Centre for Fire, Explosive and Environment Safety (CFEES)

Training Report

on

Developing an Application Workflow Management System

Submitted To:

TCP&HR DEPARTMENT

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Acknowledgements

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Company Profile

Overview

The Defence Research and Development Organisation (DRDO) is an agency under the Ministry of Defence, Government of India. Established in 1958, DRDO is dedicated to enhancing the self-reliance in defence systems and ensuring technological advancements in the armed forces.

Mission and Vision

Mission: To design, develop, and lead to production state-of-the-art sensors, weapon systems, platforms, and allied equipment for our Defence Services.

Vision: Empowering the nation with cutting-edge defence technologies.

Core Values

- Innovation
- Excellence
- Integrity
- Teamwork

Introduction to the Training Project

Objective

The objective of this training project was to develop a web portal for tracking and managing seminar applications within the company. The system is designed to streamline the submission, review, and approval process for applications, ensuring efficiency and transparency.

Scope

The scope of the project includes:

- Designing a user-friendly interface for application submission.
- Creating a dashboard for users at different levels to review and approve/reject applications.
- Implementing a tracking mechanism for applicants to check the status of their submissions.

Project Description

The project involved developing a web portal that allows employees to submit applications for seminars, workshops, and conferences. The portal also provides functionalities for higher-level users to review, approve, or reject these applications, and allows applicants to track the status of their submissions.

Technologies Used:

- **HTML/CSS**: For structuring and styling the web pages.
- **JavaScript**: For enhancing user interactions.
- **PHP**: For server-side scripting and database interactions.
- **MySQL**: For storing application data.

Key Components:

1. **User Interface:**
    - dashboard.php: Main user interface for the dashboard.
    - login.php: Login page for users.
    - register.php: Registration page for new users.
    - new_application.php: Interface to submit a new application.
    - view_application.php: Interface to view submitted applications.
    - print_application.php: Interface to print application details.

2. **Scripts and Styles:**
    - login_script.js, register_script.js, dashboard_script.js: JavaScript files for handling frontend logic.
    - styles.css, dashboard_styles.css, login_styles.css, register_styles.css, new_application.css: CSS files for styling the application.

3. **Backend Logic:**
    - approve.php: Logic for approving applications.
    - reject.php: Logic for rejecting applications.
    - manage_application.php: Logic for managing applications.
    - status.php: Logic for checking the status of applications.
    - logout.php: Logic for logging out users.

Implementation Details

1)Application Submission Portal

The submission form collects various details from the applicant, including personal information, seminar details, and financial information. This data is stored in a MySQL database.

Users can easily browse available training sessions and apply for the ones that match their interests and schedule. The application process is designed to be straightforward and intuitive, encouraging higher participation rates and making it easier for employees to find and apply for relevant training sessions

2)Dashboard for Reviewing Applications

A dashboard was created for users at higher levels to view and manage applications. This includes options to approve or reject applications.

3)Status Tracking for Applicants

A status page was implemented for applicants to track the progress of their submissions. This page visually indicates the current status and allows printing the application form if approved.

4)Dashboard for TCP_HR and TCP_AD

Post New Training Forms: The dashboard provides an intuitive interface for TCP_HR and TCH_AD users to post new training forms. Users can input details such as the training title, description, date, time, location, and maximum number of participants. This feature simplifies the process of organizing training sessions and ensures that all relevant information is captured accurately and efficiently.

Manage Training Sessions: Users can view, edit, or delete previously posted training sessions. This feature ensures that all training information is up-to-date and accurate. By allowing modifications and deletions, the system maintains the integrity and relevance of the training data, reducing the chances of misinformation..

Pseudocode for Core Functionalities

User Registration

```
function registerUser(username, password, email):
    if username, password, email are valid:
        hashPassword = hash(password)
        saveUserToDatabase(username, hashPassword, email)
        return "Registration successful"
    else:
        return "Registration failed"
```

User Login

```
function loginUser(username, password):
    user = getUserFromDatabase(username)
    if user exists and hash(password) == user.password:
        createSession(user)
        return "Login successful"
    else:
        return "Invalid username or password"
```

Application Submission

```
function submitApplication(userId, applicationData):
    if validateApplicationData(applicationData):
        saveApplicationToDatabase(userId, applicationData)
        return "Application submitted successfully"
    else:
        return "Application submission failed"
```

Application Approval

```
function approveApplication(applicationId, approverId):
    application = getApplicationFromDatabase(applicationId)
    if application.status == "Pending":
        updateApplicationStatus(applicationId, "Approved", approverId)
        return "Application approved"
    else:
        return "Application cannot be approved"
```

Application Rejection

```
function rejectApplication(applicationId, approverId, reason):
    application = getApplicationFromDatabase(applicationId)
    if application.status == "Pending":
        updateApplicationStatus(applicationId, "Rejected", approverId, reason)
        return "Application rejected"
    else:
        return "Application cannot be rejected"
```

Viewing Application Status

```
function viewApplicationStatus(applicationId):
    application = getApplicationFromDatabase(applicationId)
    return application.status
```

Workflow

1. **User Registration and Login:**
   - Users register by providing a username, password, and email.
   - On successful registration, users can log in using their credentials.
2. **Application Submission:**
   - Logged-in users can submit new applications through a form.
   - Logged-in users can apply directly for the training whose forms available on the dashboard.
   - The submitted application is validated and saved to the database.
3. **Application Management:**
   - Administrators can approve or reject applications.
   - Administrators can post new training forms.
   - The status of each application is updated accordingly.
4. **Status Tracking:**
   - Users can view the status of their submitted applications.

Challenges and Solutions

1. **Database Connectivity Issues**:
   - **Solution**: Ensured proper configuration of database credentials and connection parameters.
2. **Form Validation**:
   - **Solution**: Implemented server-side and client-side validation to ensure data integrity.
3. **User Authentication**:
   - **Solution**: Utilized session management for secure user authentication and role-based access control.

Results and Observations

The developed web portal significantly improved the process of seminar application submission and tracking within the organization. It enhanced transparency and efficiency, reducing the time taken for application review and approval.

Conclusions

The training project at DRDO provided me with a comprehensive learning experience in web development and database management. It enabled me to apply theoretical knowledge to a real-world project, enhancing my skills in PHP, MySQL, and frontend development. The project successfully met its objectives, delivering a functional and user-friendly application tracking system.

References

- PHP Manual: https://www.php.net/manual/en/
- MySQL Documentation: https://dev.mysql.com/doc/
- W3Schools: https://www.w3schools.com/
