



International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Digitized Palm Leaf Manuscript Search

J.S ShyamMohan^a, Surabattini Aparna^b, PatibandlaShalini^{a,b,*}

^aAssistant Professor, Department of Computer Science and Engineering, SCSVMV University, Kanchipuram-631561, India

^bStudent, Department of Computer Science and Engineering, SCSVMV University, Kanchipuram-631561, India

ABSTRACT

Nowadays, the people in this busy life have no time to know our Indian traditions and values. So, we decided to create a Web Application related to Rhythm Documentation. This contains many of our epic Hindu literature. This Application consists of a chatbot where you can ask queries about Rhythm Documents. It involves the importance of Rhythm Documents for future generations, history of Rhythm Documents, a search bar to search any of Rhythm Documents that exist in India, need to protect our Rhythm Documents which are going to exhaust in future due to modern technology and culture, the way our ancestors maintain information related to ethical values in olden days where there is no pen and paper and the making of Rhythm Documents. Palm leaf manuscripts were written by great poets during ancient times. As South Indians, we have to feel proud of these Rhythm Documents. There is vast knowledge about medicine and astrology in these. We are using Ayurvedic medicine nowadays by utilizing the information related to medicine from palm leaf manuscripts. Similarly, there are so many appreciable things like our Temple Architecture, Astrology, etc. We can achieve a huge knowledge about the greatness of our ancestors from this application. Finally, after researching five journal papers related to this, we concluded this project.

Keywords: Ancient Indian Culture; Digitalized Search; Palm Leaf Manuscripts; Web Application.

1. Introduction

The word manuscript is derived from the medieval Latin usage 'Manu' meaning 'by hand' and 'scribe' meaning to write. Thus, any book or paper written by hand is termed a manuscript. Manuscripts are primary sources of human history that can be found on a variety of media, including stones, clay tablets, palm leaves, metal leaves, barks, animal skin, fabric, paper, and other materials. India is a country with a very diverse cultural heritage. Various institutes, Temples, Libraries, etc. India is home to one of the oldest written Traditions known in the form of Manuscripts. The immense wealth and diversity of Indian manuscripts can be attributed to the fact that they are created and written in a variety of scripts. Palm trees are unbranched evergreen trees native to tropical and warm climates. The characteristic feature of the tree is that it is crowned with long feathered or fan-shaped leaves. The palm tree is a symbol of victory, triumph, peace, and eternal life originating in the ancient Near East and the Mediterranean world. The shape of the palm tree leaf was typical 'V-shaped in cross-section with a midvein at the apex of the V. Palm leaf with upright V-shaped leaflets are called induplicate, and inverted V-shapes are called reduplicate. palm leaves were dried, boiled in water, and then dried again before being used for writing. After that, they can burnish well with spices like turmeric. Through this process, the surface of the palm -leaf becomes smooth and polished with a stone. The leaves were cut in size, which varied from 15cm to 1m in length and 2 cm to 10 cm in breadth. Palm leaves could not be bound. One & two holes were bored in the leaves and then cords were passed through them. The manuscripts were generally placed between two wooden boards and the cord passing through the holes were wrapped around the boards.

