Indian Institute of Information Technology, Allahabad

Course: Software Engineering

Software Requirement Specifications

"Anusandhan" - University Project Bank

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1. Introduction:

"Anusandhan" is an online University Project Bank which allows students to search and view existing projects, collaborate with authors and submit new projects. The platform also allows the university to create a database of all existing projects and upcoming projects that will allow students to be informed regarding research opportunities.

This software makes use of 'Tokens' to map project approval requests to students which is used in multiple functionalities such as checking the status of project and allowing admin to have a list of all the projects done by each student

1.1 Purpose:

The main objective of this project is to provide the university administration with a software that allows them to store and provide the students with curated projects and maintain a record of all the previously completed student projects. The students are also provided with a platform to upload their existing projects which can later be added by the admin to the database after thorough checking.

1.2 Scope:

In Scope:

a) A well-maintained project database.

b) Student search bar, project approval request, approval status checking.

c) Admin has absolute control over the database, he can accept requests for new project additions by students, and add / delete relevant projects from the database.

Out of Scope:

a) Third party plagiarism checker that can be used by the admin.

b) Search Engine Optimization for better results.

1.3 Overview:

The software's briefly explained description is given in Section 2. The user's required input and software usability is detailed, key features are highlighted and software dependencies & constraints are noted.

2. Overall Description:

2.1 Product Perspective:

"Anusandhan" is designed as an alternative to the various project management software available to users in the current market. It enables an enhanced level of user interactivity between the students and administration and helps in providing better learning experience with curated projects from the admin for the students.

2.2 Product Functions:

"Anusandhan" supports the following use cases :

Use Cases	**Description of Use Cases**
Student Login	The student enters their credentials to be directed to the 'Student Home Page'.
Admin Login	The admin of the Project bank enters their credentials to be directed to the 'Admin Home Page'.
Student Home Page	This homepage has three features - a search bar for searching up previous projects, a 'check status' button to view the status of all of the student's projects and a 'project request' button for new submissions.
Admin Home Page	This is the page that the admin has access to and can use several features like the search bar , checking the pending project approvals and updating the project database.
Search	The admin / student can search for projects based on keywords
Search Results	Relevant search results are displayed based on the keywords entered.
View Project Page	The project page displays a list of existing projects, and is reached by clicking on a particular project from the search results.

Project Approval Request	The student uses this feature to request to add a new project into the database. The request is later checked and verified by the admin.
Enter Details Page	This is the next step in the project request process where the student enters the details pertaining to the project like the title, keywords, abstract, and the entire documentation of the project.
Submit Request / Token Generation	This is the 'submit' button that the student clicks after filling the aforementioned information, and has a token generated specific to their uploaded request.
Check Status Button	Students may view the list of all the projects that they are involved in along with its status by pressing this button in the Student Home Page.
Display Project List	This feature allows the student to check the status of their project approval . There can be three cases - Rejected, Accepted and Under Processing. It also displays all the other projects that a student has worked on in the past.
Check Tokens	This is the button used by the admin to view all pending tokens, for the admin's perusal.
Token List	This list is used by the admin and comprises all the pending tokens which need to be verified by the admin.
Display Project Details	For each token submitted, information and specifics such as the project document, abstract and author details will be mentioned which the admin makes use of in case the project request is accepted.
Accept Project	If favorable, the admin accepts the project request and the project gets uploaded to the project bank directly with no further steps.

Reject Project	If the admin does not want to add the project onto the database, they can reject the project which will be discarded.
Add Project	This feature is explicitly used by the admin to add external projects that the admin feels is relevant to the database.
Fill Project Details	The admin uses this feature to add all the relevant details about the external project like the title, keywords and specifications that are necessary for better search results.
Upload	After filling the project details in the previous step, the admin finally uploads the project documentation which reflects the changes in the database.
Update Status List	The status list is updated depending on the action taken by the admin (accepted/rejected) which can later be referenced by the student to know the status of their project approval.

2.3 User Characteristics:

The admin and student both should be well aware of the searching process and good utilization of keywords which will result in better results.
Entering relevant information regarding the project to be uploaded is also a crucial part of this software as it enhances readability and optimizes search.

