

CASHPOT ERP 2.0

Comprehensive Gaming Management System

Requirements Document

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1. System Overview

CASHPOT ERP 2.0 is a comprehensive gaming management system designed to streamline operations for gaming companies, casinos, and entertainment venues. The system provides a complete solution for managing gaming equipment, financial transactions, user access, and regulatory compliance.

1.1 System Purpose

The primary purpose of CASHPOT ERP 2.0 is to provide a centralized platform for managing all aspects of gaming operations, including equipment tracking, financial management, user administration, and regulatory reporting.

1.2 Target Users

The system is designed for gaming operators, casino managers, financial controllers, IT administrators, and regulatory compliance officers.

1.3 Key Benefits

- Centralized management of all gaming operations
- Real-time monitoring and reporting capabilities
- Automated compliance and regulatory reporting
- Enhanced security and access control
- Streamlined financial management and invoicing
- Comprehensive audit trail and logging

2. Technical Architecture

CASHPOT ERP 2.0 is built using modern web technologies with a clear separation between frontend and backend components.

2.1 Technology Stack

Frontend Framework: React 18 with Redux Toolkit

Backend Framework: Node.js with Express.js

Database: SQLite (development) / PostgreSQL (production)

Authentication: JWT (JSON Web Tokens)

Build Tool: Vite

Styling: CSS3 with Glass Morphism Design

State Management: Redux Toolkit with RTK Query

HTTP Client: Axios

PDF Generation: PDFKit

File Upload: Multer

2.2 System Architecture

The system follows a client-server architecture with RESTful API communication. The frontend runs on port 3000 with a proxy configuration to the backend API on port 3001.

2.3 Security Architecture

- JWT-based authentication with refresh tokens
- Role-based access control (RBAC)
- Input validation and sanitization
- CORS configuration for cross-origin requests
- Rate limiting and request throttling
- Secure password hashing with bcrypt

3. Core Modules

CASHPOT ERP 2.0 consists of 13 core modules that provide comprehensive functionality for gaming management.

3.1 Dashboard Module

The dashboard provides an overview of key metrics and system status.

- Real-time system statistics and KPIs
- Revenue and profit analytics
- Equipment status monitoring
- Recent activity feed
- Quick access to critical functions
- Customizable widgets and charts

3.2 Companies Module

Management of company information and organizational structure.

- Company profile management
- Multi-company support
- Company hierarchy and relationships
- Contact information management
- Document storage and management
- Company-specific settings and configurations

3.3 Locations Module

Management of physical locations and venues.

- Location profile and details
- Address and contact information
- Location-specific configurations
- Equipment inventory by location
- Location performance metrics
- Geographic mapping and visualization

3.4 Providers Module

Management of gaming equipment providers and suppliers.

- Provider profile and contact information
- Provider performance tracking
- Contract and agreement management
- Equipment catalog by provider
- Provider rating and reviews
- Communication history and notes

3.5 Cabinets Module

Management of gaming cabinets and physical equipment.

- Cabinet inventory and tracking
- Cabinet specifications and details
- Maintenance schedules and history

- Cabinet performance metrics
- Location assignment and movement tracking
- Cabinet status monitoring (active, maintenance, retired)

3.6 Game Mixes Module

Management of game configurations and mixes.

- Game mix creation and configuration
- Game selection and arrangement
- Mix performance analytics
- Mix scheduling and rotation
- Mix-specific settings and parameters
- Mix comparison and optimization

3.7 Slots Module

Management of slot machines and games.

- Slot machine inventory and details
- Game specifications and parameters
- Performance tracking and analytics
- Maintenance and service records
- Revenue and payout tracking
- Slot machine status monitoring

3.8 Invoices Module

Financial management and invoicing system.

- Invoice creation and management
- Payment tracking and reconciliation
- Financial reporting and analytics
- Tax calculation and compliance
- Invoice templates and customization
- Automated billing and reminders

3.9 Rent Management Module

Management of rental agreements and payments.

- Rental agreement creation and tracking
- Payment scheduling and processing
- Rent calculation and adjustments
- Tenant and landlord management
- Rental property inventory
- Rent collection and reporting

3.10 Users Module

User management and access control system.