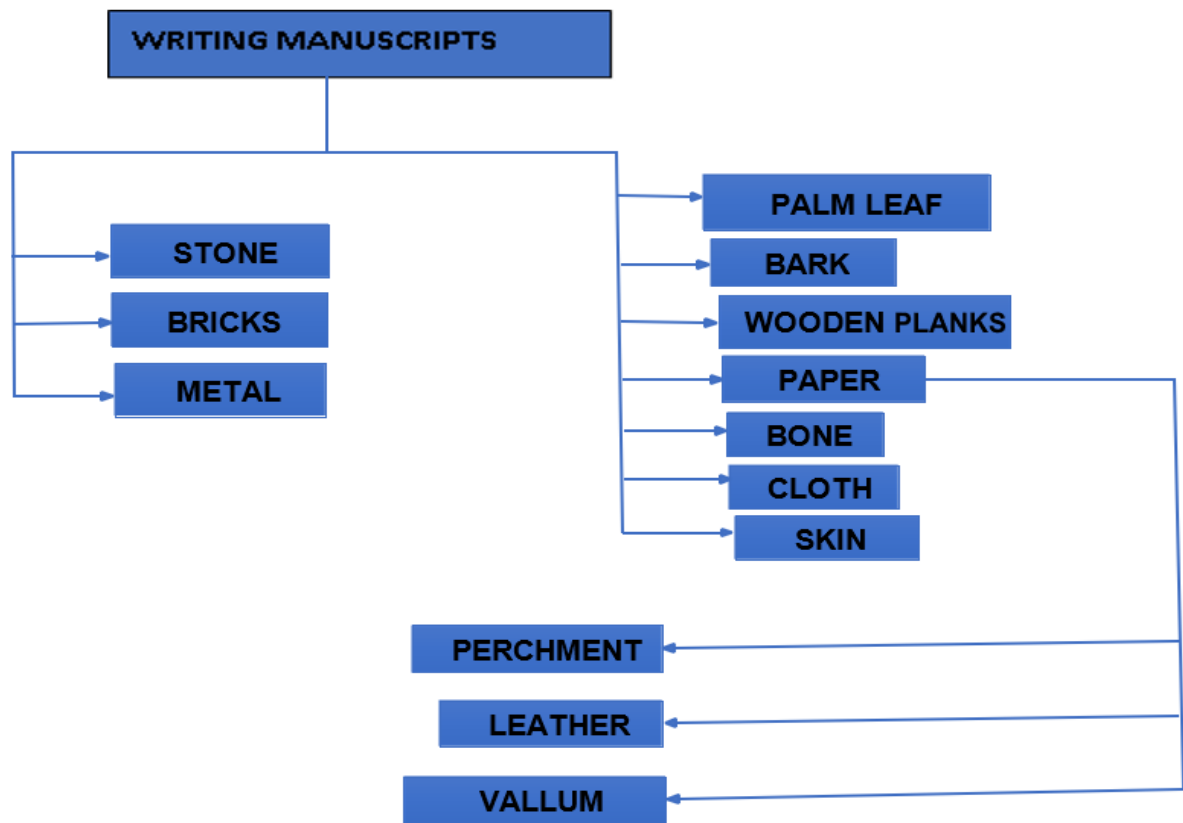


Figure 1: flowchart of materials for writing manuscripts

2. Literature Survey

Title 1: Facilitating Enhanced user Access Through palm-leaf manuscript Digitization

Author: VK Mehta et al

Description: Palm-leaf Manuscripts are found across the country, inherited by families from their preceding generations. However, with time, their importance has greatly decreased, and few people understand the need for preserving and maintaining them. It is now left to individual scholars, institutions like libraries and universities, and the governments to take the onus to preserve the palm-leaf manuscripts in their original form, as well as to take up their processing, especially through digitization.

Title 2: Digitization of Indian Manuscripts Heritage

Author: Sahoo, Jyotshna and Basudev Mohanty

Description: Generally speaking, digital preservation is about safeguarding and maintaining a digital collection for the long term i.e; into the foreseeable and distant future

- The sustainability and accessibility of the digital collection is the main objective of the scheme of digital preservation
- The preservation of the digital collection is a must as without an appropriate digital preservation method a digital collection may become useless
- The main goal of a digital preservation process is to keep digital information in readable and usable condition
- It combines policies, strategies, and actions that ensure access to digital content over time.

Title 3: Indian Manuscript Heritage and the Role of National Mission for Manuscripts.

Author: Sahoo, Jyotshna, Bismita Sahoo, Basudev Mohanty, and Nrusingh Kumar Dash

Description: "Indian Cultural Heritage Resources for Academic Libraries" discussed the National Manuscript Mission that seeks to unearth and preserve the vast manuscript wealth of India. They have mentioned that the life of a palm leaf manuscript is far longer than a modern device like CD or microfilm. They mentioned that with the increasing popularity of printed books the interest in collecting and preserving manuscripts gained ground in India. Some famous bibliophiles and institutions built up their collections and as a result, large repositories of manuscripts emerged and have played a significant role in preservation and access to manuscripts in India by the Institutional and individual efforts in these fields.

Title 4: Notes on the Making of Palm-Leaf Manuscripts in Siam.

Author: Schuyler, Montgomery

Description: The process is about as follows: The leaves of the palm tree are brought in from the country in large bundles, each leaf being about eighteen inches long and doubled in the middle. These leaves are given to the priests by the peasants as a means of "making merit." The first operation in converting the leaves into the finished manuscript is to divide them by cutting out the midrib, thus making two leaves of each leaf of the tree. These leaves are then made up into bundles of some hundred pieces each and are then placed between boards tightly tied up and wedged in a press. While still there the edges of the leaves are trimmed smoothly with a semi-circular knife which is in a handle some two feet long. After sanding the leaves to give them a smooth surface for writing or rather inscribing, the bundles are then ready for the next stage in the book-making process.

Title 5: Digitization of Old Manuscripts, Preservation of Palm-Leaf Manuscripts in Tamil

Author: P sohlavec S, Samuel, John G

Description: In our opinion technology should be serving the scientific community's needs anywhere and in any research area. Technology developers and managers should do so to "enable the extension of the reach of research and education, an improvement in the quality of learning". Digitization is even more urgent in developing countries where everything is lacking: government funding and involvement, civil society actions, and international cooperation. In most of these kinds of projects, users and potential users are not consulted. Users come from different cultures and have different backgrounds; Great effort should be made to ensure access to all information to all people through a well-defined policy of preservation and enhanced access. The digitization of cultural heritage is very special because it is an emerging field with high relevance to education. Collaboration should increase between librarians and researchers in the sense that the huge volume of documents to be managed is overwhelming. Thus, researchers should give them a helping hand

