



NAVRobotec Private Limited

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CIN: U74909UP2025PTC226167

SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

for

CheckIAS Answer Copy Checking Platform

(Project Code: 25INS004)

Document Version	1.0 (Draft)
Prepared For	<i>Name of Client</i>
Prepared By	NAVRobotec Private Limited
Approved By	<i>[To be filled by Client]</i>
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Change Control

Version	Date	Changes	Approved By
1.0	December 28, 2025	Initial Draft	Ashutosh Vishwakarma



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1 Introduction

1.1 Purpose

This Software Requirements Specification (SRS) document formally defines the complete set of functional and non-functional requirements for the **CheckIAS Answer Copy Checking Platform** (Project Code: 25INS004). This document serves as a contractual agreement between NAVRobotec Private Limited (the developer) and the client, ensuring mutual understanding of the system's capabilities, constraints, and deliverables. It is intended for use by:

- **Project Stakeholders:** To understand system scope and capabilities
- **Development Team:** As a blueprint for system design and implementation

1.2 Scope

The CheckIAS Answer Copy Checking Platform is a comprehensive web-based solution designed to facilitate the digital submission and management of UPSC answer copies. The system provides registered candidates with a structured mechanism to upload answer copies in PDF format, avail of limited free evaluations, and subscribe to premium plans for unlimited submissions within defined validity periods. Key scoped functionalities include:

- Secure user authentication and profile management
- Tiered submission system (free and paid)
- Integrated payment processing via Razorpay
- Administrative dashboard for system oversight
- Support call management for premium users
- Comprehensive reporting and audit trails



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1.3 Definitions, Acronyms, and Abbreviations

Term/Abbreviation	Definition
UPSC	Union Public Service Commission, the central recruiting agency of India
SRS	Software Requirements Specification
BaaS	Backend-as-a-Service (referring to Supabase platform)
API	Application Programming Interface
PDF	Portable Document Format, the required format for answer copy submissions
SLA	Service Level Agreement
UI	User Interface
UX	User Experience
GDPR	General Data Protection Regulation (for international user considerations)
PCI DSS	Payment Card Industry Data Security Standard

1.4 References

1. IEEE 29148-2018: Systems and Software Engineering — Life Cycle Processes — Requirements Engineering
2. Razorpay API Documentation v2.0
3. Supabase Documentation and Security Guidelines
4. Initial Stakeholder Meeting Minutes (2024-12-27)

1.5 Document Overview

This SRS is organized into seven major sections:

- **Section 1: Introduction** – Provides the document’s purpose, scope, and references



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- **Section 2: Overall Description** – Describes the product perspective, user classes, and operating environment
- **Section 3: Specific Requirements** – Details all functional and non-functional requirements
- **Section 4: System Interfaces** – Defines external and internal interfaces
- **Section 5: Hosting and Maintenance** – Outlines deployment and support arrangements
- **Section 6: Out of Scope** – Explicitly excludes certain functionalities
- **Section 7: Future Enhancements** – Lists potential future features

2 Overall Description

2.1 Product Perspective

The CheckIAS Answer Copy Checking Platform operates as an independent, cloud-hosted web application that interfaces with external payment gateways and authentication services. The system architecture follows a three-tier model:

- **Presentation Layer:** Responsive web interface built with React.js
- **Application Layer:** Supabase backend services with PostgreSQL database
- **Integration Layer:** Razorpay payment gateway and email services

2.2 Product Functions

The system shall perform the following core functions:

- (a) **User Registration and Authentication:** Secure account creation, email verification, and session management
- (b) **Answer Copy Submission:** PDF upload with metadata tagging (subject, year, paper code)



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- (c) **Subscription Management:** Plan selection, payment processing, and validity tracking
- (d) **Content Management:** Storage, retrieval, and display of submitted answer copies
- (e) **Administrative Control:** Comprehensive dashboard for system monitoring and user management
- (f) **Support System:** Ticketing and call request mechanism for premium users
- (g) **Reporting:** Generation of usage statistics and financial reports

2.3 User Classes and Characteristics

User Class	Characteristics and Privileges
Guest/Visitor	<ul style="list-style-type: none">• Can browse public pages (homepage, features, pricing)• Can view system overview and benefits• Cannot access submission functionality• Can register to become a candidate
Registered Candidate (Free Tier)	<ul style="list-style-type: none">• Has completed email verification• Can submit maximum 2 answer copies (PDF format)• Can view own submission history• Can upgrade to paid subscription• Can update profile information
Premium Candidate (Paid Tier)	<ul style="list-style-type: none">• Has active subscription plan• Can submit unlimited answer copies during plan validity• Can request support calls (limited per plan)• Receives priority processing• Access to detailed analytics



