DEX Development Cost Estimation

Team: 1 Smart Contract Developer, 1 Frontend Developer, 1 Backend Developer

Phase 1: Backend System & Sui Indexer (Week 1-3)

Backend Developer

Task Name	Time Cost	Price
NestJS backend API setup with modules structure	28 hours	$420
TypeORM/Prisma database setup (PostgreSQL)	24 hours	$360
Authentication & authorization guards	20 hours	$300
Rust-based Sui indexer development	64 hours	$960
Sui blockchain event listening in Rust	40 hours	$600
Pool data indexing and caching with Redis	36 hours	$540
Price feed aggregation service (NestJS)	32 hours	$480
WebSocket gateway for real-time data	28 hours	$420
REST API controllers and DTOs	32 hours	$480
User wallet management service	24 hours	$360
Transaction history tracking service	28 hours	$420
Analytics data processing pipeline (Rust + NestJS)	40 hours	$600
Background job processing with Bull Queue	24 hours	$360
API rate limiting and security middleware	20 hours	$300
Error handling, logging, and monitoring	20 hours	$300
Rust-NestJS communication layer	16 hours	$240
Phase 1 Total	**476 hours**	**$7,140**

Phase 2: Smart Contract Development (Week 1-5)

Smart Contract Developer

Task Name	Time Cost	Price
ERC-20 token standard implementation	12 hours	$180
AMM (Automated Market Maker) core logic	40 hours	$600
Liquidity pool creation contract	30 hours	$450

Task Name	Time Cost	Price
Add liquidity functionality	20 hours	$300
Remove liquidity functionality	16 hours	$240
Token swap mechanism (exact input/output)	28 hours	$420
Price calculation and slippage protection	24 hours	$360
Fee calculation and distribution	16 hours	$240
Pool factory contract	20 hours	$300
Router contract for multi-hop swaps	24 hours	$360
Emergency pause/unpause functionality	8 hours	$120
Access control and ownership management	12 hours	$180
Smart contract testing (unit tests)	40 hours	$600
Smart contract integration tests	20 hours	$300
Gas optimization	16 hours	$240
Phase 2 Total	**326 hours**	**$4,890**

Phase 3: Frontend Development - Core Features (Week 1-4)

Frontend Developer

Task Name	Time Cost	Price
Wallet connection integration (MetaMask, WalletConnect)	11 hours	$165
Token selection interface with search/filtering	9 hours	$135
Swap interface design and implementation	17 hours	$255
Real-time price fetching and display	11 hours	$165
Slippage tolerance settings	6 hours	$90
Transaction confirmation modals	9 hours	$135
Transaction history display	11 hours	$165
Pool creation interface	14 hours	$210
Add liquidity interface with ratio calculations	17 hours	$255
Remove liquidity interface	11 hours	$165
Liquidity position management dashboard	20 hours	$300
Pool analytics (volume, TVL, APR)	14 hours	$210
Portfolio tracking interface	11 hours	$165

Task Name	Time Cost	Price
Responsive design implementation	17 hours	$255
Error handling and user feedback	9 hours	$135
Loading states and skeleton screens	1 hour	$15
Phase 3 Total	**188 hours**	**$2,820**

Phase 4: Advanced Features (Week 4-6)

All Developers Working in Parallel

Smart Contract Developer:

Task Name	Time Cost	Price
Concentrated liquidity (V3-style) pools	40 hours	$600
Advanced order types smart contracts	28 hours	$420
Yield farming rewards smart contracts	16 hours	$240
Smart Contract Subtotal	**84 hours**	**$1,260**

Frontend Developer:

Task Name	Time Cost	Price
Multi-token swap UI implementation	24 hours	$360
Price impact calculation and warnings	12 hours	$180
Advanced order types UI (limit orders)	28 hours	$420
Position range management for V3 pools	24 hours	$360
Fee tier selection interface	12 hours	$180
Yield farming interface	20 hours	$300
Staking interface for governance tokens	20 hours	$300
Referral system UI	16 hours	$240
Frontend Subtotal	**156 hours**	**$2,340**

Backend Developer:

Task Name	Time Cost	Price
Advanced order processing backend	20 hours	$300
Dollar-cost averaging (DCA) service	20 hours	$300