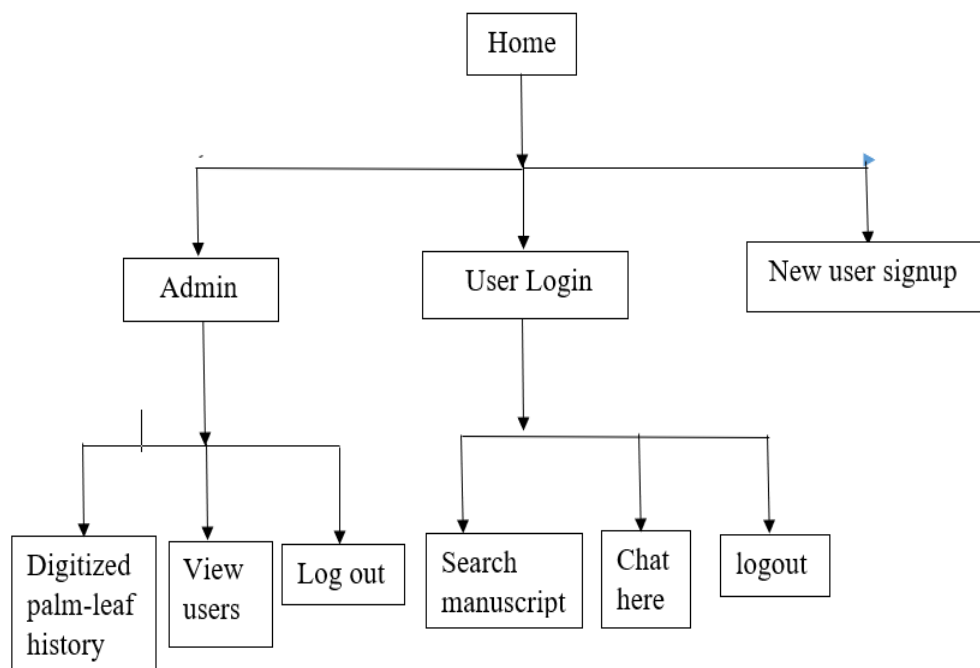
3. ProblemStatement

There are so many manuscripts that are useful to our future generations, but there is very less source of learning from them. So, we decided to collect all the information related to palm leaf manuscripts.

4. Existing System

The main aim is preserving palm-leafmanuscripts. So, we used MySQL database to store information from admin and to retrieve data for users. If people andgovernment encourage this website, then we will get more information in the future. There is also a chatbot to get a required answer for a query. In the front-end, we used HTML, CSS, JavaScript and in the back-end, we used python, Django.

5. Architecture

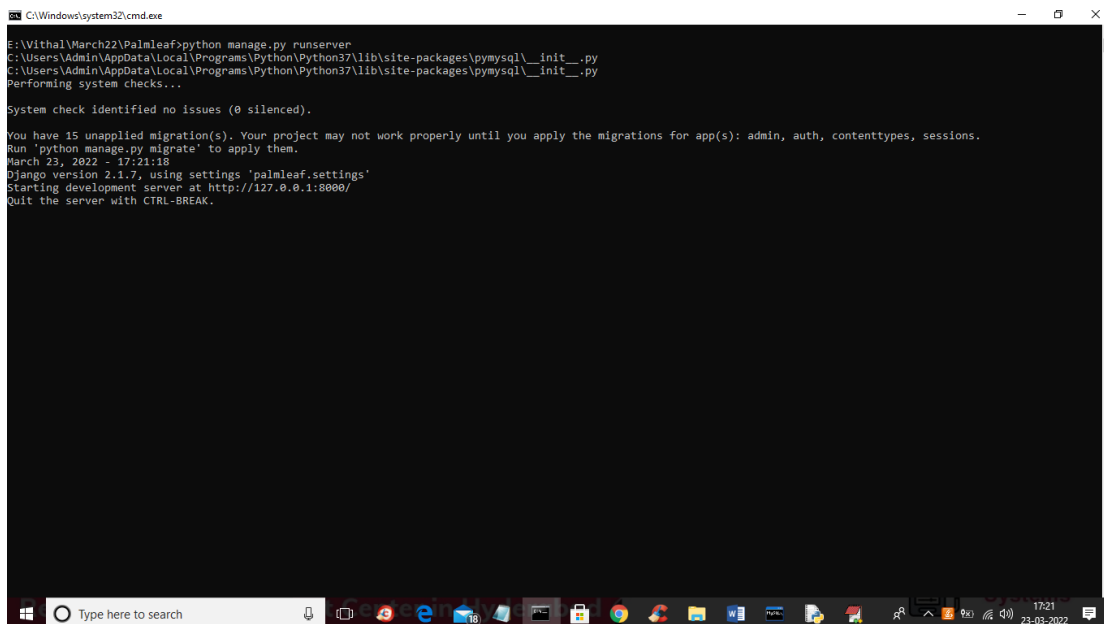


6. Implementation

In this project, we are using HTML, CSS, JavaScript for the front-end, and python, Django for the backend.

- Firstly, on the home page, we created a logo along with the project title. In the navbar, there are links to navigate from the home page to admin, user login, signup pages.
- In the admin page, it will ask for a username and password to log in as admin. After this step, the links in the navbar will change to digitized palm leaf history, view users, logout
- In the digitized palm leaf history page, it will ask to upload information related to palm leaf including palm leaf ID, name, age, place, authors, written on, description, and image. After submitting these details, we can see “palm digitizing process completed” for admins’ confirmation of updating details.
- In the view users page, we can see the list of users and their details including Username, Password, Contact. No, Email ID, Address.
- In the New user signup screen, it will ask for the user’s details like Username, Password, Contact. No, Email ID, Address to create an account and register on this website. After registering, it will show “signup process completed” for users’ confirmation of creating their account.
- On the user login page, the users who already registered on this website, use their credentials to access the website. It is similar to the admin page design.
- In the search manuscript page, user can enter their query and click the search button to see the required information. The search result is in the table format, which contains all the details given by the admin like palm ID, name, age, and so on.
- In the chat here page, users can ask queries and get answers from the chatbot. If a user asks any irrelevant query, then the chatbot will give an “unable to recognize your query” message.
- Finally, after using all this user or admin can log out using the “logout” link on the right side of the navbar.