- User account creation and management
- Role-based access control
- Permission management

- User activity logging and monitoring
- Password policies and security
- User profile and preferences

3.11 Settings Module

System configuration and customization.

- System-wide configuration options
- User interface customization
- Notification and alert settings
- Backup and recovery settings
- Integration and API settings
- System maintenance and updates

3.12 Legal Module

Legal compliance and regulatory management.

- Regulatory compliance tracking
- Legal document management
- License and permit tracking
- Compliance reporting and auditing
- Legal calendar and deadlines
- Regulatory updates and notifications

3.13 ONJN Module

Romanian National Office for Gambling (ONJN) compliance.

- ONJN reporting and compliance
- Gambling license management
- Regulatory submission tracking
- ONJN audit preparation
- Compliance documentation management
- Regulatory change monitoring

4. User Management & Security

Comprehensive user management and security features to ensure system integrity and data protection.

4.1 Authentication System

- JWT-based authentication with refresh tokens
- Secure password hashing with bcrypt
- Multi-factor authentication support
- Session management and timeout
- Login attempt monitoring and blocking
- Password reset and recovery

4.2 Role-Based Access Control

- Predefined user roles (Admin, Manager, Operator, Viewer)
- Custom role creation and management
- Granular permission system
- Module-level access control
- Function-level permissions
- Data access restrictions

4.3 Security Features

- Input validation and sanitization
- SQL injection prevention
- Cross-site scripting (XSS) protection
- CSRF token protection
- Rate limiting and request throttling
- Secure headers and CORS configuration
- Audit logging and monitoring

5. Database Schema

Comprehensive database design with proper relationships and data integrity.

5.1 Core Tables

users: User accounts and authentication

companies: Company information and profiles

locations: Physical location details

providers: Equipment provider information

cabinets: Gaming cabinet inventory

game_mixes: Game configuration mixes

slots: Slot machine details

invoices: Financial invoice records

rent_agreements: Rental agreement management

legal_documents: Legal and compliance documents

onjn_reports: ONJN compliance reports

audit_logs: System activity and audit trails

5.2 Data Relationships

- One-to-many relationships between companies and locations
- Many-to-many relationships between cabinets and game mixes
- Hierarchical relationships for organizational structure
- Referential integrity with foreign key constraints
- Soft delete implementation for data preservation
- Audit trail maintenance for all critical operations

6. API Endpoints

RESTful API design with comprehensive endpoint coverage for all modules.

6.1 Authentication Endpoints

POST /api/auth/login: User authentication

POST /api/auth/logout: User logout

POST /api/auth/refresh: Token refresh

GET /api/auth/profile: User profile retrieval

PUT /api/auth/profile: Profile update

POST /api/auth/change-password: Password change

6.2 Core Module Endpoints

GET /api/dashboard/stats: Dashboard statistics

GET /api/companies: Company listing with pagination

POST /api/companies: Company creation

GET /api/locations: Location listing

POST /api/locations: Location creation

GET /api/providers: Provider listing

GET /api/cabinets: Cabinet inventory

GET /api/game-mixes: Game mix configurations

GET /api/slots: Slot machine listing

GET /api/invoices: Invoice management

GET /api/rent: Rent management

GET /api/users: User management

GET /api/settings: System settings

GET /api/legal: Legal compliance

GET /api/onjn: ONJN reporting

6.3 API Features

- RESTful design principles
- JSON request/response format
- Pagination support for large datasets
- Search and filtering capabilities
- Sorting and ordering options
- Error handling with appropriate HTTP status codes
- Request validation and sanitization
- Rate limiting and throttling

7. Frontend Features

Modern React-based frontend with comprehensive user interface and user experience features.

