rightarrow \text{Scale} = 3$

ChatGPT & Copilot

- ChatGPT: User, Wallet, Asset, SmartContract, Transaction, BatchTransaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, GasOptimizationService, AutomationService, SecurityService, TransactionService (14)
- Copilot: User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction (8)
- Common: User, SmartContract, BatchTransaction, dApp, SecuritySettings, GasOptimization (6)
- $\text{Avg} = (14 + 8)/2 = 11$
- $\text{SR} = 6/11 = 0.545 \rightarrow \text{Scale} = 3$

ChatGPT & Gemini

- ChatGPT: User, Wallet, Asset, SmartContract, Transaction, BatchTransaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, GasOptimizationService, AutomationService, SecurityService, TransactionService (14)
- Gemini: User, Wallet, Transaction, Currency, Amount (5)
- Common: User, Wallet, Transaction (3)
- $\text{Avg} = (14 + 5)/2 = 9.5$
- $\text{SR} = 3/9.5 = 0.315 \rightarrow \text{Scale} = 2$

ChatGPT & Meta

- ChatGPT: User, Wallet, Asset, SmartContract, Transaction, BatchTransaction, dApp, SecuritySettings, RecoveryContact, BlockchainNetwork, GasOptimizationService, AutomationService, SecurityService, TransactionService (14)
- Meta: User, UserManager, Wallet, WalletManager, Asset, AssetManager, SmartContract, SmartContractManager, Transaction, TransactionManager, Dapp, DappManager (12)
- Common: User, Wallet, Asset, SmartContract, Transaction, BatchTransaction, dApp (7)
- $\text{Avg} = (14 + 12)/2 = 13$
- $\text{SR} = 7/13 = 0.538 \rightarrow \text{Scale} = 3$

Claude & Copilot

- Claude: WalletController, TransactionController, SecurityController, WalletManager, SecurityManager, ValidationManager, Wallet, Transaction, SecuritySettings, BlockchainConnector, ContractManager, GasEstimator, MultiSigConfig, RecoveryConfig, GasFee, IWalletRepository, IBlockchainService, ISecurityService. (12)
- Copilot: User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction (8)
- Common: SecuritySettings, GasOptimization, BatchTransaction (3)
- $\text{Avg} = (12 + 8)/2 = 10$
- $\text{SR} = 3/10 = 0.3 \rightarrow \text{Scale} = 2$

Claude & Gemini

- Claude: WalletController, TransactionController, SecurityController, WalletManager, SecurityManager, ValidationManager, Wallet, Transaction, SecuritySettings, BlockchainConnector, ContractManager, GasEstimator, MultiSigConfig, RecoveryConfig, GasFee, IWalletRepository, IBlockchainService, ISecurityService. (12)
- Gemini: User, Wallet, Transaction, Currency, Amount (5)
- Common: Wallet, Transaction (2)
- $Avg = (12 + 5)/2 = 8.5$
- $SR = 2/8.5 = 0.235 \rightarrow Scale = 1$

Claude & Meta

- Claude: WalletController, TransactionController, SecurityController, WalletManager, SecurityManager, ValidationManager, Wallet, Transaction, SecuritySettings, BlockchainConnector, ContractManager, GasEstimator, MultiSigConfig, RecoveryConfig, GasFee, IWalletRepository, IBlockchainService, ISecurityService. (12)
- Meta: User, UserManager, Wallet, WalletManager, Asset, AssetManager, SmartContract, SmartContractManager, Transaction, TransactionManager, Dapp, DappManager (12)
- Common: Wallet, WalletManager, Transaction, SecuritySettings, SmartContract, SmartContractManager, TransactionManager (7)
- Avg = $(12 + 12)/2 = 12$
- SR = $7/12 = 0.583 \rightarrow \text{Scale} = 3$

Copilot & Gemini

- Copilot: User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction (8)
- Gemini: User, Wallet, Transaction, Currency, Amount (5)
- Common: User (1)
- $Avg = (8 + 5)/2 = 6.5$
- $SR = 1/6.5 = 0.153 \rightarrow Scale = 1$

Copilot & Meta

- Copilot: User, DigitalAsset, SmartContract, AutomatedTransaction, dApp, SecuritySetting, GasOptimization, BatchTransaction (8)
- Meta: User, UserManager, Wallet, WalletManager, Asset, AssetManager, SmartContract, SmartContractManager, Transaction, TransactionManager, Dapp, DappManager (12)
- Common: User, SmartContract, dApp, Transaction (4)
- $\text{Avg} = (8 + 12)/2 = 10$
- $\text{SR} = 4/10 = 0.4 \rightarrow \text{Scale} = 2$

