Software Requirement Specification

Publications List Management

Jan 14, 2019

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Contents

1   Background:

In the various areas of science, publications hold a very dear value to the publisher, and are considered as significant milestones in every scientist's career. A publication indicates the researcher's interest in the field as well as the contribution to that particular field in his/her career. Therefore, every scientist and institution must carefully maintain and update records of their scientific publications. However, in most institutions and universities articles are often managed in a redundant file-based and non-central way. While excellent research portals like researchgate and google scholar exist, various problems come along the way when a publisher wants to fine tune the storage of their document, and generate relevant formats of reports about the publications for submission according to different standards.

Therefore, we have undertaken the task of creating a publications list management system. Starting out from scratch, the system must enable an user to view the list of their publications, sorted and searchable in orders of their various attributes like name, publisher and authors, as well as add to the list and generate the appropriate format of the details for submission like University Grant Commission and IEEE. Our project aims at making the interface simple as possible to use, while not losing any kind of functionality along the way, and enabling the researchers to have on-hand access to their publications in a central server at the university. This will also help the university gain recognition, increase the outreach and promotion of research within and outside the university and keep a central track of all the research activities that have either been accomplished, or are being done within the university.

2   Objectives:

Our objective is to develop a system with following features:

1. Enable user to view the list of their publications with the list being categorized into types, sorted chronologically/lexicographically and searchable by keys.

2. Provide database to store and access their publications with safety and security.

3. Download the generated list in Docx, PDF and HTML format.

3 Requirements:

3.1 Functional Requirements

An user shall be able to do entry of any sorts of publications like articles, books, chapters, papers, etc. System must display the list of publications in different sections. System must be able to generate HTML, DOC or PDF of list of publications on formats like IEEE, APA, MLA for users to download.

The functional requirements of this project are as follows

1. Adding,removing and editing entry items in the appropriate section
   a. The user should be able to add publication items, edit them and delete them via a GUI

2. Viewing of the records
   b. The user should be able to view their entered items in a tabular form, under different relevant headings

3. Exporting documents
   a. The user should be able to export their list of publications in the required format (such as pdf,doc or html) in the standards such as APA, MLA, UGC, IEEE and so on.
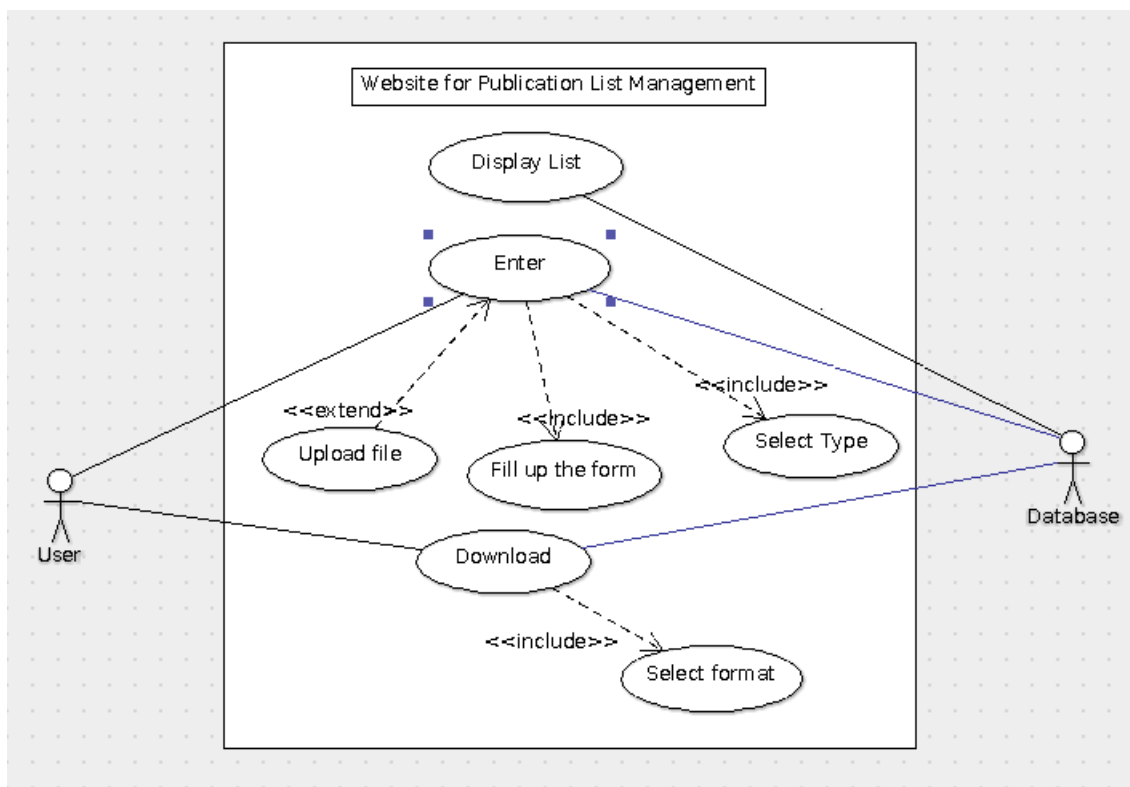
3.2 Non Functional Requirements