Result:

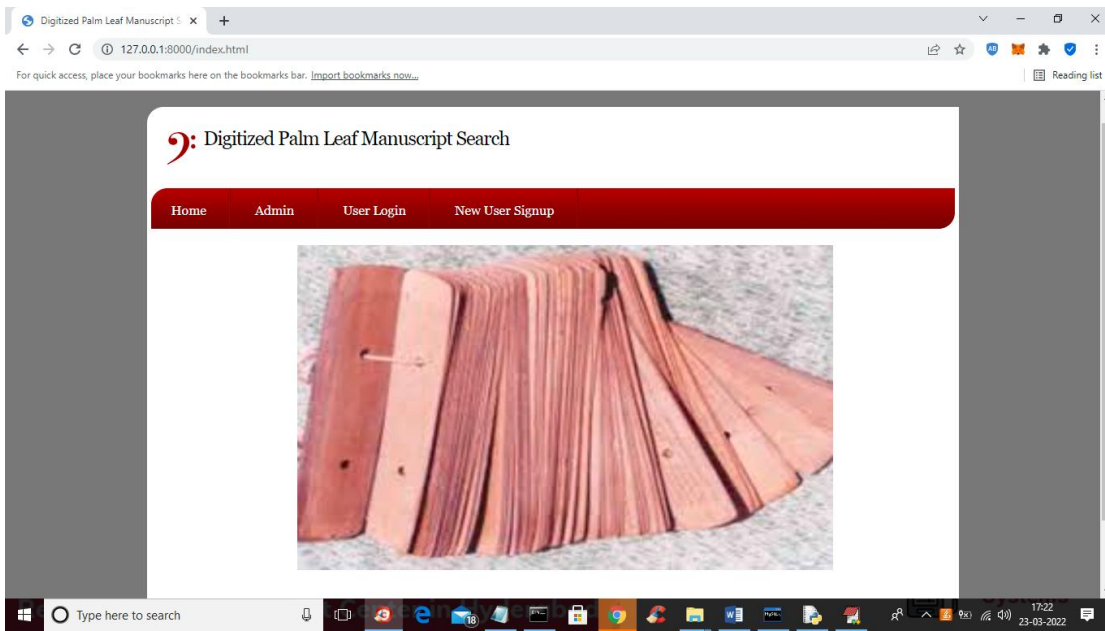


```
C:\Windows\system32\cmd.exe
E:\Vithal\March22\Palmleaf>python manage.py runserver
C:\Users\Admin\AppData\Local\Programs\Python\Python37\lib\site-packages\pymysql\__init__.py
C:\Users\Admin\AppData\Local\Programs\Python\Python37\lib\site-packages\pymysql\__init__.py
Performing system checks...

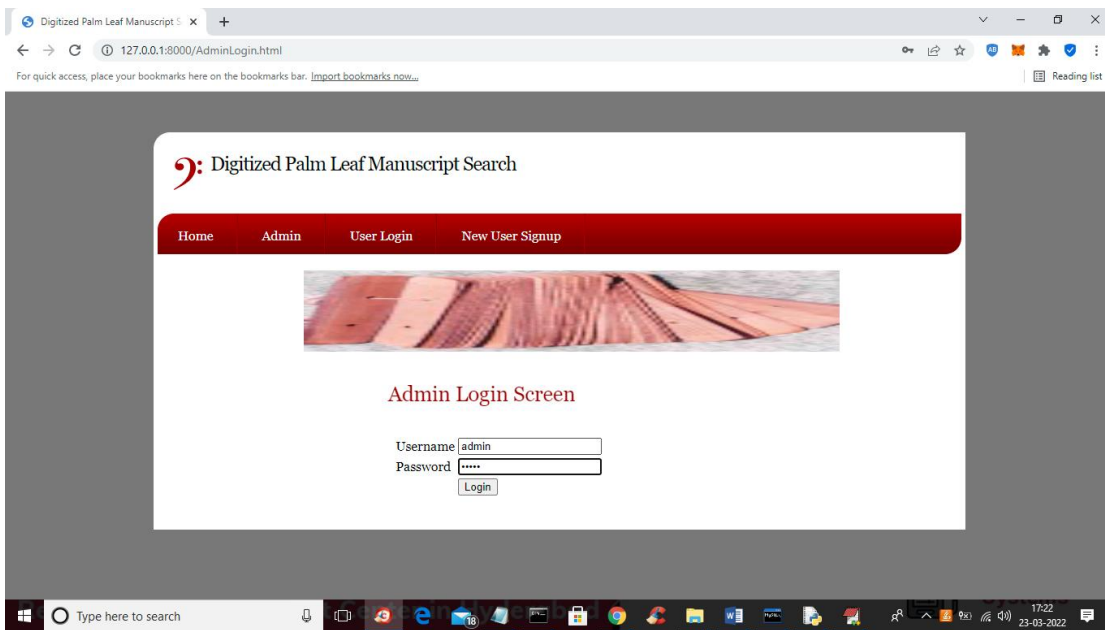
System check identified no issues (0 silenced).

You have 15 unapplied migration(s). Your project may not work properly until you apply the migrations for app(s): admin, auth, contenttypes, sessions.
Run 'python manage.py migrate' to apply them.
March 23, 2022 - 17:21:16
Django version 2.1.7, using settings 'palmleaf.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CTRL-BREAK.
```