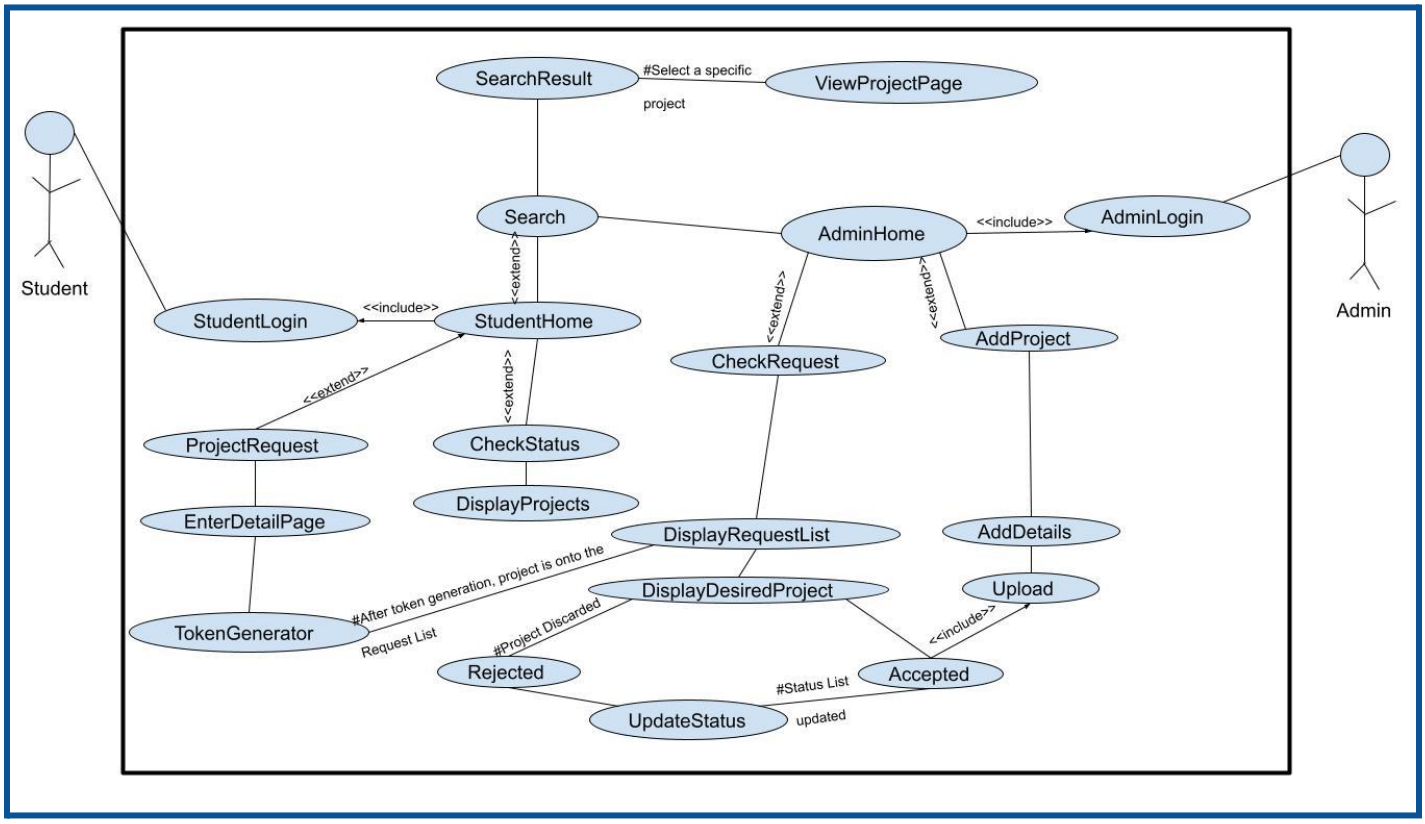
2.4 Principal Actors:

There are two actors considered in the working of this software - one is the 'Student' who checks for projects or requests to upload their own, and the other is the 'Admin', the authority figure behind the Project Bank who approves the project requests or adds their own.

2.5 Assumptions and Dependencies:

a) The user is aware of the working of tokens (used to check for approval) and project submission procedure.

APPENDIX:
USE CASE DIAGRAM



3. Specific Requirements:

From a Student Point of View :

- ➔ Relevant projects for students are tough to get, since vast search results on the internet, But our software provides them only relevant projects as desired by the administration.
- ➔ Database is managed by Admin and others cannot change that database.
- ➔ General searching is tedious with inefficient results, but our software gives brief abstracts and introduction of the project which helps the student get an insight.
- ➔ Publishing paper online is time consuming and more intensive, since multiple forms as well as validation protocols have to be followed.
- ➔ Here, we have simplified the uploading and verification process as only validated students can try to upload their projects because the student login is required.
- ➔ Checking status of projects in online/general platforms often leads to errors in communication because of spam mails/ missed mails and unreceived mails.
- ➔ Token generation simplifies the status checking procedure.