7.1 User Interface Design

- Modern glass morphism design theme
- Responsive design for all screen sizes
- Dark theme with customizable color schemes
- Intuitive navigation and breadcrumbs
- Loading states and progress indicators
- Toast notifications and alerts
- Modal dialogs and confirmations

7.2 Data Management

- Redux Toolkit for state management
- RTK Query for API data fetching
- Optimistic updates and caching
- Real-time data synchronization
- Offline data persistence
- Data export and import capabilities

7.3 Interactive Features

- Advanced data tables with sorting and filtering
- Charts and analytics visualization
- Drag-and-drop functionality
- File upload and management
- Search and autocomplete features
- Bulk operations and batch processing
- Keyboard shortcuts and accessibility

8. Deployment & Configuration

Comprehensive deployment and configuration management for production environments.

8.1 Environment Configuration

- Environment-specific configuration files
- Environment variable management
- Database connection configuration
- API endpoint configuration
- Security and encryption settings
- Logging and monitoring configuration

8.2 Deployment Options

- Docker containerization support
- Cloud deployment (AWS, Azure, GCP)
- On-premises deployment
- Load balancing and scaling
- SSL/TLS certificate management
- Database backup and recovery

8.3 Monitoring & Maintenance

- Application performance monitoring
- Error tracking and alerting
- Database performance monitoring
- System health checks
- Automated backup scheduling
- Log aggregation and analysis

9. Testing & Quality Assurance

Comprehensive testing strategy to ensure system reliability and quality.

9.1 Testing Strategy

- Unit testing for individual components
- Integration testing for API endpoints
- End-to-end testing for user workflows
- Performance and load testing
- Security testing and vulnerability assessment
- User acceptance testing (UAT)

9.2 Quality Assurance

- Code review and peer programming
- Automated testing in CI/CD pipeline
- Code quality metrics and analysis
- Documentation standards and maintenance
- Performance benchmarking
- Accessibility compliance testing

10. Performance Requirements

Performance specifications and optimization requirements for optimal system operation.

10.1 Response Time Requirements

Page Load Time: < 3 seconds for initial page load

API Response Time: < 500ms for standard operations

Search Operations: < 2 seconds for complex queries

Report Generation: < 30 seconds for large datasets

File Upload: < 10 seconds for files up to 10MB

Database Queries: < 100ms for indexed queries

10.2 Scalability Requirements

- Support for 100+ concurrent users
- Database handling 1M+ records
- Horizontal scaling capabilities
- Load balancing support
- Caching strategies for performance
- Database query optimization

11. Security Requirements

Comprehensive security requirements to protect sensitive data and ensure system integrity.

11.1 Data Protection

- Encryption of sensitive data at rest
- Encryption of data in transit (HTTPS/TLS)
- Secure password storage with bcrypt
- Data backup encryption
- PII (Personal Identifiable Information) protection
- Data retention and disposal policies

11.2 Access Control

- Multi-factor authentication (MFA)
- Role-based access control (RBAC)
- Session management and timeout
- IP whitelisting and geolocation restrictions
- Failed login attempt monitoring
- Account lockout policies

11.3 Compliance & Auditing

- GDPR compliance for data protection
- SOX compliance for financial data
- Gaming industry regulatory compliance
- Comprehensive audit logging
- Regular security assessments
- Incident response procedures

12. Maintenance & Support

Ongoing maintenance and support requirements for system sustainability.

12.1 System Maintenance

- Regular security updates and patches
- Database maintenance and optimization
- Performance monitoring and tuning
- Backup verification and testing
- System health monitoring
- Capacity planning and scaling

12.2 Support Services

- 24/7 technical support availability
- Bug tracking and resolution
- Feature request management
- User training and documentation
- System upgrades and migrations
- Emergency response procedures

12.3 Documentation

- User manuals and guides
- Administrator documentation
- API documentation and examples
- Troubleshooting guides
- Best practices and recommendations
- Video tutorials and training materials

Conclusion

CASHPOT ERP 2.0 represents a comprehensive solution for gaming management, providing all necessary tools and features for efficient operation of gaming businesses. The system is designed with scalability, security, and user experience in mind, ensuring long-term success and compliance with industry standards.

This requirements document serves as the foundation for development, testing, and deployment of the CASHPOT ERP 2.0 system. All stakeholders should refer to this document for guidance on system capabilities, limitations, and implementation details.

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