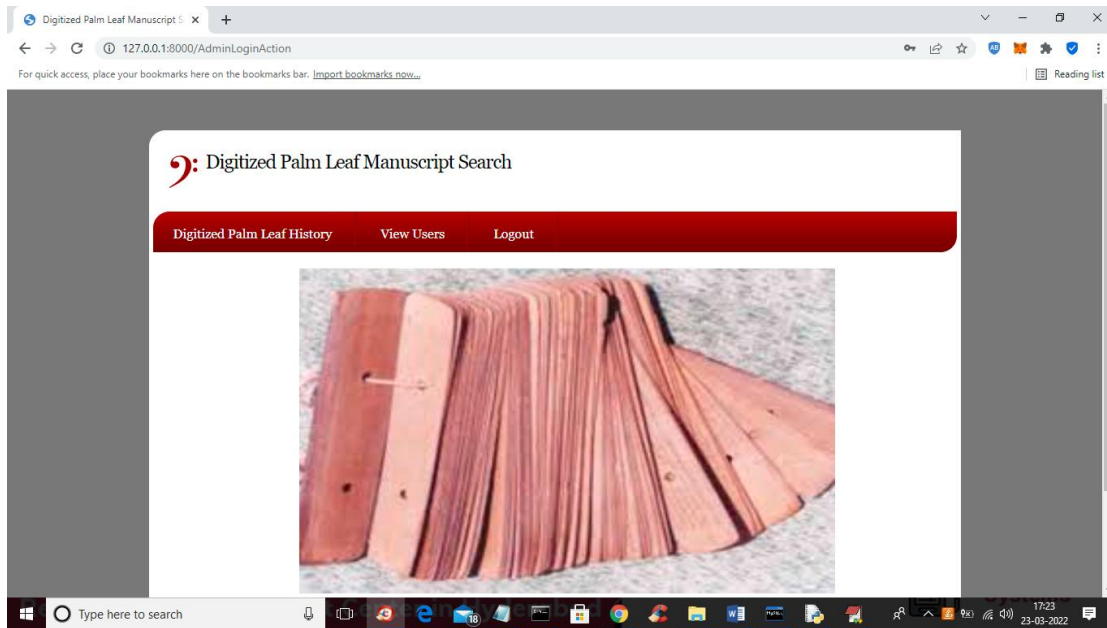
In above screen python DJANGO server started and now open browser and enter URL as <http://127.0.0.1:8000/index.html> and press enter key to get below page



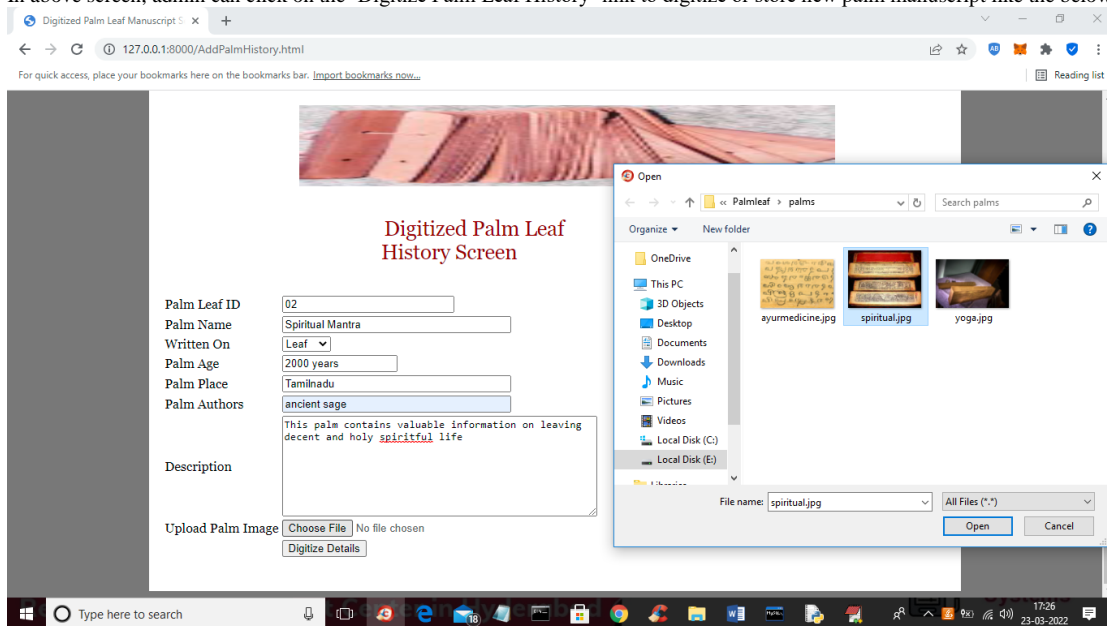
In above screen click on the 'Admin' link to get below login screen



In the above screen admin is login and after login will get below screen



In above screen, admin can click on the 'Digitize Palm Leaf History' link to digitize or store new palm manuscript like the below screen



In the above screen admin will add details of the Palm leaf manuscript and then upload its image and then click a button to digitize that manuscript