➔ Collaboration between students who want to work on existing projects and authors is enhanced via this software.

From the Admin point of view :

➔ To get the project details , the admin needs to communicate with the students with multiple back and forth mails which is hectic.
➔ In our software, all the information is filled by the student while requesting approval and the admin can find that all at one place.
➔ Even though plagiarism checking in a project is out of scope, the admin can utilize a third party application and compare the token id's to identify the student who is responsible for the plagiarism.
➔ Admin does not need to write individual mail to each student about the status of their project submission at regular periods of time.
➔ For the status of the student's project, Admin updates the status in the token table which can later be referenced by the student as per their own convenience.This reduces the hassle of ensuring prompt communication by other platforms.

Use Case 1:

Name: Student Login

Summary: Student opens the website in student login. Enter username and password. If credentials are correct, then the student goes to the Student Home Page.

Pre-Conditions:

- Student device has a working browser.

Main Success Scenario:

- The user desires to use the Application in the device environment.
- Student clicks login button.
- App checks for authorisation.

Post-Condition:

- Successful Login will redirect students to the Student Home Page.

Use Case 2:

Name: Admin Login

Summary: Admin opens website in Admin Login. Enter username and password. Admin goes to the Amin home page if credentials are correct.

Pre-Conditions:

- Admin device has logged into the system.

Main Success Scenario:

- Admin clicks login button
- System checks if credentials are correct or not.

Post-Condition:

- Successful login redirects to the admin home page.

Use Case 3:

Name: Student Home Page

Summary: Student Home page allows the student to search for projects in the search bar using keywords, and has button options to choose options to submit requests to accept projects and check status of all pending and accepted/rejected applications.

Pre-Conditions:

- Student device has logged into the system.

Main Success Scenario:

- Student selects an option.

Post-Condition:

- Page is redirected to the required page depending on the service chosen.

Use Case 4:

Name: Admin Home Page

Summary: Admin Home page allows the admin to choose options to add new projects, accept student projects or search for projects.

Pre-Conditions:

- Admin device has logged into the system.

Main Success Scenario:

- Admin selects an option.

Post-Condition:

- Page is redirected to the required page depending on the service chosen.

Use Case 5:

Name: Search

Summary: Student will search for keywords in the search bar and search algorithm will generate results based on keywords searched

Pre-Conditions:

- Student device has logged into the system.
- Student has entered keywords in search bar.

Main Success Scenario:

- Student clicks the search button and search result displays.

Post-Condition:

- Student can view the results of his/her search.

Use Case 6:

Name: Search Result Page

Summary: Student will search for keywords in the search bar and search algorithm

will generate results based on keywords searched. All relevant project names will be displayed in order of most recently published.

Pre-Conditions:

- Student device has logged into the system.
- Student has entered keywords in search bar.

Main Success Scenario:

- Student will scroll through all results and select the project to view.

Post-Condition:

- Student can view the project page.

Use Case 7:

Name: View Project Page

Summary: Every project has a project page with a brief abstract of the project, names of authors, contact details and links related to the project (as submitted by the authors).

Pre-Conditions:

- Student has searched for keywords
- Search results have been displayed and have at least one relevant search result.

Main Success Scenario:

- Static window opens for students to get details of the project.

Post-Condition:

- Student can download resources or go back to results.

Use Case 8:

Name: Project Approval Request.

Summary: Students can apply to upload their projects by uploading all their details.

Pre-Conditions:

- Student has logged in and in Student Home Page.

Main Success Scenario:

- Student clicks Project Request Button.

Post-Condition:

- Details page opens.

Use Case 9:

Name: Details Page

Summary: Student who wants to apply will add details relevant, such as author names, keywords, abstract and relevant information/links.

Pre-Conditions:

- Student has logged in and clicked Project Request Button

Main Success Scenario:

- Student fills the form with all required fields and clicks the submit button.

Post-Condition:

- Token Submitted page opens.

Use Case 10:

Name: Submit Token

Summary: Student will get a unique Token Number for the request.

Pre-Conditions:

- Student has filled all required fields in the details page.

Main Success Scenario:

- Student is displayed the token number and can now go back to the home page.

Post-Condition:

- Student goes to the Home Page.

