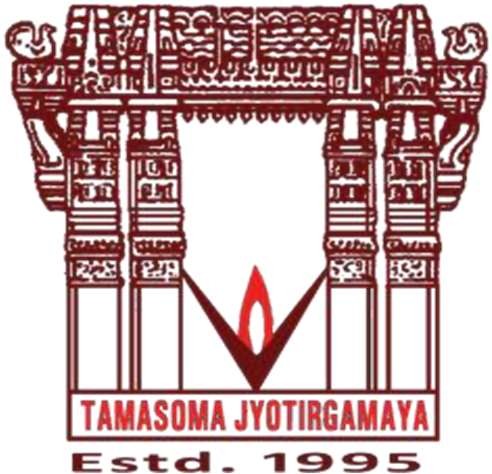
Software Requirements Specification

**On**

Faculty Skill Enhancement Activity Tracker



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**SOFTWARE REQUIREMENTS SPECIFICATION:**

**ABSTRACT:**

The Faculty Skill Enhancement Tracker is a website which focuses on providing the faculty of Department of Computer Science and Engineering an easy way to keep track of their Skill Development Programme data as well as reviewed paper data, which are called as Events together. The website provides the individual faculty to upload their event details, it may be an SDP conducted by them, or details related to a paper reviewed by them. They can also view their details in the dashboard as well. The website also allows the faculty to individually access their event details which were uploaded earlier. It helps the faculty managing these files by considering them as administrators (admin) and giving them privileged rights to view data of all the faculties as a table, and access individual details as well. The website also allows the administrators to sort the tabular data accordingly and download the table also. The administrators can also download individual faculty certificates.

**1.INTRODUCTION**

Our project focuses on developing a Faculty Skill Enhancement Activity Records system (FSAR) aimed at efficiently managing and documenting faculty engagements within our academic institution. FSAR will streamline the recording of faculty involvement as resource persons and reviewers, aiding college staff in maintaining comprehensive records while providing faculty members with easy access to their contributions. This project aims to enhance administrative efficiency and promote faculty development by fostering a culture of recognition and continuous improvement.

**1.1 PURPOSE**

This document is intended for the following group of people:-

* Developers for the purpose of maintenance and new releases of the software.
* Documentation writers.
* Management of the bank.
* Testers

**1.2 SCOPE**

This document applies to Faculty Skill Enhancement Activity tracking software (FSEA). This software offers benefits such keeping a track of all the seminars and workshops conducted by faculty, maintaining the certificates of the faculty, enabling the faculty to keep track of their seminars, and enabling admins, college staff to find the data and sort it as required. It also allows the administrator as well as users to upload their activity. The software takes the user data as input along with the certificates and store them. The outputs then comprise of sorted tabular display of faculty data and also the dashboard for each faculty. The software is expected to complete in duration of 1.5 month.

**1.3 DEFINITONS,ACRONYMS AND ABBREVATIONS**

* FSEA Faculty Skill Enhancement Activity
* FDP Faculty Development Programs
* AY Academic Year
* FSAR: Faculty Skill Enhancement Activity Records
* FRA: Faculty Reviewer Activity
* ECR: Electronic Contribution Report
* FDC: Faculty Development Committee
* SDB: Skill Development Bank
* ARS: Activity Reporting System
* AEP: Academic Engagement Profile

**1.4 REFERENCES**

The references for the above software are as follows:-

i. www.google.co.in

ii. [www.wikipedia.com](http://www.wikipedia.com)

iii. Files from college

**1.5 OVERVIEW**

Section 1.0 discusses the purpose and scope of the software.

Section 2.0 describes the overall functionalities and constraints of the software and user characteristics.

Section 3.0 and 4.0 details all the requirements needed to design the software.