Digitized Palm Leaf History Screen

Palm Digitizing Process Completed

Palm Leaf ID

Palm Name

Written On

Palm Age

Palm Place

Palm Authors

Description

Upload Palm Image No file chosen

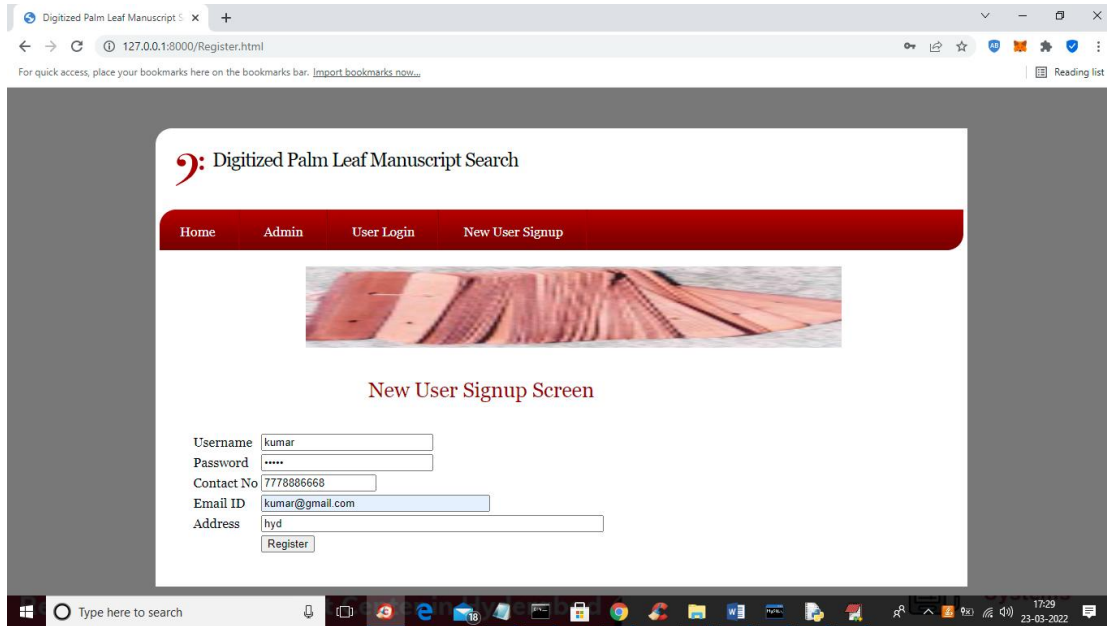
In the above screen in the red color text we got output as digitizing process completed and now click on 'View Users' link to view all users registered with the application

Digitized Palm Leaf Manuscript Search

Digitized Palm Leaf History View Users Logout

Username	Password	Contact No	Email ID	Address
aaa	aaa	8887779991	aaa@gmail.com	hyd

In the above screen, the admin can view all user details registered with the application and now log out and signup one user.



Digitized Palm Leaf Manuscript Search

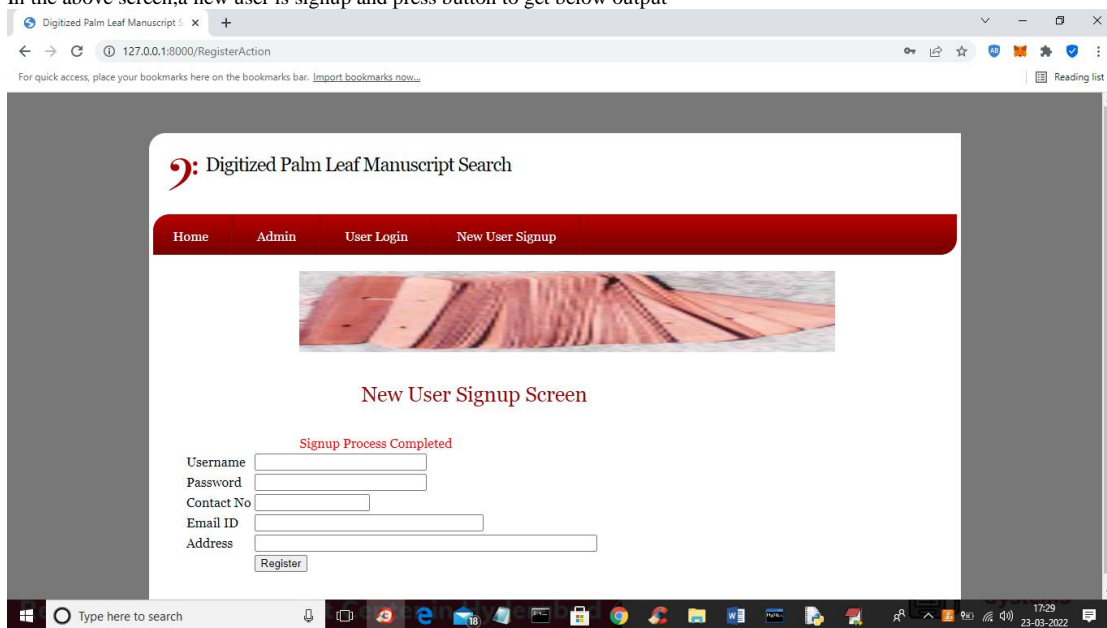
Home Admin User Login New User Signup

New User Signup Screen

Username: kumar
Password: *****
Contact No: 777886668
Email ID: kumar@gmail.com
Address: hyd

Register

In the above screen, a new user is signed up and press button to get below output