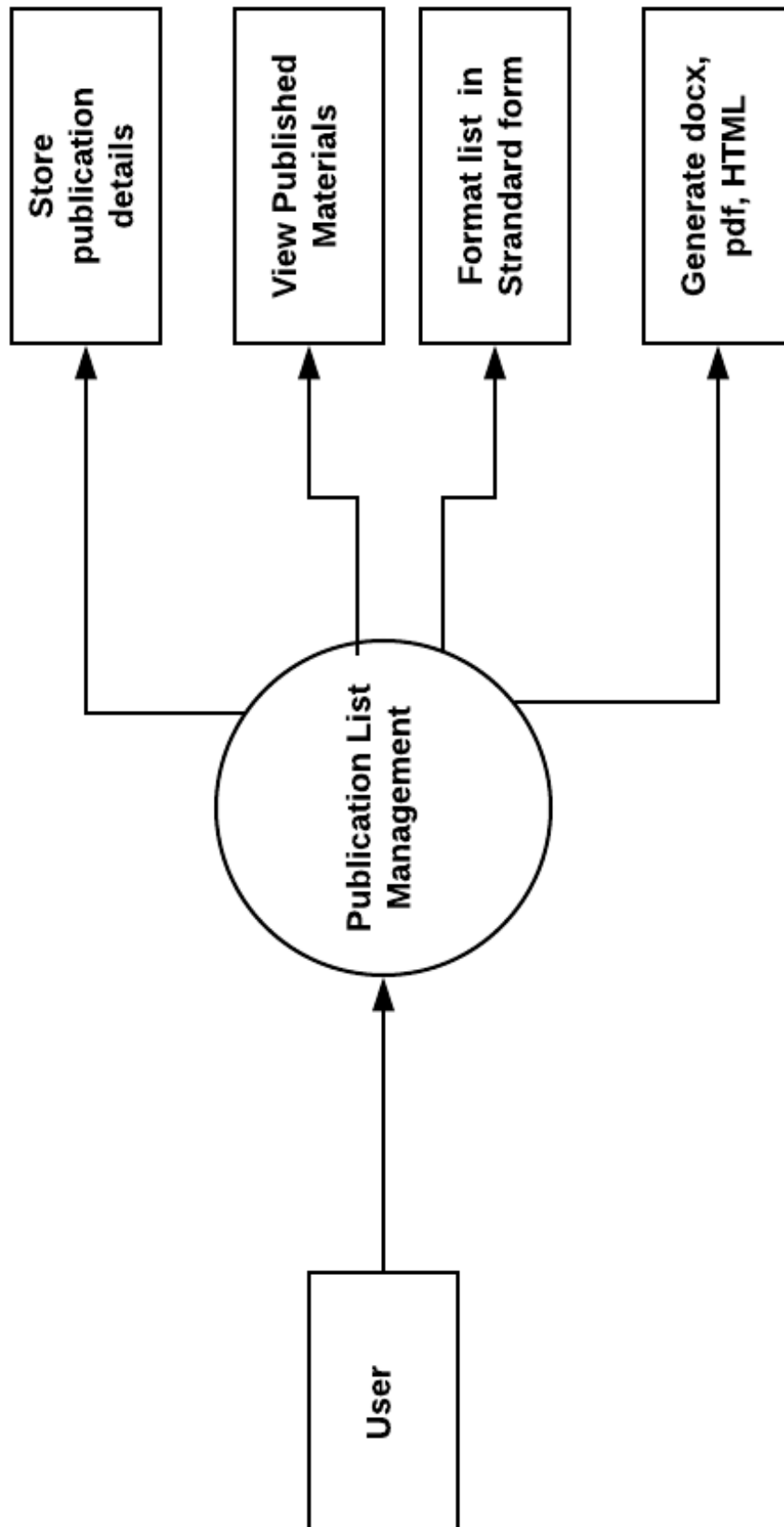The non functional requirements of this venture are :

