# SKIDS Advanced - Enterprise Integration Infrastructure

## Comprehensive Child Development Platform with Advanced Vendor Management

[![Next.js](https://img.shields.io/badge/Next.js-14-black)](https://nextjs.org/)
[![TypeScript](https://img.shields.io/badge/TypeScript-5.0-blue)](https://www.typescriptlang.org/)
[![Tailwind CSS](https://img.shields.io/badge/Tailwind-3.0-38B2AC)](https://tailwindcss.com/)
[![License](https://img.shields.io/badge/License-Proprietary-red)](LICENSE)

A comprehensive enterprise-grade platform for child development assessment, care plan management, vendor integration, and advanced analytics with real-time monitoring capabilities.

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## \*\*OVERVIEW\*\*

SKIDS Advanced is an enterprise-grade child development platform that combines comprehensive health assessment tools with advanced vendor management, real-time analytics, and AI-powered insights. The platform serves healthcare providers, parents, and administrative staff with role-based access and specialized workflows.

### \*\* Platform Highlights\*\*

* • \*\* Healthcare Focus\*\*: Pediatric health assessments and care plan management
* • \*\* AI-Powered\*\*: ROI analysis, predictive analytics, and intelligent recommendations
* • \*\* Enterprise-Ready\*\*: Vendor onboarding, staff management, and compliance tracking
* • \*\* Real-time Analytics\*\*: Unified dashboard with live metrics and performance monitoring
* • \*\* HIPAA Compliant\*\*: Security-first architecture with data encryption and audit logging
* • \*\* High Performance\*\*: Optimized for speed with 99.9% uptime targets

## ✨ \*\*KEY FEATURES\*\*

### \*\* Core Platform Features\*\*

#### \*\*Discovery & Assessment System\*\*

* • � \*\*Interactive Body Systems\*\*: Brain, cardiovascular, respiratory, digestive, sensory
* • \*\*Developmental Domains\*\*: Cognitive, language, social-emotional, motor, sensory
* • \*\*Age-Adaptive Content\*\*: Tailored experiences for different age groups
* • \*\*Interactive Elements\*\*: 60fps animations and engaging visualizations

#### \*\*Intervention Programs\*\*

* • \*\*Vision Care\*\*: Amblyopia/myopia treatment with arrest lenses
* • \*\*Hearing Solutions\*\*: SoundScout technology integration
* • \*\*Nutrition AI\*\*: Personalized meal planning with NutreeAI integration
* • \*\*Wellness Programs\*\*: Pranayama coaching and mindfulness training
* • \*\*Dental Care\*\*: Comprehensive oral health programs
* • \*\*Specialized Care\*\*: Dermatology, allergy, and sleep interventions

#### \*\*Care Plan Management\*\*

* • \*\*Dynamic Care Plans\*\*: AI-powered plan generation and customization
* • \*\*Subscription Tiers\*\*: Essential (₹299), Comprehensive (₹499), Premium (₹799)
* • \*\*Real-time Updates\*\*: Live plan modifications and progress tracking
* • \*\*Outcome Tracking\*\*: Comprehensive progress monitoring and reporting

### \*\* Enterprise Integration Features\*\*

#### \*\*Vendor Management System\*\*

* • � \*\*8-Step Onboarding\*\*: Comprehensive vendor integration workflow
* • \*\*Performance Tracking\*\*: Real-time vendor performance monitoring
* • \*\*Relationship Management\*\*: Automated vendor communication and support
* • \*\*ROI Analysis\*\*: AI-powered vendor performance and cost-benefit analysis
* • ⚖ \*\*Compliance Monitoring\*\*: HIPAA and regulatory compliance tracking

#### \*\*Staff Management Tools\*\*

* • \*\*Role-Based Access\*\*: Admin, staff, provider, vendor, specialist roles
* • \*\*Performance Analytics\*\*: Individual and team productivity tracking
* • \*\*KRA Management\*\*: Key Result Areas with automated performance reviews
* • \*\*Training Systems\*\*: Comprehensive onboarding and skill development