**2. THE OVERALL DESCRIPTION**

**2.1 PRODUCT PERSPECTIVE**

From a product perspective, the Faculty Skill Enhancement Activity Records (FSAR) system serves as a comprehensive solution tailored to meet the specific needs of academic institutions in managing and documenting faculty engagements. By providing intuitive interfaces for both administrative staff and faculty members, FSAR enhances efficiency in recording and tracking faculty involvement as resource persons and reviewers. Its centralized database ensures easy access to records, while automated reporting features streamline administrative tasks. FSAR is designed to seamlessly integrate into existing institutional workflows, facilitating a culture of recognition and continuous improvement by providing valuable insights into faculty contributions and academic engagement.

**2.2 PRODUCT FUNCTIONS**

The major functions that ATM performs are described as follows:-

• Individual Faculty Dashboards: Each faculty member has a dedicated dashboard accessible upon login, providing a personalized overview of their engagement activities and contributions within the institution.

• Activity Summary: The dashboard displays a summary of the faculty member's involvement as both a resource person and a reviewer, highlighting key metrics such as the number of workshops conducted, seminars attended, peer reviews completed, etc.

• Contribution Metrics: Detailed metrics and analytics showcase the faculty member's impact and involvement in skill enhancement activities, including the number of sessions conducted, participants reached, feedback received, and more.

• Progress Tracking: Faculty can track their progress towards individual and departmental goals related to skill enhancement and professional development, fostering accountability and motivation.

• Record Access: The dashboard provides easy access to historical records of past engagements and contributions, allowing faculty members to review their professional journey and accomplishments over time.

• Customization Options: Faculty can customize their dashboard preferences, such as choosing which metrics to prioritize, setting goals, and receiving notifications for upcoming engagements or deadlines.

• Communication Tools: Integration with communication tools allows faculty members to collaborate with colleagues, share resources, and seek feedback directly from their dashboard interface.

• Support Resources: Access to support resources and training materials within the dashboard helps faculty members enhance their skills and stay updated on best practices in teaching, research, and academic engagement. • Tabular Record Sorting: Faculty members can sort the tabular records displayed on their dashboard based on their specific requirements, such as sorting workshops by date, participant count, or topic, enabling efficient navigation and analysis of their engagement history.

• Data Download Capability: The dashboard allows faculty members to download tabular data in various formats (e.g., CSV, Excel) for further analysis or reporting purposes. This feature enables faculty to easily export their engagement records and share them with colleagues or use them for academic or administrative purposes as needed.

**2.3 USER CHARACTERISTICS**

There are different kinds of users that will be interacting with the system. The intended users of the software are as follows:-

1. Faculty Users:

• Role: They primarily interact with the system to access and review their own engagement data, including their activities as resource persons and reviewers.

• Characteristics:

• Interested in viewing their individual contribution metrics and progress towards personal and departmental goals.

• Require easy access to their historical records and the ability to track their professional development over time.

• Prefer a user-friendly interface with customizable options to personalize their dashboard experience.

2. Administrators and College Heads:

• Role: They oversee the overall functioning of the system and utilize it to gain insights into faculty engagement activities for decision-making purposes.

• Characteristics:

• Need access to comprehensive data analytics and reports to assess faculty engagement trends and performance at both individual and departmental levels.

• Require administrative privileges to manage user accounts, set goals, and generate institution-wide reports.

• Value functionalities for data visualization, trend analysis, and benchmarking against predefined targets or benchmarks.

3. Maintenance Staff:

• Role: They are responsible for the technical upkeep and maintenance of the software system, ensuring its smooth operation and resolving any technical issues that may arise.

• Characteristics:

• Proficient in technical aspects of software maintenance and troubleshooting.

• Require access to system logs and diagnostics tools to monitor performance and identify potential issues.

• Prefer streamlined processes for software updates, backups, and database maintenance to minimize downtime and ensure data integrity.

**2.4 CONSTRAINTS**

The major constraints that the project has are as follows:-

• Data Privacy and Security: The software must adhere to strict data privacy regulations, ensuring that sensitive faculty information is securely stored and accessed only by authorized users. Compliance with data protection laws such as GDPR or HIPAA is essential to avoid legal repercussions.

