



**JAIN COLLEGE OF BBA BCA & COMMERCE BELAGAVI**

(Affiliated to Rani Channamma University, Belagavi and Recognized by Govt. Of Karnataka)

**DEPARTMENT OF**

**Bachelor of Computer Applications**

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**SOFTWARE REQUIREMENT**

**SPECIFICATION (SRS) ON**

**“D-Mitra”**

**UNDER THE GUIDENCE OF**

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**SUBMITTED BY:**

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# 1. INTRODUCTION

## 1.1 PURPOSE

- D-Mitra is like a one-stop-shop for all things related to joining the Indian armed forces. It gives detailed info on recruitment, notifications, and exam prep.
- It sends timely alerts about available posts, keeping aspirants updated. D-Mitra also provides study materials like syllabi breakdowns and practice papers to help candidates prepare well.
- Its aim is to support those who want to serve their nation in the armed forces by giving them the guidance and resources they need to succeed.

## 1.2 PROJECT SCOPE

Certainly! Considering the current IT scenario, here's the scope of the D-Mitra project:

- Create a comprehensive armed forces recruitment system with efficient data management, notifications via email, SMS, and push, and access to study materials.
- Design user-friendly interfaces for all devices, incorporate analytic for better user experience, and ensure compliance and security.
- Integrate with external systems for real-time data, conduct rigorous testing, and establish feedback-driven improvement mechanisms.

## 1.3 REFERENCE

- The D Mitra project leveraged technologies from SonyTech for backend development, ensuring robust and scalable solutions.
- W3Schools provided valuable resources and documentation for frontend development, aiding in creating user-friendly interfaces.
- Bootstrap framework boosted D Mitra platform with responsive design, improving functionality, usability, and aesthetics.

## 2. OVERALL DESCRIPTION

### 2.1 PRODUCT PERSPECTIVE

The D-Mitra project aims to create an online platform for individuals aspiring to join the Indian armed forces. It provides vital recruitment information, notifications, and study materials. The platform ensures real-time data accuracy through external system interfaces, offering seamless access across devices. Robust security measures protect user data, with ongoing updates to meet evolving user needs and recruitment processes.

### 2.2 PRODUCT FEATURES

- Timely notifications and real-time updates on job postings, exam dates, and recruitment changes.
- Detailed recruitment processes, eligibility information, and a library of tailored study materials.
- Personalized dashboard with progress tracking, recommended materials, and analytics.
- Mock tests, assessments, and expert guidance for exam practice.
- Interactive forums for community engagement and support.
- Mobile app compatibility and robust security measures to protect user data.

### 2.3 USER CLASSES AND CHARACTERISTICS

- **Visitors:** Browse general recruitment info without logging in.
- **Admins:** Manage content, user accounts, technical issues, and security.
- **Users:** Registered members with access to personalized features and study materials.
- **Forum Participants:** Engage in discussions and share insights.
- **Feedback Providers:** Offer suggestions to improve the platform.

### 2.4 OPERATING ENVIRONMENT

The D-Mitra system operates in a complex environment with specific requirements:

- **Hardware:** Requires powerful servers, storage, networking, and support for various client devices.
- **Software:** Needs compatibility with popular operating systems, web servers, databases, programming languages, security software, CMS, and communication tools.
- **Infrastructure:** Deployment on cloud services, use of load balancers, containerization, and monitoring/logging tools.

- **Compliance:** Compliance with data protection regulations, accessibility standards, and government guidelines.
- **Scalability and Performance:** Scalable architecture, performance optimization, and caching mechanisms for responsiveness.
- **Development and Deployment:** Agile methodology, CI/CD pipelines, and version control for efficient development and deployment processes.

## 2.5 DESIGN & IMPLEMENTATION CONSTRAINTS

The Waterfall model has certain design and implementation constraints:

- **Sequential Process:** It follows a step-by-step approach, which can cause delays if there are dependencies between phases.
- **Limited Flexibility:** Changes are difficult once a phase is completed, making it challenging to adapt to new requirements.
- **Long Development Cycle:** It takes longer compared to other models, impacting time-to-market for projects with tight deadlines.
- **Handling Uncertainty:** It assumes all requirements are known upfront, which can be problematic if requirements change later.
- **Risk of Inadequate Testing:** Testing is deferred until late, increasing the risk of identifying issues late in the project.
- **Documentation Overhead:** It requires extensive documentation, which can be time-consuming and resource-intensive.
- **Resource Dependency:** It needs dedicated resources for each phase, posing challenges in resource management.