Gemini & Meta

- Gemini: User, Wallet, Transaction, Currency, Amount (5)
- Meta: User, UserManager, Wallet, WalletManager, Asset, AssetManager, SmartContract, SmartContractManager, Transaction, TransactionManager, Dapp, DappManager (12)
- Common: User, Wallet, Transaction (3)
- $Avg = (5 + 12)/2 = 8.5$
- $SR = 3/8.5 = 0.352 \rightarrow Scale = 2$

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

| Model | Attributes | Operations | Count |
|---------|--|---|------------|
| ChatGPT | transactionId: String, transactionType: String, amount: double, timestamp: Date, status: String, gasFee: double | processTransaction(), verifyTransactionStatus() | 6 + 2 = 8 |
| Claude | id: String, from: Address, to: Address, amount: BigDecimal, status: TransactionStatus, gasFee: GasFee, timestamp: LocalDateTime, signature: byte[] | sign(PrivateKey), verify(), getId(), getFrom(), getTo(), getAmount(), getStatus(), getGasFee(), getTimestamp() | 9 + 9 = 18 |
| Copilot | transactionID: String, transactionRules: String, transactionStatus: String | configure(), execute(), monitor() | 3 + 3 = 6 |
| Gemini | transactionId: int, sender: Wallet, recipient: Wallet, amount: Amount, timestamp: LocalDateTime, status: TransactionStatus | processTransaction() | 6 + 1 = 7 |
| Meta | transactionId: int, walletId: int, assetId: int, amount: double, timestamp: Date, status: TransactionStatus | confirmTransaction(), cancelTransaction(), toString() | 6 + 3 = 9 |

| Pair | Common Attributes | Common Operations | Count |
|-------------------|---|----------------------|-------|
| ChatGPT & Claude | id, amount, status, gasFee, timestamp | sign(), verify() | 5+2=7 |
| ChatGPT & Copilot | transactionId | execute() | 1+1=2 |
| ChatGPT & Gemini | timestamp, amount | processTransaction() | 2+1=3 |
| ChatGPT & Meta | amount, timestamp, status | confirmTransaction() | 3+1=4 |
| Claude & Copilot | transactionID, transactionStatus | execute() | 2+1=2 |
| Claude & Gemini | transactionId, recipient, amount, timestamp, status | processTransaction() | 5+1=6 |
| Claude & Meta | transactionId, amount, timestamp, status | confirmTransaction() | 4+1=5 |
| Copilot & Gemini | transactionID, transactionStatus | processTransaction() | 2+1=3 |
| Copilot & Meta | transactionID, transactionStatus | confirmTransaction() | 2+1=3 |
| Gemini & Meta | transactionId, amount, timestamp, status | confirmTransaction() | 4+1=5 |

ChatGPT & Claude

- ChatGPT: 8
- Claude: 18
- Common: 7
- $\text{Avg} = (8 + 18)/2 = 13$
- $\text{SR} = 7/13 = 0.538 \rightarrow \text{Scale} = 3$

ChatGPT & Copilot

- ChatGPT: 8
- Copilot: 6
- Common: 2
- $\text{Avg} = (8 + 6)/2 = 7$
- $\text{SR} = 2/7 = 0.286 \rightarrow \text{Scale} = 1$

ChatGPT & Gemini

- ChatGPT: 8
- Gemini: 7
- Common: 3
- $\text{Avg} = (8 + 7)/2 = 7.5$
- $\text{SR} = 3/7.5 = 0.4 \rightarrow \text{Scale} = 2$

ChatGPT & Meta

- ChatGPT: 8
- Meta: 9
- Common: 4
- $\text{Avg} = (8 + 9)/2 = 8.5$
- $\text{SR} = 4/8.5 = 0.470 \rightarrow \text{Scale} = 2$

Claude & Copilot

- Claude: 18
- Copilot: 6
- Common: 2
- $\text{Avg} = (18 + 6)/2 = 12$
- $\text{SR} = 2/12 = 0.166 \rightarrow \text{Scale} = 1$

Claude & Gemini

- Claude: 18
- Gemini: 7
- Common: 6
- $\text{Avg} = (18 + 7)/2 = 12.5$
- $\text{SR} = 6/12.5 = 0.48 \rightarrow \text{Scale} = 2$

Claude & Meta

- Claude: 18
- Meta: 9
- Common: 5
- $\text{Avg} = (18 + 9)/2 = 13.5$
- $\text{SR} = 5/13.5 = 0.370 \rightarrow \text{Scale} = 2$