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Administrator	<ul style="list-style-type: none">• Full system access• Manages user accounts and permissions• Views all submissions and transactions• Processes support requests• Configures system parameters• Generates audit reports
Reviewer (Future Role)	<ul style="list-style-type: none">• <i>[Reserved for future enhancement]</i>• Will evaluate submitted answer copies• Will provide feedback and scores

2.4 Operating Environment

2.4.1 Hardware Requirements

- **Server:** Cloud-based virtual machine with minimum 4 vCPUs, 8GB RAM, 100GB SSD storage
- **Client:** Modern web browser with JavaScript enabled

2.4.2 Software Requirements

Component	Specification
Frontend Framework	React.js 18+ with TypeScript
Backend Platform	Supabase (PostgreSQL 14+, GoTrue Auth, Storage)
Payment Gateway	Razorpay API v2
Email Service	Supabase Edge Functions with Resend/SendGrid
File Storage	Supabase Storage with PDF validation
Development Environment	Node.js 18+, npm/yarn, Git version control
Production Hosting	Vercel/Netlify (frontend), Supabase (backend)



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2.5 Design and Implementation Constraints

1. **Payment Integration:** Razorpay APIs must be provided by the client; no alternative payment gateways will be implemented without change request
2. **File Format:** Only PDF files (max 20MB) will be accepted for answer copy submissions
3. **Browser Support:** Must support Chrome 90+, Firefox 88+, Safari 14+, Edge 90+
4. **Subscription Plans:** Three fixed plans (1 month, 3 months, 6 months) – modifications require redeployment
5. **Authentication:** Email/password based; OAuth providers may be added as future enhancement

2.6 Assumptions and Dependencies

2.6.1 Assumptions

- Users have reliable internet access and basic digital literacy
- Answer copies are available in digitized PDF format
- Payment gateway (Razorpay) will be available 99.9% of the time
- Client will provide all required legal disclaimers and terms of service
- Users will not attempt to submit malicious or corrupted files

2.6.2 Dependencies

Dependency	Impact if Unavailable
Razorpay Payment Gateway	Subscription purchases will fail; revenue impacted
Supabase Services	System becomes non-functional



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Internet Connectivity	Users cannot access the platform
Email Delivery Service	User verification and notifications fail
Client-provided Content	Legal pages and disclaimers will be incomplete

3 Specific Requirements

3.1 Functional Requirements

3.1.1 User Authentication and Authorization (FR-AUTH)

ID	Requirement
FR-AUTH-01	The system shall allow new users to register using valid email address and password (minimum 8 characters, one uppercase, one number)
FR-AUTH-02	The system shall send verification email with secure link upon registration; account activation requires email verification
FR-AUTH-03	The system shall allow password reset via email-based OTP (One-Time Password) valid for 15 minutes
FR-AUTH-05	The system shall prevent concurrent sessions from the same user account
FR-AUTH-06	The system shall maintain audit log of all login attempts (successful and failed) with timestamp and IP address

3.1.2 Answer Copy Submission (FR-SUB)

ID	Requirement
FR-SUB-01	Free-tier users shall be limited to exactly two (2) answer copy submissions during their account lifetime
FR-SUB-02	The system shall validate uploaded files for: PDF format, maximum size 20MB



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FR-SUB-03	Each submission shall require metadata: Subject (dropdown), Year (2020-present), Paper Code (text, 10 char max)
FR-SUB-04	Premium-tier users shall have unlimited submissions during active subscription period
FR-SUB-05	The system shall display clear warning when free users attempt third submission with upgrade prompt
FR-SUB-06	Submitted copies shall be stored with unique identifier following format: CheckIAS_[UserID]_[Timestamp]_[RandomString].pdf

3.1.3 Subscription Management (FR-SUBSCR)

ID	Requirement
FR-SUBSCR-01	The system shall offer three subscription plans: <ul style="list-style-type: none">• Plan A: Rs.999 for 1 month validity• Plan B: Rs.2,499 for 3 months validity• Plan C: Rs.4,499 for 6 months validity
FR-SUBSCR-02	Only one active plan shall be permitted per user at any time
FR-SUBSCR-03	Plan auto-renewal shall be disabled; users must manually renew before expiry
FR-SUBSCR-04	The system shall send reminder emails at 7 days, 3 days, and 1 day before plan expiry
FR-SUBSCR-05	Users shall be able to view their current plan status, expiry date, and submission count
FR-SUBSCR-06	The system shall provide pro-rata upgrade option from lower to higher tier plans