#### \*\*Unified Analytics Dashboard\*\*

* • \*\*Real-time Metrics\*\*: Live system performance and business metrics
* • � \*\*Predictive Analytics\*\*: AI-powered forecasting and trend analysis
* • \*\*ROI Tracking\*\*: Comprehensive return on investment analysis
* • \*\*Alert Management\*\*: Automated monitoring and escalation procedures

### \*\* Payment & Subscription Management\*\*

* • � \*\*Multi-Gateway Support\*\*: Razorpay, Stripe, PayPal, Square integration
* • \*\*Subscription Management\*\*: Automated billing and renewal handling
* • \*\*Revenue Tracking\*\*: Comprehensive financial analytics and reporting
* • \*\*Secure Processing\*\*: PCI-compliant payment handling

## \*\*ARCHITECTURE\*\*

### \*\*� Frontend Architecture\*\*

Next.js 14 App Router
├── React 18 with TypeScript
├── Tailwind CSS for styling
├── Framer Motion for animations
├── Lucide React for icons
└── Custom component library

### \*\* Backend Architecture\*\*

API Routes (Next.js)
├── RESTful API design
├── TypeScript for type safety
├── Middleware for authentication
├── Rate limiting and security
└── Error handling and logging

### \*\* Data Architecture\*\*

Supabase/PostgreSQL
├── User management tables
├── Care plans and subscriptions
├── Vendor and staff data
├── Analytics and metrics
└── Audit logs and compliance

### \*\* Security Architecture\*\*

Multi-layer Security
├── Role-based access control (RBAC)
├── JWT token authentication
├── Data encryption at rest and in transit
├── HIPAA compliance measures
└── Audit logging and monitoring

## \*\*QUICK START\*\*

### \*\* Prerequisites\*\*

* • \*\*Node.js\*\*: 18.0.0 or higher
* • \*\*npm\*\*: 8.0.0 or higher (or yarn/pnpm)
* • \*\*Git\*\*: Latest version
* • \*\*Database\*\*: PostgreSQL 15+ (or Supabase account)

### \*\* Installation\*\*

* • \*\*Clone the Repository\*\*

git clone https://github.com/your-org/skids-advanced.git
cd skids-advanced

* • \*\*Install Dependencies\*\*

npm install
# or
yarn install
# or
pnpm install

* • \*\*Environment Setup\*\*

cp .env.example .env.local

* • \*\*Configure Environment Variables\*\*

# Edit .env.local with your configuration
# See Configuration section for details

* • \*\*Start Development Server\*\*

npm run dev

* • \*\*Access the Application\*\*
* • \*\*Main Platform\*\*: http://localhost:3001
* • \*\*Analytics Dashboard\*\*: http://localhost:3001/admin/analytics
* • \*\*Vendor Management\*\*: http://localhost:3001/admin/vendor-management
* • \*\*Staff Management\*\*: http://localhost:3001/admin/staff-management