1. Compatibility
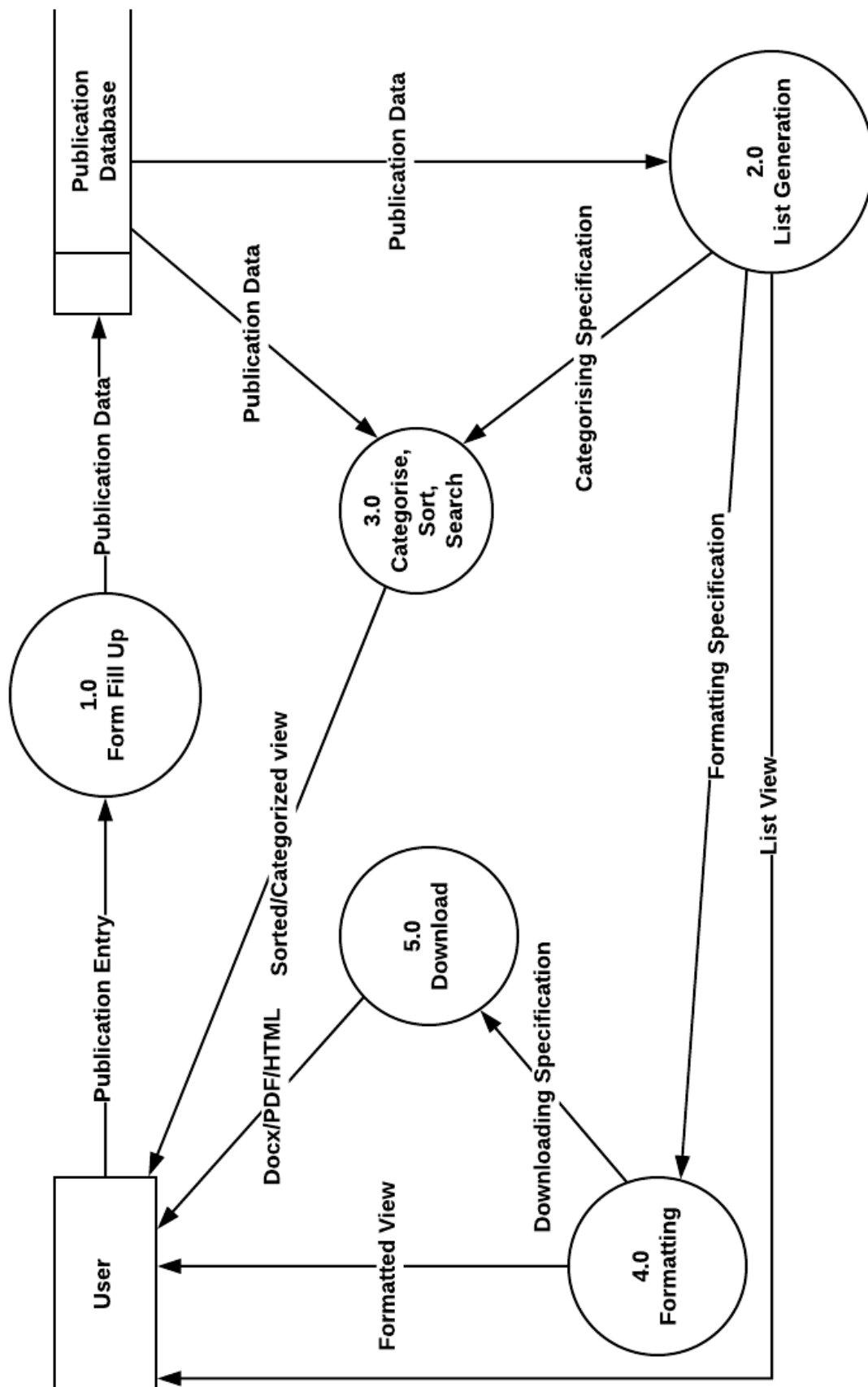   a.The software is web based and should be compatible with all popular modern browsers in any operating system.

2. Dependency on other parties

   a.The software should behave well with other parties that it depends upon

   b.The other parties may include, but may not be limited to software frameworks it uses, external databases and physical hardware.

3. Efficiency

   a.The software should be optimized to consume reasonable load.

4. Integrability

   a.The software should be able to integrate the necessary components seamlessly.

5. Modifiability

   a.The prototype of the software should be modifiable according to any reasonable claims made by the client.