Task Name	Time Cost	Price
Yield farming calculations	16 hours	$240
Referral tracking system	16 hours	$240
Advanced analytics processing	20 hours	$300
Backend Subtotal	**92 hours**	**$1,380**

| **Phase 4 Total** | 332 hours | $4,980 |

Phase 5: Analytics & Dashboard (Week 6-7)

Frontend + Backend Developers

Frontend Developer:

Task Name	Time Cost	Price
Trading volume analytics UI	12 hours	$180
Pool performance metrics display	14 hours	$210
User portfolio analytics interface	16 hours	$240
Historical price charts integration	12 hours	$180
Frontend Subtotal	**54 hours**	**$810**

Backend Developer:

Task Name	Time Cost	Price
TVL (Total Value Locked) tracking	10 hours	$150
Export functionality for trading data	8 hours	$120
Admin dashboard backend	20 hours	$300
Backend Subtotal	**38 hours**	**$570**

| **Phase 5 Total** | 92 hours | $1,380 |

Phase 6: Integration & Final Polish (Week 7-8)

All Developers Working Together

Smart Contract Developer:

Task Name	Time Cost	Price
Final contract testing and optimization	32 hours	$480
Contract deployment and verification	16 hours	$240

Task Name	Time Cost	Price
Smart Contract Subtotal	**48 hours**	**$720**

Frontend Developer:

Task Name	Time Cost	Price
Frontend-backend API integration	32 hours	$480
Real-time data synchronization	28 hours	$420
Performance optimization	24 hours	$360
Final UI/UX polish	20 hours	$300
Frontend Subtotal	**104 hours**	**$1,560**

Backend Developer:

Task Name	Time Cost	Price
Sui wallet integration with NestJS backend	24 hours	$360
Transaction status tracking and notifications	20 hours	$300
API documentation with Swagger/OpenAPI	16 hours	$240
Error handling and retry mechanisms	16 hours	$240
Data validation with class-validator	12 hours	$180
Rust indexer monitoring and health checks	16 hours	$240
Backend Subtotal	**104 hours**	**$1,560**

| **Phase 6 Total** | **256 hours** | **$3,840** |

TOTAL PROJECT ESTIMATION

Phase	Smart Contract	Frontend	Backend	Total Hours	Total Cost
Phase 1: Backend System & Sui Indexer	-	-	476 hours	476 hours	$7,140
Phase 2: Smart Contract Development	326 hours	-	-	326 hours	$4,890
Phase 3: Frontend Core Features	-	188 hours	-	188 hours	$2,820
Phase 4: Advanced Features	84 hours	156 hours	92 hours	332 hours	$4,980

Phase	Smart Contract	Frontend	Backend	Total Hours	Total Cost
Phase 5: Analytics & Dashboard	-	54 hours	38 hours	92 hours	$1,380
Phase 6: Integration & Final Polish	48 hours	104 hours	104 hours	256 hours	$3,840
TOTALS BY DEVELOPER	**458 hours**	**502 hours**	**710 hours**	**1,670 hours**	**$25,050**

Timeline Breakdown

- **Total Duration:** 8 weeks (2 months)
- **3 Developers working in parallel and specialized roles**
- **Smart Contract Developer:** 458 hours (57 hours/week average)
- **Frontend Developer:** 502 hours (63 hours/week average)
- **Backend Developer:** 710 hours (89 hours/week average)

Work Distribution Analysis

- **Backend Developer:** Heaviest workload due to Rust indexer complexity
- **Frontend Developer:** Moderate workload focused on UI/UX
- **Smart Contract Developer:** Focused workload on Move contracts and testing

Task Name	Time Cost	Price
ERC-20 token standard implementation	12 hours	$180
AMM (Automated Market Maker) core logic	40 hours	$600
Liquidity pool creation contract	30 hours	$450
Add liquidity functionality	20 hours	$300
Remove liquidity functionality	16 hours	$240
Token swap mechanism (exact input/output)	28 hours	$420
Price calculation and slippage protection	24 hours	$360
Fee calculation and distribution	16 hours	$240
Pool factory contract	20 hours	$300
Router contract for multi-hop swaps	24 hours	$360
Emergency pause/unpause functionality	8 hours	$120
Access control and ownership management	12 hours	$180
Smart contract testing (unit tests)	40 hours	$600
Smart contract integration tests	20 hours	$300