• Scalability: The software should be capable of handling a growing number of faculty members and engagement records without compromising performance. Scalability constraints may arise due to increased data volume, user load, or system complexity, requiring efficient database optimization and infrastructure scaling strategies.

• Integration with Existing Systems: Integration with other institutional systems such as HR databases, course management systems, or academic repositories may pose constraints in terms of data synchronization, interoperability, and compatibility with existing workflows and protocols.

• User Adoption and Training: Ensuring widespread adoption of the software among faculty members, administrators, and maintenance staff requires comprehensive training programs, user-friendly interfaces, and ongoing support services. Resistance to change and varying levels of technical proficiency among users may impede successful implementation and utilization of the software.

• Budgetary Constraints: Budget limitations may constrain the scope of software development, implementation, and maintenance activities. Balancing cost considerations with the need for robust features, scalability, and security measures is crucial to avoid overspending or compromising on software quality.

• Technical Infrastructure: Availability of reliable internet connectivity, adequate server resources, and compatibility with diverse computing environments (e.g., desktops, laptops, mobile devices) are essential constraints that influence the software's usability, accessibility, and performance.

• Customization and Adaptability: The software should offer sufficient flexibility to accommodate varying institutional policies, reporting requirements, and user preferences. Constraints may arise in balancing the need for customization with maintaining a standardized framework and ensuring software stability and compatibility across different user groups.

**2.5 ASSUMPTIONS NAD DEPENDENCIES**

The requirements stated in the SRS could be affected by the following factors:

**Assumptions:**

1. Faculty Engagement Data Accuracy: It is assumed that the data entered by faculty members regarding their engagement activities as resource persons and reviewers is accurate and reliable.

2. User Availability: Faculty members, administrators, and maintenance staff are assumed to have regular access to the software and sufficient time to input and review data, attend training sessions, and address any technical issues. 3. Institutional Support: The project assumes institutional support and commitment to the implementation and maintenance of the software, including allocation of necessary resources such as funding, infrastructure, and personnel.

4. Compliance with Regulations: The software development and implementation process assumes compliance with relevant legal and regulatory requirements related to data privacy, security, and accessibility.

5. User Training: Successful utilization of the software depends on comprehensive training programs and user support services provided to faculty members, administrators, and maintenance staff.

**Dependencies:**

1. Data Integration: The project depends on seamless integration with existing institutional systems such as HR databases, course management systems, and academic repositories to synchronize faculty and engagement data.

2. Technical Infrastructure: Dependencies exist on the availability of reliable internet connectivity, server resources, and compatibility with diverse computing environments to ensure optimal software performance and accessibility.

3. Stakeholder Collaboration: The project relies on active collaboration and communication between project stakeholders, including faculty members, administrators, IT staff, and external vendors, to gather requirements, provide feedback, and address issues throughout the software development lifecycle.

4. Regulatory Compliance: Dependencies exist on staying updated with evolving data privacy regulations and compliance standards to ensure ongoing adherence and mitigate legal risks associated with data handling and security.

5. User Adoption: Successful implementation of the software depends on user acceptance and adoption by faculty members and other stakeholders, necessitating effective change management strategies, user training, and ongoing support.

**3. SYSTEM FEATURES**

**3.1 FUNCTIONAL REQUIREMENTS**

1. Faculty Dashboard:

• Display a personalized dashboard for each faculty member upon login.

• Include sections for viewing activities conducted, such as seminars, workshops, training sessions, etc.

• Provide summary metrics for each activity type, including the number of sessions conducted, participants reached, feedback received, etc.

• Allow faculty members to easily navigate and access detailed records of their engagements.

2. Data Upload:

• Enable faculty members to upload new data and certificates related to events they have conducted or participated in.

• Provide a user-friendly interface for uploading documents, specifying event details, and associating them with relevant activities.

• Validate uploaded data to ensure accuracy and completeness before integrating it into the system.

3. Data Viewing for Admins/College Staff:

• Provide authorized administrators and college senior staff with access to view data for each faculty member individually.

• Offer a tabular view option to display data for all faculty members, allowing sorting based on specific columns such as name, date, activity type, etc.