Digitized Palm Leaf Manuscript Search

Home Admin User Login New User Signup

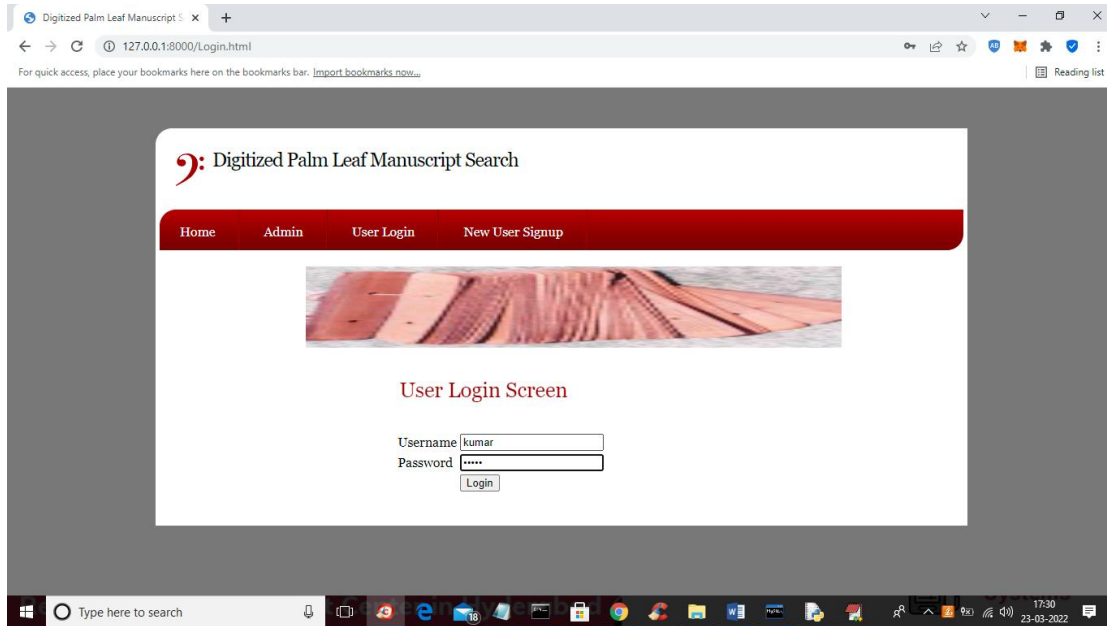
New User Signup Screen

Signup Process Completed

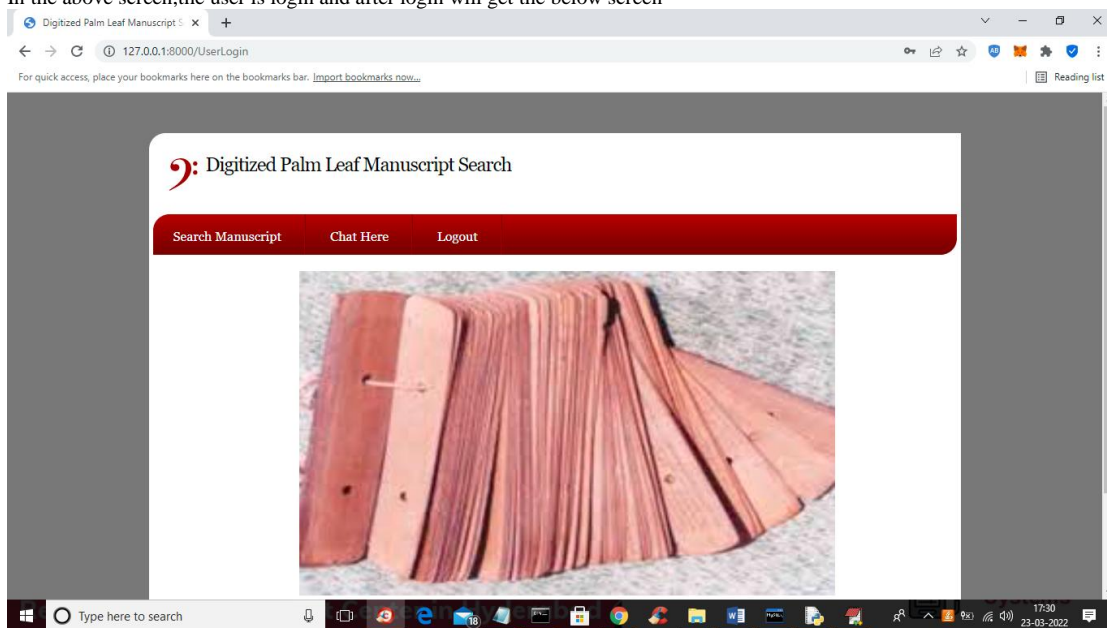
Username:
Password:
Contact No:
Email ID:
Address:

Register

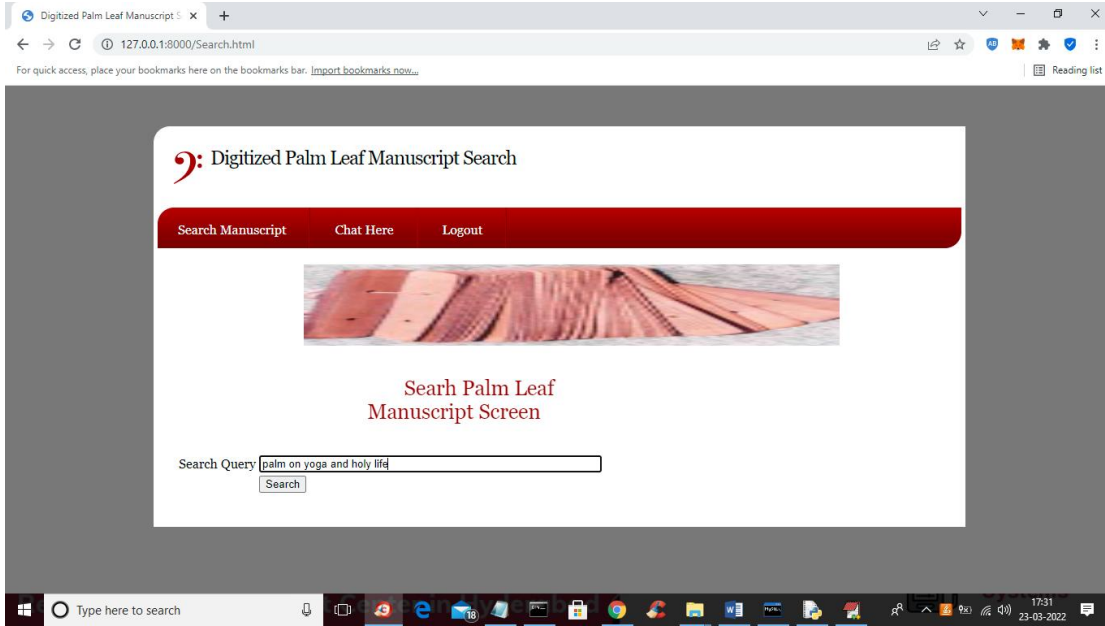
In the above screen, user signup task is completed and now click on the 'User Login' link to get below the login screen