Copilot & Gemini

- Copilot: 6
- Gemini: 7
- Common: 3
- $\text{Avg} = (6 + 7)/2 = 6.5$
- $\text{SR} = 3/6.5 = 0.461 \rightarrow \text{Scale} = 2$

Copilot & Meta

- Copilot: 6
- Meta: 9
- Common: 3
- $\text{Avg} = (6 + 9)/2 = 7.5$
- $\text{SR} = 3/7.5 = 0.4 \rightarrow \text{Scale} = 2$

Gemini & Meta

- Gemini: 7
- Meta: 9
- Common: 5
- $\text{Avg} = (7 + 9)/2 = 8$
- $\text{SR} = 5/8 = 0.625 \rightarrow \text{Scale} = 3$

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

| Model | Involved Methods | Count |
|---------|---|-------|
| ChatGPT | 1. initiateSendAsset 2. getBalance 3. getTransactionHistory 4. initiateSmart Contract 5. initiateSocialRecovery | 5 |
| Claude | 1. createWallet 2. createTransaction 3. signTransaction 4. broadcastTransaction 5. getTransactionStatus 6. setCurrentAddress 7. getCurrentAddress | 7 |
| Copilot | 1. login 2. store 3. configureAutomatedTransactions 4. executeSmartContract 5. enhanceSecurity 6. getUsername 7. getAssetAmount 8. getStatus 9. getSettingValue | 9 |
| Gemini | 1. authenticate 2. deposit 3. processTransaction 4. getBalance | 4 |
| Meta | 1. createWallet, 2. transfer assets, 3. execute a smart contract, 4. confirm transaction | 4 |

| Model Pair | Common Methods | Count |
|-------------------|--|-------|
| ChatGPT & Claude | createWallet, signTransaction | 2 |
| ChatGPT & Copilot | executeSmartContract, enhanceSecurity | 2 |
| ChatGPT & Gemini | processTransaction, getBalance | 2 |
| ChatGPT & Meta | transfer assets, execute a smart contract | 3 |
| Claude & Copilot | configureAutomatedTransactions, getStatus | 2 |
| Claude & Gemini | authenticate, processTransaction, getBalance | 3 |
| Claude & Meta | createWallet, transfer assets, confirmTransaction | 3 |
| Copilot & Gemini | authenticate, deposit, processTransaction, getBalance | 4 |
| Copilot & Meta | transfer assets, execute a smart contract, confirm transaction | 3 |
| Gemini & Meta | transfer assets | 1 |

ChatGPT & Claude

- ChatGPT: 5
- Claude: 7
- Common: 2
- $\text{Avg} = (5 + 7)/2 = 6$
- $\text{SR} = 2/6 = 0.333 \rightarrow \text{Scale} = 2$

ChatGPT & Copilot

- ChatGPT: 5
- Copilot: 9
- Common: 2
- $\text{Avg} = (5 + 9)/2 = 7$
- $\text{SR} = 2/7 = 0.285 \rightarrow \text{Scale} = 1$

ChatGPT & Gemini

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

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: 7
- Copilot: 9
- Common: 2
- $\text{Avg} = (7 + 9)/2 = 8$
- $\text{SR} = 2/8 = 0.25 \rightarrow \text{Scale} = 1$

Claude & Gemini

- Claude: 7
- Gemini: 4
- Common: 3
- $\text{Avg} = (7 + 4)/2 = 5.5$
- $\text{SR} = 3/5.5 = 0.545 \rightarrow \text{Scale} = 3$

Claude & Meta

- Claude: 7
- Meta: 4
- Common: 3
- $\text{Avg} = (7 + 4)/2 = 5.5$
- $\text{SR} = 3/5.5 = 0.545 \rightarrow \text{Scale} = 3$

Copilot & Gemini

- Copilot: 9
- Gemini: 4
- Common: 4
- $\text{Avg} = (9 + 4)/2 = 6.5$
- $\text{SR} = 4/6.5 = 0.615 \rightarrow \text{Scale} = 3$

Copilot & Meta

- Copilot: 9
- Meta: 4
- Common: 3
- $\text{Avg} = (9 + 4)/2 = 6.5$
- $\text{SR} = 3/6.5 = 0.461 \rightarrow \text{Scale} = 2$

Gemini & Meta

- Gemini: 4
- Meta: 4
- Common: 1
- $\text{Avg} = (4 + 4)/2 = 4$
- $\text{SR} = 1/4 = 0.25 \rightarrow \text{Scale} = 1$