6. Operability

   a.The system should be operable under normal circumstances without disruption

7. Robustness

   a.The system should be able to generate errors and should work accordingly in the case of various errors and erroneous inputs

8. Security (cyber and physical)

   a.It should be secure so that hackers or any parties with malicious intent cannot retrieve or alter any confidential data

9. Scalability

   a.The system should be able to handle growing number of users as well as growing data to the users

10. Usability (Human Factors)

   a.The software and the underlying technology should be as intuitive and easy to use as possible from the perspective of a user

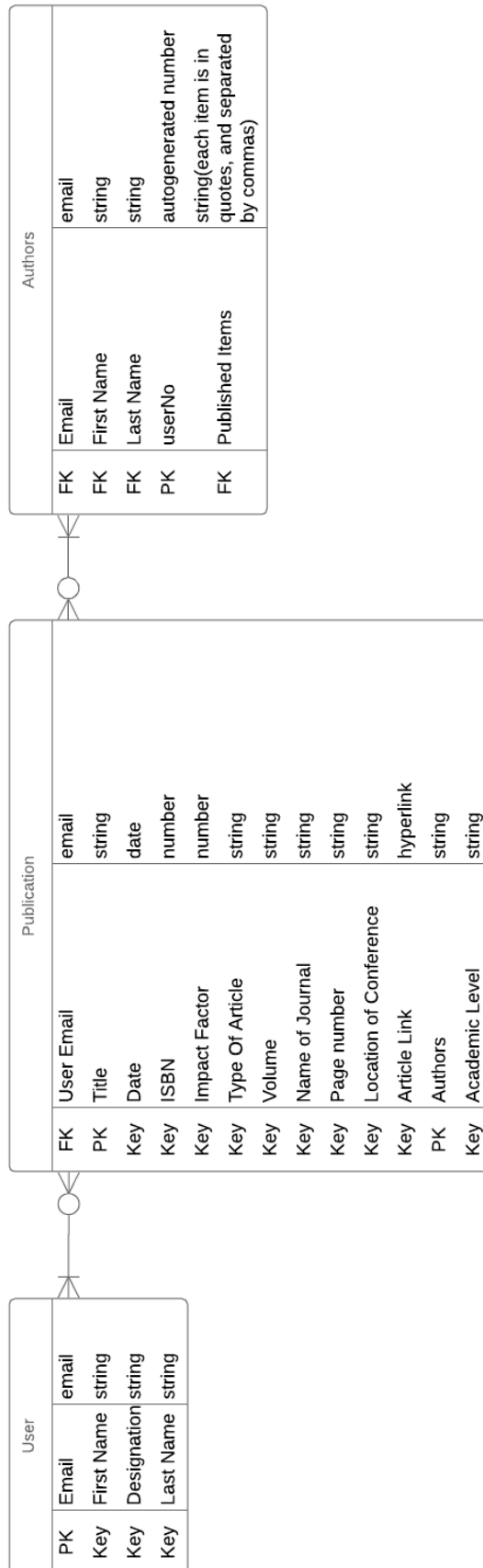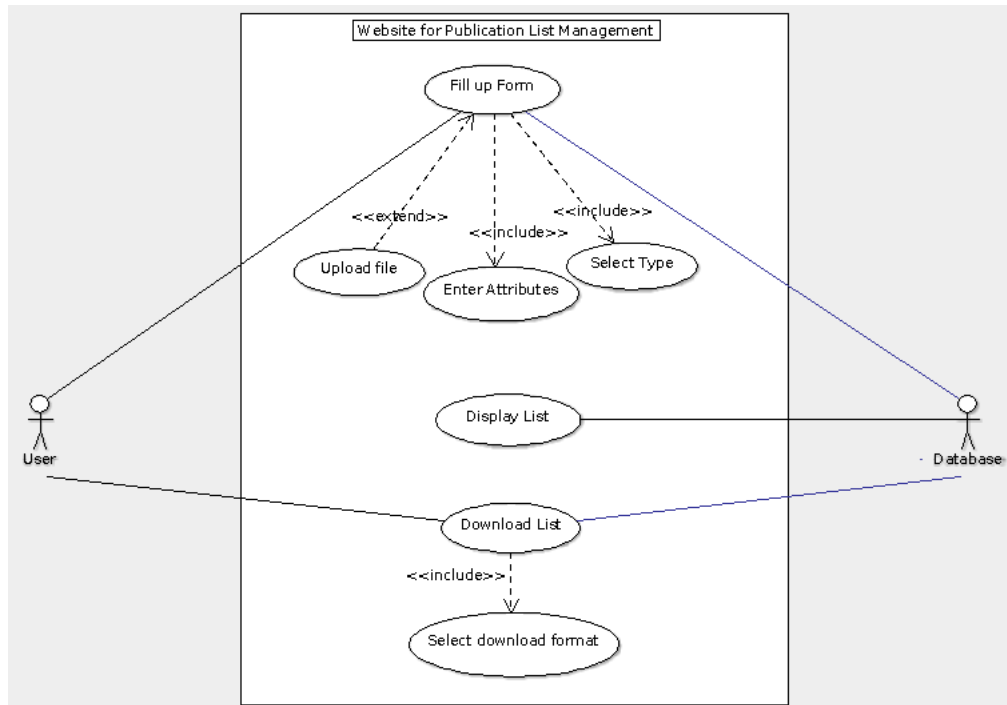# 4   Analysis Models