### \*\* Quick Testing\*\*

# Run all tests
npm run test:all
# Run development tests
npm run test:dev
# Run with coverage
npm run test:coverage

## \*\*PROJECT STRUCTURE\*\*

skids-advanced/
├── 📁 src/
│ ├── 📁 app/ # Next.js 14 App Router
│ │ ├── 📄 layout.tsx # Root layout
│ │ ├── 📄 page.tsx # Homepage
│ │ ├── 📁 admin/ # Admin interfaces
│ │ │ ├── 📁 analytics/ # Unified analytics dashboard
│ │ │ ├── 📁 vendor-management/# Vendor management system
│ │ │ ├── 📁 staff-management/ # Staff management tools
│ │ │ └── 📁 care-plans/ # Care plan management
│ │ ├── 📁 discovery/ # Discovery journeys
│ │ ├── 📁 interventions/ # Intervention programs
│ │ ├── 📁 dashboard/ # User dashboards
│ │ └── 📁 api/ # API routes
│ ├── 📁 components/ # Reusable components
│ │ ├── 📁 layout/ # Layout components
│ │ ├── 📁 discovery/ # Discovery components
│ │ ├── 📁 interventions/ # Intervention components
│ │ ├── 📁 care-plans/ # Care plan components
│ │ ├── 📁 analytics/ # Analytics components
│ │ ├── 📁 vendor/ # Vendor components
│ │ ├── 📁 chat/ # Chat components
│ │ └── 📁 ui/ # Base UI components
│ ├── 📁 lib/ # Utility libraries
│ │ ├── 📁 api/ # API layer
│ │ ├── 📁 payment/ # Payment gateways
│ │ ├── 📁 ai/ # AI/ML utilities
│ │ └── 📁 utils/ # Helper functions
│ ├── 📁 types/ # TypeScript definitions
│ │ ├── 📄 analytics.ts # Analytics types
│ │ ├── 📄 vendor.ts # Vendor types
│ │ ├── 📄 payment.ts # Payment types
│ │ ├── 📄 auth.ts # Authentication types
│ │ └── 📄 service-integration.ts# Integration types
│ ├── 📁 hooks/ # Custom React hooks
│ └── 📁 styles/ # Global styles
├── 📁 docs/ # Documentation
│ ├── 📄 INTERNAL\_TESTING\_DEPLOYMENT\_PLAN.md
│ ├── 📄 PRODUCTION\_DEPLOYMENT\_GUIDE.md
│ └── 📄 KRA\_SLA\_FRAMEWORK.md
├── 📁 tests/ # Test files
│ ├── 📁 unit/ # Unit tests
│ ├── 📁 integration/ # Integration tests
│ ├── 📁 e2e/ # End-to-end tests
│ └── 📁 performance/ # Performance tests
├── 📄 README\_TESTING.md # Testing framework guide
├── 📄 .env.example # Environment template
├── 📄 package.json # Dependencies
├── 📄 tsconfig.json # TypeScript config
├── 📄 tailwind.config.js # Tailwind config
├── 📄 next.config.js # Next.js config
└── 📄 jest.config.js # Jest config

## \*\*CONFIGURATION\*\*

### \*\*Environment Variables\*\*

Create .env.local file:

# =============================================================================
# SKIDS ADVANCED - COMPREHENSIVE ENVIRONMENT CONFIGURATION
# =============================================================================
# Application Settings
NODE\_ENV=development
NEXT\_PUBLIC\_APP\_ENV=development
NEXT\_PUBLIC\_API\_BASE\_URL=http://localhost:3001
# Authentication (Clerk)
NEXT\_PUBLIC\_CLERK\_PUBLISHABLE\_KEY=your\_clerk\_publishable\_key\_here
CLERK\_SECRET\_KEY=your\_clerk\_secret\_key\_here
# Payment Gateways
RAZORPAY\_KEY\_ID=rzp\_test\_your\_key\_here
RAZORPAY\_KEY\_SECRET=your\_razorpay\_secret\_here
STRIPE\_PUBLISHABLE\_KEY=pk\_test\_your\_stripe\_key\_here
STRIPE\_SECRET\_KEY=sk\_test\_your\_stripe\_secret\_here
# External Services
NUTREEAI\_API\_KEY=your\_nutreeai\_api\_key\_here
SHANTI\_API\_KEY=your\_shanti\_api\_key\_here
# Feature Flags
ENABLE\_VENDOR\_ONBOARDING=true
ENABLE\_AI\_RECOMMENDATIONS=true
ENABLE\_ROI\_ANALYTICS=true
USE\_MOCK\_PAYMENTS=true
USE\_MOCK\_AI=true

### \*\*Available Scripts\*\*

# Development
npm run dev # Start development server
npm run build # Build for production
npm run start # Start production server
# Testing
npm run test:all # Run all tests
npm run test:unit # Run unit tests
npm run test:integration # Run integration tests
npm run test:e2e # Run end-to-end tests
npm run test:performance # Run performance tests
npm run test:coverage # Run tests with coverage
# Code Quality
npm run lint # Run ESLint
npm run lint:fix # Fix ESLint issues
npm run type-check # Run TypeScript checks
npm run format # Format with Prettier
# Deployment
npm run deploy:staging # Deploy to staging
npm run deploy:production# Deploy to production

## \*\*TESTING\*\*

### \*\*Testing Strategy\*\*

* • \*\*Unit Tests\*\*: Component and function testing with Jest
* • \*\*Integration Tests\*\*: API and service integration testing
* • \*\*E2E Tests\*\*: Full user workflow testing with Playwright
* • \*\*Performance Tests\*\*: Load and stress testing with k6

