



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.