4.1   Context Model
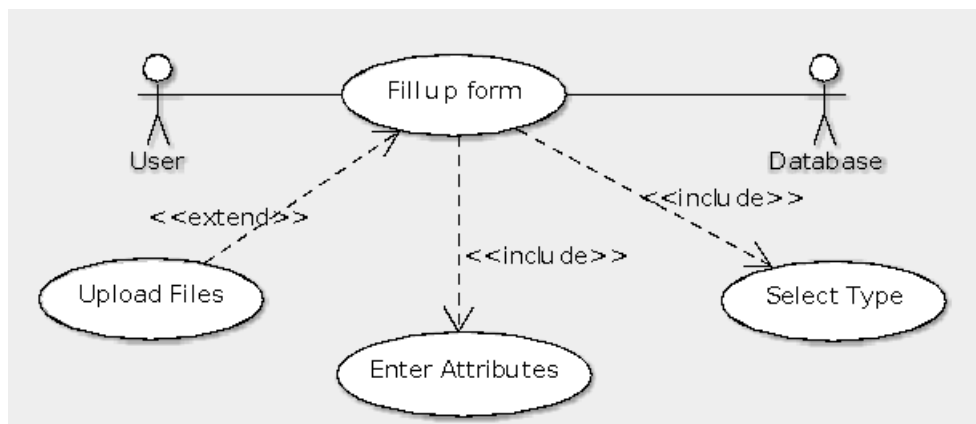
4.2 DFD

4.3 ERD

Entity Relationship Diagram:

Authors

FK	Email	email
FK	First Name	string
FK	Last Name	string
PK	userNo	autogenerated number
FK	Published Items	string(each item is in quotes, and separated by commas)

Publication

FK	User Email	email
PK	Title	string
Key	Date	date
Key	ISBN	number
Key	Impact Factor	number
Key	Type Of Article	string
Key	Volume	string
Key	Name of Journal	string
Key	Page number	string
Key	Location of Conference	string
Key	Article Link	hyperlink
PK	Authors	string
Key	Academic Level	string

User

PK	Email	email
Key	First Name	string
Key	Designation	string
Key	Last Name	string

4.4 Use Case Diagrams

4.4.1 Use Case Diagram:

4.4.2 Fill Form Use case Diagram:

Actors	User, Database
Includes	Enter Attributes, selection of type of publication
Extends	Upload files
Description	To store the published materials user fills up the form. First user select types of Publication (Journals, Research Articles, Books) and according to which the required form fields are generated. User fills up the fields as per the publication.Also, we provide a space to upload the published document so that it can be easily accessed in future.All those data are stored in database with safety and security.
Data	Publication type, Publication Details, Published Document.
Stimulus	When user clicks "Add Publication" button
Response	Confirmation that the publication database has been updated