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3.1.4 Payment Processing (FR-PAY)

ID	Requirement
FR-PAY-01	The system shall integrate Razorpay Checkout for payment processing
FR-PAY-02	All payment transactions shall be secured with 256-bit SSL encryption
FR-PAY-03	The system shall verify payment webhook from Razorpay before activating subscription
FR-PAY-04	Failed payments shall be logged with error code and presented to user with retry option
FR-PAY-05	The system shall generate invoices (PDF format) for all successful transactions
FR-PAY-06	Refund requests shall be processed manually through admin interface within 7 working days

3.1.5 User Dashboard (FR-DASH)

ID	Requirement
FR-DASH-01	Each user shall have personalized dashboard showing: Submission count, Active plan, Recent activity
FR-DASH-02	The dashboard shall display submission history in paginated table (10 records per page)
FR-DASH-03	Users shall be able to download their previously submitted answer copies within 90 days of submission
FR-DASH-04	Dashboard shall provide visual indicators for: Free submissions remaining, Plan expiry status, Support tickets open
FR-DASH-05	Users shall be able to update profile information (name, contact number, password)

3.1.6 Support Call Request (FR-SUPPORT)



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ID	Requirement
FR-SUPPORT-01	Only premium users with active subscription shall be eligible to request support calls
FR-SUPPORT-02	Each plan shall include limited support calls: <ul style="list-style-type: none">• Plan A: 2 calls per month• Plan B: 6 calls per 3 months• Plan C: 12 calls per 6 months
FR-SUPPORT-03	Support request form shall include: Preferred time slot (9 AM-6 PM), Contact number, Issue description
FR-SUPPORT-04	The system shall send confirmation email upon call scheduling
FR-SUPPORT-05	Admins shall be able to update call status: Pending, Scheduled, Completed, Cancelled

3.1.7 Administrative Functions (FR-ADMIN)

ID	Requirement
FR-ADMIN-01	Admin dashboard shall provide comprehensive metrics: Total users, Active subscriptions, Revenue, Submission trends
FR-ADMIN-02	Admins shall be able to search/filter users by: Email, Subscription status, Registration date
FR-ADMIN-03	Admins shall have ability to manually adjust free submission count for specific users (with audit trail)



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FR-ADMIN-04	The system shall generate monthly reports in CSV format covering: New registrations, Subscriptions, Revenue
FR-ADMIN-05	Admin actions shall be logged with: Admin ID, Action, Timestamp, IP address
FR-ADMIN-06	Admins shall be able to broadcast announcements to all users (displayed on user dashboard)
FR-ADMIN-07	Admins shall be able to activate/revoke paid plan for any user

3.2 Non-Functional Requirements

3.2.1 Performance Requirements (NFR-PERF)

Category	Requirement
Response Time	<ul style="list-style-type: none">• Page load time ≤ 2 seconds (above-the-fold content)• API response time $\leq 500ms$ for 95% of requests• File upload processing $\leq 10seconds$ for 20 MB files
Throughput	System shall support 100 concurrent users and 10 simultaneous file uploads
Scalability	Architecture shall allow horizontal scaling to support 10,000 registered users without redesign
Reliability	System shall maintain 95% uptime excluding scheduled maintenance

3.2.2 Security Requirements (NFR-SEC)

Category	Requirement
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Data Protec- tion	<ul style="list-style-type: none">• All sensitive data (passwords, payment info) encrypted at rest and in transit• Password hashing using bcrypt
Access Con- trol	<ul style="list-style-type: none">• Role-based access control (RBAC) with minimum privilege principle
Compliance	<ul style="list-style-type: none">• HTTPS enforced across entire application• Payment processing PCI DSS compliant via Razorpay

3.2.3 Usability Requirements (NFR-USE)

Category	Requirement
User Interface	<ul style="list-style-type: none">• Responsive design compatible with desktop, tablet, and mobile (320px+ viewports)• Attempt for maximum WCAG 2.1 AA compliance for accessibility• Consistent navigation across all pages
User Experi- ence	<ul style="list-style-type: none">• New user registration completed within 3 minutes• File submission process completed within 5 steps• Error messages in clear, non-technical language with resolution suggestions
Documentation	Comprehensive help section with FAQs, video tutorials, and contact information