Use Case 11:

Name: Check Status

Summary: A check status button is available in the Student Home Page that students may use to view the list of projects that they are involved with along with its status of submission.

Pre-Conditions:

- Student has logged in, and is in Student Home Page.

Main Success Scenario:

- 'Student' click the Check Status button to view a list of all their projects.

Post-Condition:

- The set of all projects that the student has been involved with is displayed, along with the date and status of its publishing in the Project Bank.

Use Case 12:

Name: Display Project List

Summary: Students are given the functionality to view their list of all their involved projects, along with the status of each, which may be either of - 'Published' , 'Rejected', 'Pending'.

Pre-Conditions:

- Student has logged in, and is in Student Home Page.

Main Success Scenario:

- 'Student' has clicked the Check Status button.

Post-Condition:

- Students are informed of the status of their projects.

Use Case 13:

Name: Check Tokens

Summary: The Admin makes use of this button to view all pending project requests.

Pre-Conditions:

- Admin has logged in to their Home Page.

Main Success Scenario:

- Admin wishes to view pending requests and clicks on the 'Check Tokens' button.

Post-Condition:

- The set of all project requests that students have made for submission is made visible for the Admin, and the Admin may click on one token to view detailed information on the project.

Use Case 14:

Name: Token List

Summary: Admin can view all the pending tokens for project requests, and may click on one for further detailed information.

Pre-Conditions:

- Admin has logged in to their Home Page and has clicked on the 'Check Tokens' button.

Main Success Scenario:

- Admin wishes to view and resolve pending project requests. Admin can select a particular project by clicking its link.

Post-Condition:

- Admin is able to view pending project requests, and may choose to view the Project information of a particular one for further action.

Use Case 15:

Name: Display Project Details

Summary: On clicking on a particular token, the Admin has the entire project information displayed to them for further perusal.

Pre-Conditions:

- Admin has logged in and viewed the pending tokens' list.

Main Success Scenario:

- Admin clicks on a particular token in the token list, and on doing so the entire project information - including author details, project abstract and document PDF - is visible to the Admin.

Post-Condition:

- The Admin takes a decision on the project's upload status based on the project information displayed prior.

Use Case 16:

Name: Accept Project

Summary: Admin clicks on the 'Accept' button if the project is deemed satisfactory, and the project is then uploaded directly with no further human input to the University Project Bank.

Pre-Conditions:

- Admin has logged in, has viewed the pending tokens list and has gone through the details of a particular project.

Main Success Scenario:

- Admin clicks on the 'Accept' button after perusing the project request details.

Post-Condition:

- The particular project is uploaded to the University Project Bank.

Use Case 17:

Name: Add Project

Summary: Admin can add projects to the Bank from outside university to allow students to do project collaborations outside university.

Pre-Conditions:

- Admin has logged in successfully, in the Admin Home Page.

Main Success Scenario:

- Admin clicks on Add Project Button.

Post-Condition:

- Admin goes to the Add details page.

Use Case 18:

Name: Fill Project Details

Summary: Admin can apply to upload a new project and its details by uploading all their details.

Pre-Conditions:

- Admin has logged in and is in the Admin Home Page.

- Admin has clicked on the Add Project option.

Main Success Scenario:

- Admin fills required details.
- Admin clicks upload button.

Post-Condition:

- Upload confirmation page opens.

Use Case 19:

Name: Upload Button

Summary: Admin uploads the project onto Database and receives confirmation.

Pre-Conditions:

- Admin has filled all required fields in the details page.

Main Success Scenario:

- Admin clicks the submit button on the details page.

Post-Condition:

- Admin can see confirmation of successful entry.

Use Case 20:

Name: Reject Project.

Summary: The projects that the admin deems not worthy of being added onto the database are rejected and discarded.

Pre-Conditions:

- The admin has to go through the entire project and verify it.

Main Success Scenario:

- Admin clicks the Reject Project button on the screen.

Post-Condition:

- The project is discarded and the project status list which can be accessed by the student is updated to show the same.

Use Case 21:

Name: Update Status List

Summary: Admin selects the action to be taken on the project i.e accept or reject it and the same is updated in the status list which can be accessed by the student.

Pre-Conditions:

- Admin has to either ACCEPT or REJECT the project.

Main Success Scenario:

- The action taken by the admin is correctly visible in the status list.

Post-Condition:

- Students can verify the status of their project approval request using this status list and know whether the project is accepted, rejected or under processing.