4.4.3 User in Use case Diagram:
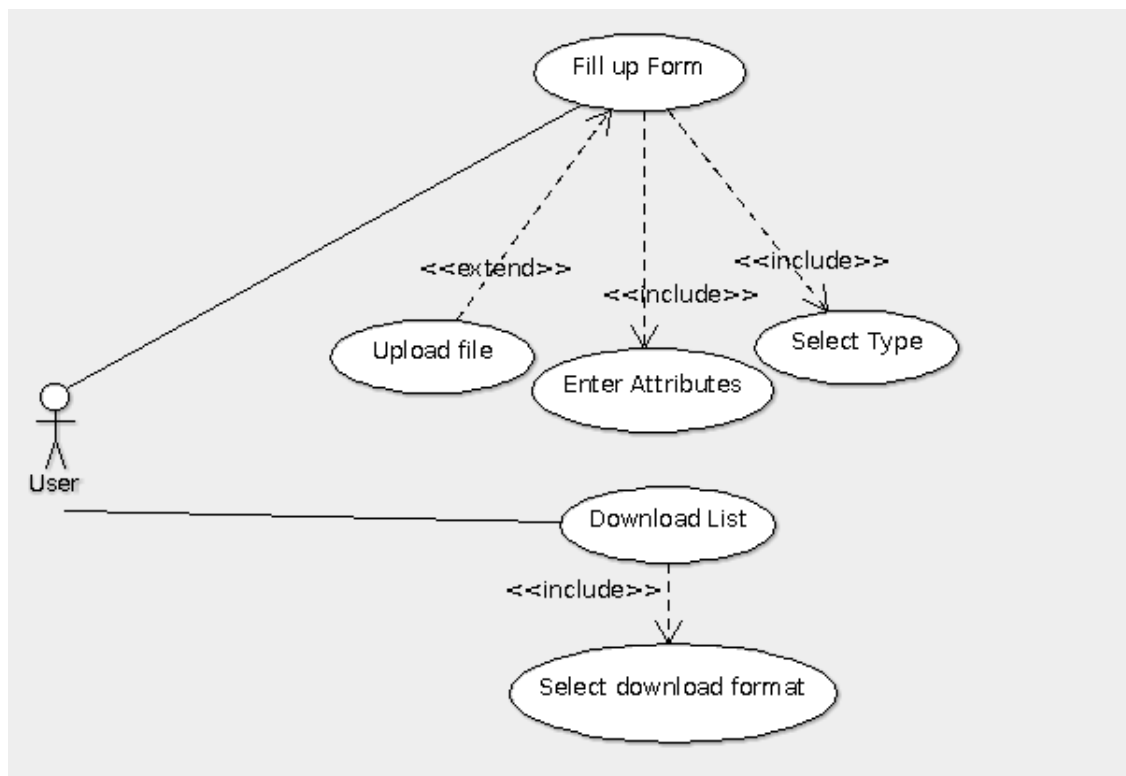
User performs following activities:

1. Fill Up form: User selects the type of publication, fills up the generated fields and upload the published documents.

2. Views the list and downloads the list: User selects the type of formatting to generate the list and type of file to download the formatted list.