3.2.4 Maintainability Requirements (NFR-MAIN)

Category	Requirement
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Code Quality	<ul style="list-style-type: none">• Modular code structure with separation of concerns• Comprehensive code documentation (JSDoc for JavaScript, comments for complex logic)• Unit test coverage $\geq 80\%$ for critical functions
Deployment	<ul style="list-style-type: none">• Automated CI/CD pipeline for testing and deployment• Environment-specific configuration management
Monitoring	<ul style="list-style-type: none">• Application performance monitoring (APM) integration• Error tracking with automatic alerts• Usage analytics and reporting

4 System Interfaces

4.1 User Interfaces

4.1.1 Web Interface Specifications

Screen	Key Elements
Landing Page	Hero section, Feature highlights, Pricing table, Registration CTA
Login/Registration	Form validation, Password strength indicator, Social proof elements
User Dashboard	Stats cards, Recent activity, Quick actions, Notifications
Submission Page	File upload area, Metadata form, Progress indicator, History table
Subscription Page	Plan comparison table, Payment gateway integration, Terms acceptance
Admin Dashboard	Interactive charts, User management table, System alerts, Report generator



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4.2 Hardware Interfaces

Not applicable – cloud-based solution with no direct hardware dependencies.

4.3 Software Interfaces

Interface	Specification
Razorpay API	<ul style="list-style-type: none">• Create Order: POST /v1/orders• Verify Payment: POST /v1/webhooks• Fetch Payment: GET /v1/payments/{id}
Supabase API	<ul style="list-style-type: none">• Authentication: /auth/v1/*• Database: /rest/v1/*• Storage: /storage/v1/*
Email Service	SMTP/API integration for transactional emails (welcome, reset, notifications)

4.4 Communication Interfaces

- RESTful APIs over HTTPS (TLS 1.2+)
- WebSocket for real-time notifications (optional enhancement)
- Webhooks for payment confirmation

5 Hosting and Maintenance

5.1 Hosting Arrangement

NAVRobotec Private Limited shall provide comprehensive hosting services for the initial three-month period post-deployment, including:

- Domain registration and SSL certificate management



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- Cloud infrastructure provisioning and configuration
- 24/7 basic monitoring and alerting
- Uptime guarantee of 95%

5.2 Maintenance and Support

5.2.1 Warranty Period (Months 1-3)

Service	Details
Bug Fixes	All critical and major bugs reported will be fixed within 48 hours
Technical Support	Email support with 12-hour response time during business hours
Updates	Security patches and minor updates applied automatically

5.2.2 Post-Warranty (Month 4 onwards)

- Hosting responsibility transfers to client or third-party provider
- Optional Monthly Maintenance Contract (AMC) available at 10% of project cost
- Source code and documentation handover after final payment
- Knowledge transfer sessions (2 sessions of 4 hours each)

5.3 Service Level Agreement (SLA)

Incident Severity	Response Time	Resolution Time
Critical (System Down)	1 hour	4 hours
Major (Key Feature Failed)	4 hours	24 hours



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Minor (Cosmetic Issues)	24 hours	7 days
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6 Out of Scope

The following items are explicitly excluded from the current project scope:

1. **AI-Based Answer Evaluation:** Automated scoring or feedback generation using artificial intelligence
2. **Mobile Applications:** Native iOS or Android applications (web app is responsive)
3. **Offline Functionality:** System operation without internet connectivity
4. **Multiple Payment Gateways:** Integration beyond Razorpay
5. **Reviewer Assignment:** Automated allocation of answer copies to human evaluators
6. **Bulk Upload:** Simultaneous submission of multiple answer copies
7. **Social Features:** User forums, discussion boards, or community features
8. **Third-party Integrations:** LMS, CRM, or other external system integrations
9. **Custom Report Generation:** User-defined report formats or analytics
10. **White-labeling:** Branding customization for different institutions

7 Future Enhancements

The following features are identified as potential enhancements for future releases:

Enhancement	Description
Advanced Analytics Dashboard	Detailed insights into submission patterns, performance trends



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Mobile Applications	Native apps for iOS and Android platforms
Multi-language Support	Interface and content in regional languages
Video Call Support	Integrated video consultation with subject experts
Peer Comparison	Anonymous comparison with performance of other candidates
Question Bank Integration	Access to previous years' questions with model answers
Gamification	Badges, achievements, and leaderboards to encourage engagement
API Access for Institutions	Allow coaching institutes to manage their students' submissions

APPROVAL

This document is formally approved by the authorized representative of **CheckIAS**.

Organization	CheckIAS
Name	
Title / Designation	
Signature	
Date	