Task Name	Time Cost	Price
Gas optimization	16 hours	$240
Phase 2 Total	**326 hours**	**$4,890**

Phase 3: Frontend Development - Core Features (Week 8-10)

Task Name	Time Cost	Price
Wallet connection integration (MetaMask, WalletConnect)	11 hours	$165
Token selection interface with search/filtering	9 hours	$135
Swap interface design and implementation	17 hours	$255
Real-time price fetching and display	11 hours	$165
Slippage tolerance settings	6 hours	$90
Transaction confirmation modals	9 hours	$135
Transaction history display	11 hours	$165
Pool creation interface	14 hours	$210
Add liquidity interface with ratio calculations	17 hours	$255
Remove liquidity interface	11 hours	$165
Liquidity position management dashboard	20 hours	$300
Pool analytics (volume, TVL, APR)	14 hours	$210
Portfolio tracking interface	11 hours	$165
Responsive design implementation	17 hours	$255
Error handling and user feedback	9 hours	$135
Loading states and skeleton screens	1 hour	$15
Phase 3 Total	**188 hours**	**$2,820**

Phase 4: Advanced Features (Week 11-12)

Task Name	Time Cost	Price
Multi-token swap (one-to-many) implementation	24 hours	$360
Price impact calculation and warnings	12 hours	$180
Advanced order types (limit orders)	28 hours	$420
Dollar-cost averaging (DCA) functionality	20 hours	$300
Concentrated liquidity (V3-style) pools	40 hours	$600

Task Name	Time Cost	Price
Position range management for V3 pools	24 hours	$360
Fee tier selection interface	12 hours	$180
Yield farming rewards calculation	16 hours	$240
Staking interface for governance tokens	20 hours	$300
Referral system implementation	16 hours	$240
Phase 4 Total	**212 hours**	**$3,180**

Phase 5: Analytics & Dashboard (Week 13-14)

Task Name	Time Cost	Price
Trading volume analytics	12 hours	$180
TVL (Total Value Locked) tracking	10 hours	$150
Pool performance metrics	14 hours	$210
User portfolio analytics	16 hours	$240
Historical price charts integration	12 hours	$180
Export functionality for trading data	8 hours	$120
Admin dashboard for platform monitoring	20 hours	$300
Phase 5 Total	**92 hours**	**$1,380**

Phase 6: Backend Integration & API Development (Week 15-16)

Task Name	Time Cost	Price
Frontend-NestJS API integration	32 hours	$480
Real-time data synchronization via WebSocket	28 hours	$420
Sui wallet integration with NestJS backend	24 hours	$360
Transaction status tracking and notifications	20 hours	$300
Performance optimization and Redis caching	24 hours	$360
API documentation with Swagger/OpenAPI	16 hours	$240
Error handling and retry mechanisms	16 hours	$240
Data validation with class-validator	12 hours	$180
Rust indexer monitoring and health checks	16 hours	$240
Phase 6 Total	**188 hours**	**$2,820**

TOTAL PROJECT ESTIMATION

Phase	Hours	Cost
Phase 1: Backend System & Sui Indexer	476 hours	$7,140
Phase 2: Smart Contract Development	326 hours	$4,890
Phase 3: Frontend Core Features	188 hours	$2,820
Phase 4: Advanced Features	212 hours	$3,180
Phase 5: Analytics & Dashboard	92 hours	$1,380
Phase 6: Backend Integration & API Development	188 hours	$2,820
GRAND TOTAL	**1,482 hours**	**$22,230**

Technical Stack Requirements

Smart Contract Developer:

- Move language for Sui blockchain
- Sui CLI and development tools
- Sui TypeScript SDK for integration
- Smart contract testing frameworks

Frontend Developer:

- React/Next.js with TypeScript
- Sui TypeScript SDK
- Web3 wallet integrations
- Real-time WebSocket connections
- Responsive UI frameworks

Backend Developer:

- NestJS framework with TypeScript
- Rust for Sui indexer development
- TypeORM/Prisma for database ORM
- PostgreSQL for primary data storage
- Redis for caching and job queuing
- Bull Queue for background jobs
- WebSocket Gateway for real-time updates

Infrastructure:

- Docker containers for deployment
- Cloud hosting (AWS/GCP/DigitalOcean)
- Database hosting with backup systems
- Load balancer for API scaling