4.4.4 Database in use case Diagram:
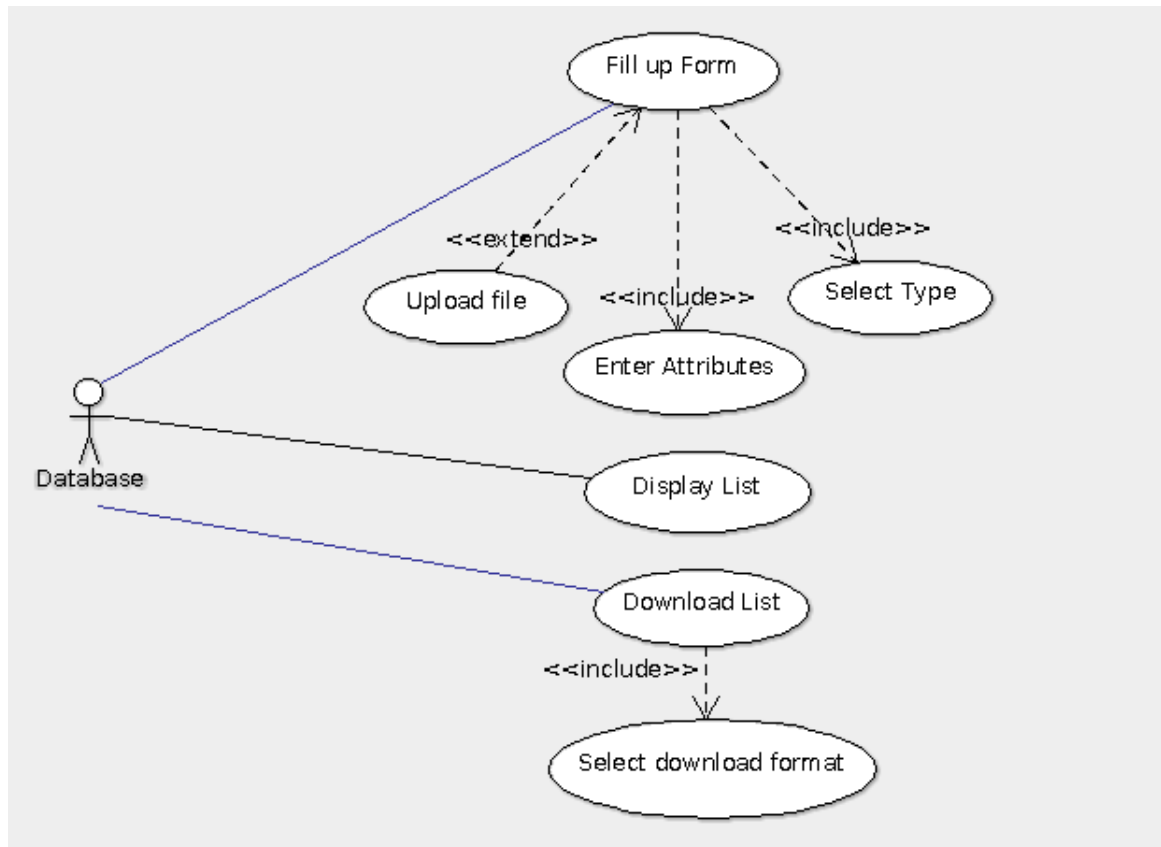
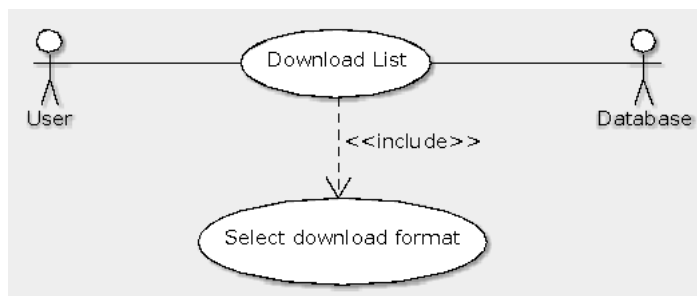

Database is associated in following activities:

1. Form fill up process to store attributes, data and files.

2. Generation of List: Database provides the data to generate the list of published materials.

3. Downloading list: Database provides the data to download the list.

4.4.5 Display List use case Diagram:

Actors	Database
Description	Enable user to view the list of their publications with the list being categorized into types, sorted chronologically/lexicographically and searchable by keys.
Data	Data of published materials
Stimulus	Whenever User visits the website.
Response	List of published materials.
Comment	User can select the favourable way to display the list.

4.4.6 Download List use case Diagram:

Actors	User, Database
Includes	Selection of Download format
Description	User can select the appropriate standard(UGC, IEEE) to generate the list of published documents and user can download the formatted output in the form of docx, PDF or HTML. Also, user can select the type of file they want to download.
Data	Data of published documents(from database), Standards Selection Data(from User), Format of download(from User)
Stimulus	When user clicks "Format Publication" button.
Response	Docx, PDF or HTML file or even formatted view only.