## 3. SYSTEM FEATURES

### 3.1 FUNCTIONAL REQUIREMENTS

- **User Registration and Authentication:** New users register and verify email; edit profiles and recover passwords.
- **Content Management:** Admins manage notifications and materials.
- **Notification System:** Users receive customizable notifications.
- **Study Material Access:** Users access and download categorized materials.
- **Discussion Forums:** Users interact in moderated forums.

- **Search Functionality:** Users search with filtering options.
- **Bookmarking and Favourites:** Users bookmark and manage favourites.
- **Progress Tracking:** Users track prep progress and view reports.
- **Feedback Mechanism:** Users submit, admins resolve feedback.

### 3.2 NON FUNCTIONAL REQUIREMENTS

- **User Registration and Authentication:** Fast, secure, multi-factor authentication.
- **Content Management:** Fast updates, scalable.
- **Notification System:** Prompt delivery, scalable.
- **Study Material Access:** Quick, supports high traffic.
- **Search Functionality:** Rapid results, handles many queries.
- **Security Measures:** Encryption, multi-factor authentication, monitoring.

### 3.3 PERFORMANCE REQUIREMENT

- **Performance:** Actions within 2-3 seconds, handles 10,000 users.
- **Reliability:** Available 99.9% of the time, daily backups, recover in 1 hour.
- **Security:** Data encryption, role-based access control.
- **Usability:** Intuitive interface, accessible to all users.
- **Maintainability:** Modular design for easy updates, comprehensive documentation.
- **Scalability:** Easily adds servers, handles growing data.

### 3.4 SAFETY REQUIREMENT

- **Data Protection:** Encrypt user data, perform backups.
- **User Authentication:** Secure login, role-based access.
- **System Integrity:** Monitor for unauthorized access, conduct audits.
- **Compliance:** Adhere to GDPR, Indian data privacy laws.
- **Incident Response:** Have a response plan, notify users of breaches.
- **Availability:** Maintain high uptime, redundancy measures.

### 3.5 SECURITY REQUIREMENT

- **Data Protection:** Encrypt data, use encrypted databases.
- **User Authentication:** Strong passwords, multi-factor authorization, role-based access.
- **System Security:** Intrusion detection, audits, patch management.
- **Development Practices:** Coding standards, reviews, security tools.

- **Network Security:** Firewalls, segmentation, HTTPS/TLS.
- **Monitoring and Logging:** Log activities, real-time monitoring.
- **Compliance and Legal:** GDPR compliance, audit trails.
- **Access Control:** Least privilege, secure sessions.
- **Backup and Recovery:** Regular backups, recovery plan.

### 3.6 SOFTWARE QUALITY ATTRIBUTES

- **Performance:** Fast response time, support for large user base, handle multiple transactions.
- **Reliability:** Minimal downtime, quick error recovery.
- **Usability:** Easy navigation, accessibility, comprehensive documentation.
- **Security:** Data encryption, access control, security response plan.
- **Maintainability:** Easy updates, clear documentation, automated testing.
- **Portability:** Compatibility with various browsers, devices, OS.
- **Efficiency:** Effective resource utilization, workload balancing.
- **Compliance:** Data protection laws compliance, detailed activity records.
- **Localization:** Support for multiple languages, regional preferences.

## 4. CONCLUSION

In conclusion, the D-Mitra project aims to revolutionize the process of joining the Indian armed forces by providing a comprehensive online platform. With its focus on accessibility, security, and reliability, D-Mitra offers aspiring candidates detailed information, study materials, and community interaction, all in one place. By adhering to stringent performance, safety, and security requirements, D-Mitra ensures a top-notch user experience while maintaining compliance with relevant regulations. With its commitment to excellence, D-Mitra stands poised to empower individuals in their journey towards serving their nation through the armed forces.