• Ensure data confidentiality and access control mechanisms to restrict unauthorized access to sensitive information.

4. Certificate Download:

• Enable both faculty members and administrators to download certificates related to conducted events.

• Offer a download option directly from the dashboard interface, allowing users to access certificates in PDF or other commonly used formats.

5. Data Sorting:

• Implement sorting functionality for tabular data based on required columns such as event date, activity type, participant count, etc.

• Allow users to sort data in ascending or descending order to facilitate quick analysis and decision-making.

6. Tabular Data Download as PDF:

• Provide the ability for users to download tabular data as a PDF document for offline viewing or sharing purposes.

• Include options to customize the PDF output format, such as selecting specific columns to include, applying formatting styles, and adding headers/footers.

• Ensure the generated PDF document maintains data integrity and follows predefined layout and styling guidelines.

Validity Checks

In order to gain access to the system, the user is required to enter his/her correct user id/password failing which his account may be blocked. The user can access only one account at a time. Also if the user is an administrator, he is required to enter his login id in order to access and change the facilities provided by the system.

Sequencing Information

The information about the users should be entered into the database prior to any of the backup be maintained for all account information

Error Handling/ Response to Abnormal Situations

If any of the above validation/sequencing flow does not hold true, appropriate error messages will be prompted to the user for doing the needful.

**4.EXTERNAL INTERFACE REQUIREMENTS**

**4.1.1 USER INTERFACE REQUIREMENTS**

1. Faculty Dashboard:

- Display a personalized dashboard for each faculty member, showing their activities such as seminars and workshops conducted, along with relevant metrics.

- Include interactive visualizations and charts for easy interpretation of engagement data.

- Provide options to set goals, track progress, and customize dashboard preferences.

2. Data Upload Interface:

- Offer a user-friendly interface for faculty members to upload new data and certificates related to events they have conducted.

- Support file upload functionalities with validation checks to ensure data integrity and compatibility.

3. Administrative View:

- Provide administrators and senior staff with access to a centralized interface to view data for each faculty member individually.

- Include options to filter and search for specific faculty members and view their engagement data in detail.

4. Tabular Data Display:

- Present faculty engagement data in tabular form, allowing administrators to view and compare data for multiple faculty members simultaneously.

- Enable sorting of data based on required columns (e.g., date, event type, participant count) to facilitate analysis and decision-making.

5. Certificate Download:

- Allow faculty members to download certificates related to events they have conducted or participated in.

- Provide administrators with the ability to download certificates for verification or archival purposes.

6. Data Sorting and Filtering:

- Implement sorting and filtering options for tabular data, enabling users to arrange data based on specific criteria and focus on relevant information.

- Include dynamic filtering functionalities to refine data based on user-defined parameters.

7. Tabular Data Export:

- Provide faculty members and administrators with the ability to export tabular data as PDF files for offline reference or reporting purposes.

- Ensure that exported PDFs maintain formatting and include relevant metadata for clarity and completeness.

**4.1.2 Software Interface Requirements**

Admin/College Senior Staff Interface:

Individual Faculty Data View: A dedicated section allowing administrators and college senior staff to view detailed data of each faculty member, including their activity records, certificates, and engagement metrics. Institution-Wide Data View: A tabular representation of all faculty engagement data, enabling administrators to view and analyze data across the institution, with sorting and filtering options for easy navigation. Certificate Download: Admins can download certificates related to faculty events directly from the interface, either individually or in bulk.

Sorting and Filtering:

Tabular Data Sorting: Faculty and administrators should be able to sort tabular data based on required columns such as event date, type, duration, participant count, etc., to facilitate data analysis and comparison. Filtering Options: Provide filtering options to refine the displayed data based on specific criteria (e.g., date range, event type), enhancing the user experience and data exploration capabilities.

Data Download:

Certificate Download: Both faculty members and administrators should have the ability to download event certificates either individually or in bulk, ensuring easy access to documentation for professional purposes. Tabular Data Export: Provide functionality to download tabular data in PDF format, allowing users to generate reports or share data in a standardized format for offline use or archival purposes.