4.5 Sequence Diagram

4.5.1 Publication Entry:
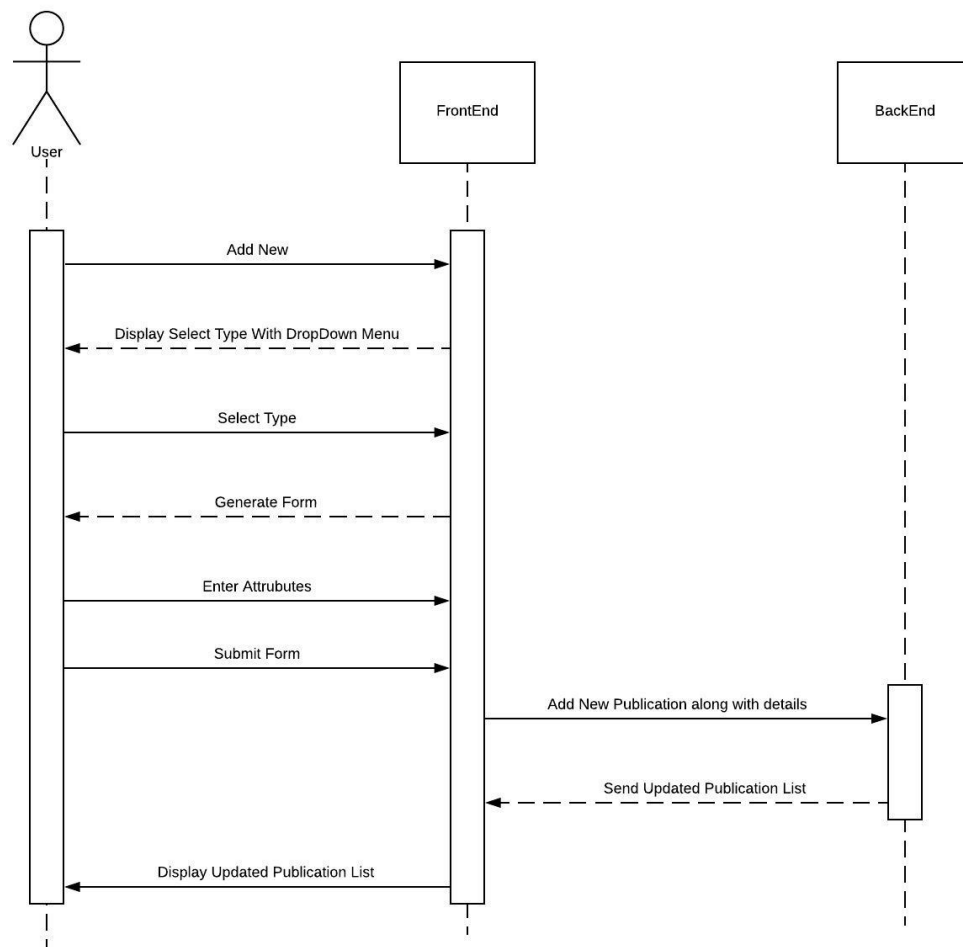
4.5.2   List Download
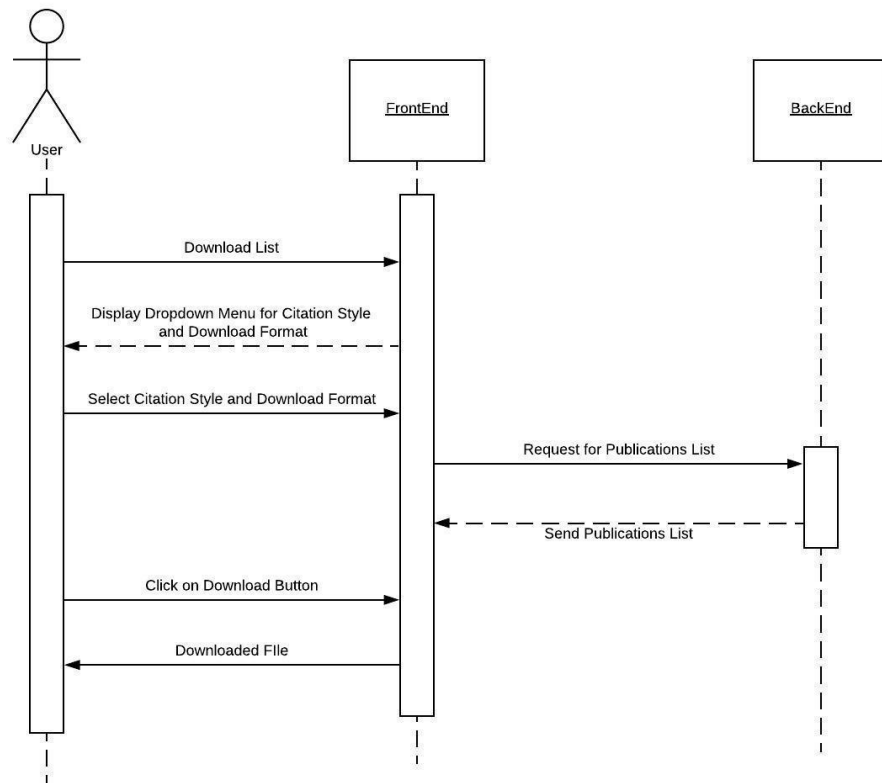
4.5.3   Display list:
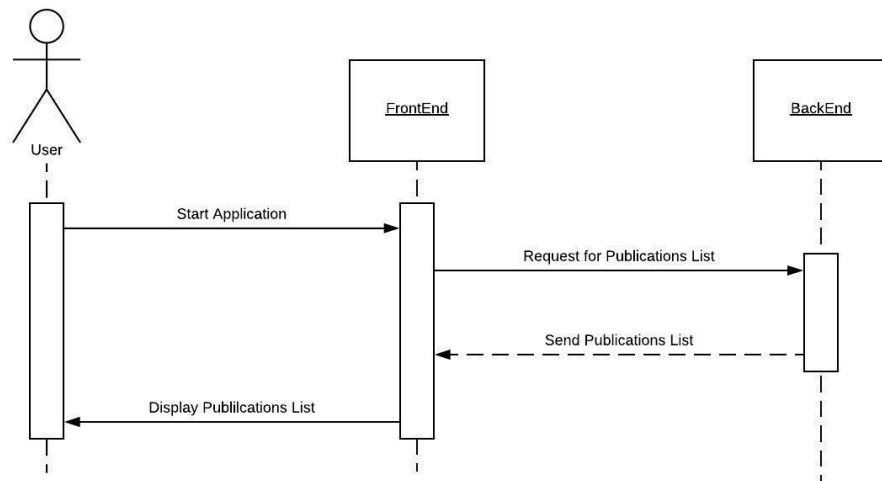
4.6   Interface Design

4.6.1   Main Interface / Homepage:

4.6.2 Print Format Selection Prompt:

4.6.3 Entry Interface: