DATABASE MANAGEMENT SYSTEM FOR STUDENT PROJECT PROGRAM (SPP)

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INTRODUCTION:

The Student Project Program (SPP) of the K.S.C.S.T (Karnataka State Council for Science and Technology) receive the proposals for projects from all over Karnataka, and the proposals are received in the form of hard copy and they are evaluated manually by the personnel at the SPP center. This process is very laborious and time consuming. This project is designed to meet the requirements of KSCST Student Project Program (SPP) for managing the data submitted by the students through online application form. Our project is basically an integration of three modules i.e. Front-end, which provides a Graphical User Interface through interactive and responsive web forms by which students can apply for SPP; Back-end, which will manage all the data submitted by a student through online application form.

Overall services provided by integration of these modules will ease and speed up the method of evaluation of application forms for SPP officials. As they now only have to login into their accounts and extract the information just by clicking a button, at present for which they go through thousands of applications forms and manually enter the data to their computers. The officials can also be able to see the statistics in terms of total number of application submitted in a day or a week or a month

OBJECTIVE:

1. To implement online proposal forms for the students to access, fill and submit them through the K.S.C.S.T website.

2. To implement a module that provides the administrators to view the proposals obtained and functions to filter and sort them based on the subject of interest accordingly so that they can be accessed by the subject Experts ,who evaluate them.

3. To implement a module for the subject experts such that they can view the proposals pertaining to their subject-matter and evaluate them accordingly.

4. To implement a module for users (Administrator and subject experts) to register with the system, so that they can carry out the authorized functions.

METHODOLOGY:

Basically this proposal describes our Back-end module in detail. In this online portal environment, we will categorize users into 3 classes: Student, SPP officials, and Professors.
Each of these 3 classes will act as an individual entity in Relational Database (MySQL). Any access to this portal will be an authorized access, as each entity has to first sign-up in order to login into their account. As soon as any of the entity logs in, the session will be started to reduce traffic on our portal. When that session expires, he/she will get automatically logged-out from the portal services. In order to provide security and privacy, the encryption and decryption of data is done. CLIENT will send requests to the SERVER through API’S and SERVER will send response to the CLIENTS in JSON (a markup language) format (as shown in Fig.1). As our portal is dependent on single Server, this may lead to SINGLE POINT FAILURE. In order to protect our services and database from external attacks, SQL INJECTIONS are used.

![Fig.1 Client Server communication process](image)

When a student submits his/her application, Application Program Interface (API) Servlet will direct the submitted data to a server for storing it. An API Servlet is an extension to Java that provides a programming interface (API) for implementing server-side programs written in Java (Java servlets). The server will auto-generate an Application Number which will be unique for each application and it will be sent to an email-id of the student to verify his identity. Later the student can upload his/her photo and signature within 24 hours of the submission of application. If he/she failed to do so, his/her application would be made null/void. Our Form is embedded with intelligence that if a student tries to submit an application with a thrust area similar to previously submitted students, then the student won’t be allowed to submit the application form.

The applicant should then get authentication from the corresponding college administrator in order to forward his/her application to the SPP Officials. The submitted application will then be reviewed by the SPP officials for directing them to professors for approval, for which, the officials have to first login into their account. At this platform, they are given a set of rights such as rejecting the duplicate forms, Validation of applicant and Forwarding the forms to the Professor. The professors will here analyze the technical specification of the project and its feasibility and will send the review back to the SPP...
Based on the review, the SPP official will finally approve or reject the application and sanction the affordable budget for the project.

The portal will provide them the facility to extract information regarding submitted application forms and will also provide statistics in terms of total number of application submitted in a day or a week or a month. These automated and well managed services will reduce burden on officials. The students can check the status of their application through their accounts. As soon as applications are reviewed and forwarded by officials, the filtered application forms will start appearing in the list of pending applications for final approval from the professors. Each professor has to first login into their account to access this list for the final approval. The professors after technically analyzing the feasibility of the project can either approve it or reject it.

![Flowchart for processing online application form.](image-url)
NOTE: - The flowchart only represents the situation when a student fills an online application form or when an SPP Official or a Professor login for evaluation.

**CONCLUSION:**

The proposed work would have extensive applications in Data Management that has to be done by KSCST officials. The student can now be able to fill the application form online from any remote location.

**FUTURE WORK:**

This project provides the wide scope for enhancing the automation of application management process through online portal. As new plug-in or any update get introduced in the web technology, they can easily be embedded with our flexible automated system and can provide better automated services to both students and SPP officials.