**4.1.3 Communication Interface Requirements**

• Interface should include communication tools such as messaging or email notifications to facilitate communication between faculty members, admins, and support staff.

• Feedback mechanisms should be provided to gather user input and suggestions for improving the interface and functionality of the system.

5. Other Non-functional Requirements

1. Performance: The system should respond to user interactions (e.g., dashboard loading, data retrieval) within acceptable timeframes to ensure a smooth user experience, even during peak usage periods.

2. Scalability: The system should be able to handle a growing number of faculty members, events, and data records without compromising performance or functionality. 3. Security: The system must employ robust security measures to safeguard sensitive data, including encryption of data in transit and at rest, access controls based on user roles, and protection against unauthorized access or data breaches.

4. Reliability: The system should be highly reliable, with minimal downtime and data loss, ensuring uninterrupted access to critical functionalities for faculty, administrators, and maintenance staff.

5. Usability: The user interface should be intuitive, user-friendly, and accessible across various devices and screen sizes, catering to users with varying levels of technical proficiency.

6. Accessibility: The system should adhere to accessibility standards (e.g., WCAG) to ensure equal access and usability for users with disabilities, including support for screen readers, keyboard navigation, and alternative text for images.

7. Compliance: The system must comply with relevant legal and regulatory requirements, including data privacy laws (e.g., GDPR, HIPAA), accessibility standards, and institutional policies.

8. Interoperability: The system should seamlessly integrate with existing institutional systems and third-party tools (e.g., HR databases, certificate generation services) through standardized protocols and APIs.

9. Auditability: The system should maintain detailed audit logs of user actions, data modifications, and system activities for accountability, compliance, and troubleshooting purposes.

10. Documentation: Comprehensive documentation should be provided for system functionalities, user guides, administrative procedures, and troubleshooting resources to assist users in utilizing the system effectively.

11. Data Integrity: The system should ensure the integrity of stored data through mechanisms such as data validation, error handling, and backup and recovery procedures to prevent data corruption or loss.

12. Customization: The system should allow for customization of dashboard layouts, data views, and user preferences to accommodate varying user needs and institutional requirements.

13. Reporting: The system should support customizable reporting capabilities, including the generation of activity reports, analytics dashboards, and exportable data formats (e.g., CSV, PDF) for faculty, administrators, and other stakeholders.

# **OTHER NON-FUNCTIONAL REQUIREMENTS**

* 1. **Performance Requirements**

The following list provides a brief summary of the performance requirements for the software:

# **Capacity**

The app shall provide service to the users 24/7.

# **Dynamic requirements**

The Faculty Skill Enhancement Tracker website’s interface should be simple and user-friendly, catering to faculty in VNR VJIET. It should prioritize clear visuals and large buttons for easy navigation. The core functionalities should be readily accessible on the homepage.

# **Quality**

The primary objective is to produce quality software. As the quality of a piece of software is difficult to measure quantitatively, the following guidelines will be used when judging the quality of the software:

1. Consistency – All code will be consistent with respect to the style. (This is implied when adhering to the standard).
2. Test cases – All functionality will be thoroughly tested

# **Software System Attributes**

* + 1. **Reliability**

The data communication protocol shall be such that it ensures reliability and quality of data and transmission in a browser environment. The memory system shall be of non-volatile type.

# **Availability**

* The server will have a backup power supply in case of power failures. Any abnormal operations shall result in the users being given the wrong information.

# **Security**

* The communication with server shall be compatible with AIMS security standards. So that the data cannot be breached in any king of attack.
* User should give his/her phone number while giving a feedback in order to avoid multiple and false feedbacks.

# **Maintainability**

* + - * The system components i.e. modem, memory, disk, drives shall be easily serviceable.
      * The system should have the mechanism of self-monitoring periodically in order to detect any fault.
      * The system should inform the main branch automatically as soon as it detects any error. The kind of fault and the problem being encountered should also be mentioned by the system automatically.