### \*\*Running Tests\*\*

# Run specific test suites
npm run test:unit
npm run test:integration
npm run test:e2e
npm run test:performance
# Run with coverage
npm run test:coverage
# Run in watch mode
npm run test:watch

### \*\*Test Coverage Requirements\*\*

* • \*\*Unit Tests\*\*: 90% coverage minimum
* • \*\*Integration Tests\*\*: All API endpoints covered
* • \*\*E2E Tests\*\*: Critical user journeys covered
* • \*\*Performance Tests\*\*: All pages under 2s load time

## \*\*DEPLOYMENT\*\*

### \*\*Deployment Environments\*\*

* • \*\*Development\*\*: http://localhost:3001
* • \*\*Staging\*\*: https://staging.skids.clinic
* • \*\*Production\*\*: https://app.skids.clinic

### \*\*Deployment Process\*\*

# 1. Run tests
npm run test:all
# 2. Build application
npm run build
# 3. Deploy to staging
npm run deploy:staging
# 4. Run staging tests
npm run test:staging
# 5. Deploy to production
npm run deploy:production

### \*\*Infrastructure Requirements\*\*

* • \*\*Server\*\*: 8 vCPUs, 16GB RAM, 200GB SSD
* • \*\*Database\*\*: PostgreSQL 15+ with read replicas
* • \*\*CDN\*\*: Cloudflare with global edge locations
* • \*\*Monitoring\*\*: Comprehensive APM and alerting

## \*\*DOCUMENTATION\*\*

### \*\*Technical Documentation\*\*

* • [ Testing Framework Guide](README\_TESTING.md)
* • [ Internal Testing Plan](docs/INTERNAL\_TESTING\_DEPLOYMENT\_PLAN.md)
* • [ Production Deployment Guide](docs/PRODUCTION\_DEPLOYMENT\_GUIDE.md)
* • [ KRA/SLA Framework](docs/KRA\_SLA\_FRAMEWORK.md)

### \*\*User Documentation\*\*

* • [ Non-IT Team User Manual](docs/USER\_MANUAL\_NON\_IT.md)
* • [ Admin User Guide](docs/ADMIN\_USER\_GUIDE.md)
* • [ Vendor Onboarding Guide](docs/VENDOR\_ONBOARDING\_GUIDE.md)

## \*\*CONTRIBUTING\*\*

### \*\*Development Workflow\*\*

* • \*\*Create Feature Branch\*\*

git checkout -b feature/your-feature-name

* • \*\*Make Changes\*\*
* • Follow TypeScript best practices
* • Write tests for new features
* • Update documentation
* • \*\*Test Changes\*\*

npm run test:all
npm run lint
npm run type-check

* • \*\*Submit Pull Request\*\*
* • Provide clear description
* • Include test coverage
* • Update documentation

### \*\*Code Standards\*\*

* • \*\*TypeScript\*\*: Strict mode enabled
* • \*\*ESLint\*\*: Airbnb configuration
* • \*\*Prettier\*\*: Consistent formatting
* • \*\*Conventional Commits\*\*: Structured commit messages

## \*\*SUPPORT\*\*

### \*\*Team Contacts\*\*

* • \*\*Project Lead\*\*: project-lead@skids.clinic
* • \*\*Technical Lead\*\*: tech-lead@skids.clinic
* • \*\*DevOps Lead\*\*: devops@skids.clinic
* • \*\*QA Lead\*\*: qa-lead@skids.clinic

### \*\*Issue Reporting\*\*

* • \*\*Bug Reports\*\*: Use GitHub Issues with bug template
* • \*\*Feature Requests\*\*: Use GitHub Issues with feature template
* • \*\*Security Issues\*\*: Email security@skids.clinic

### \*\*Documentation\*\*

* • \*\*API Documentation\*\*: Available at `/api/docs`
* • \*\*Component Library\*\*: Available at `/storybook`
* • \*\*Architecture Diagrams\*\*: Available in `/docs/architecture`

## \*\*LICENSE\*\*

This project is proprietary software developed for SKIDS Advanced platform.

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**ENTERPRISE-READY PLATFORM FOR COMPREHENSIVE CHILD DEVELOPMENT & HEALTHCARE MANAGEMENT**