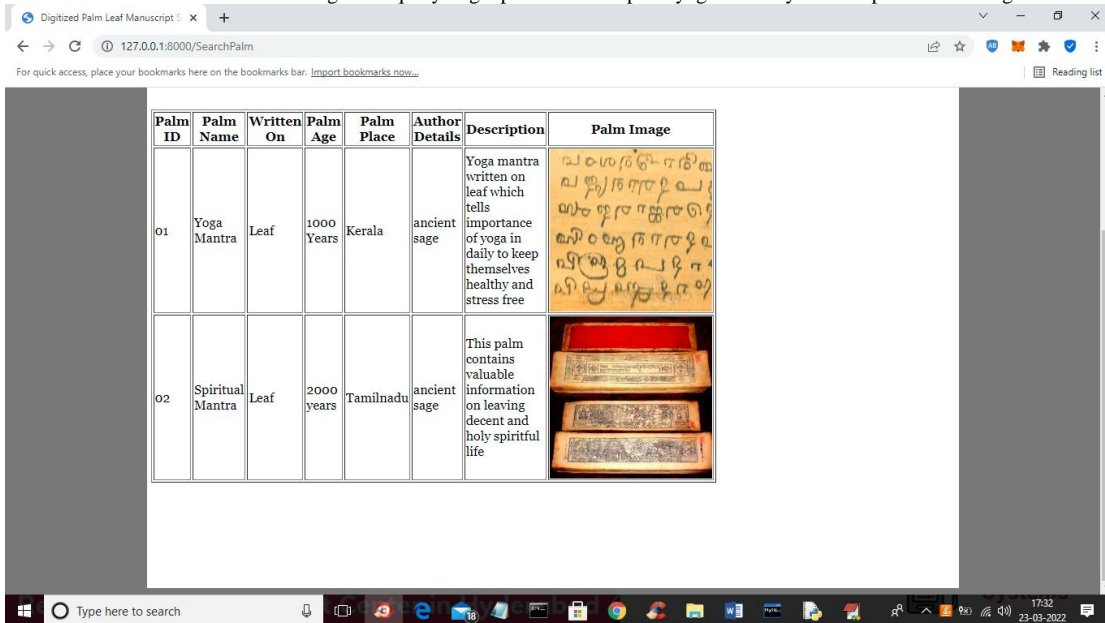
In the above screen, the user is login and after login will get the below screen



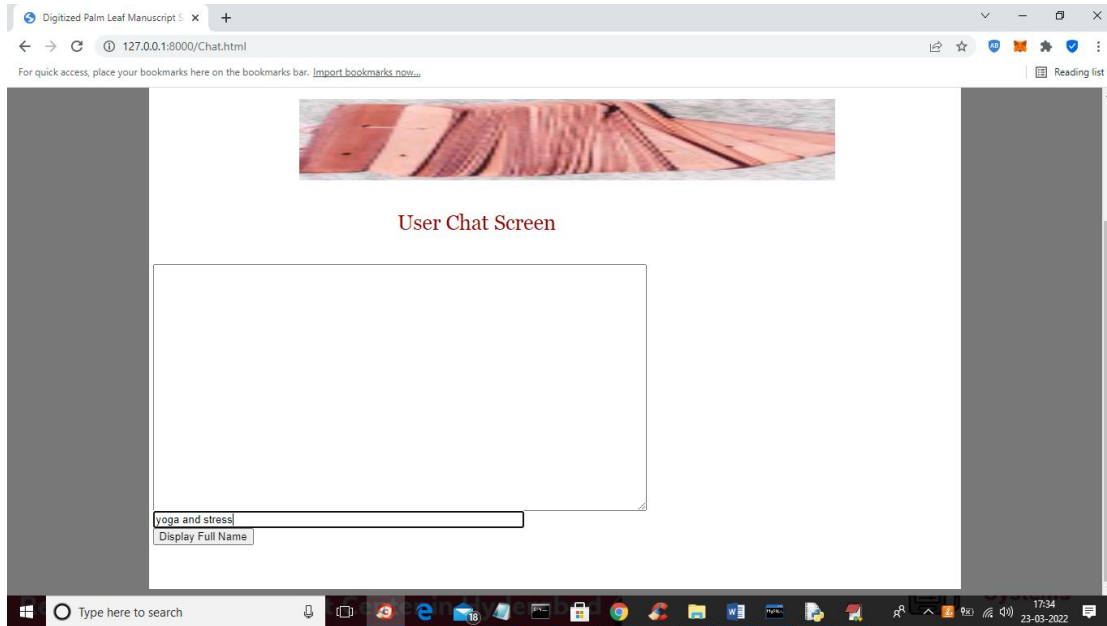
In the above screen, user can click on the 'Search Manuscript' link to get the below screen



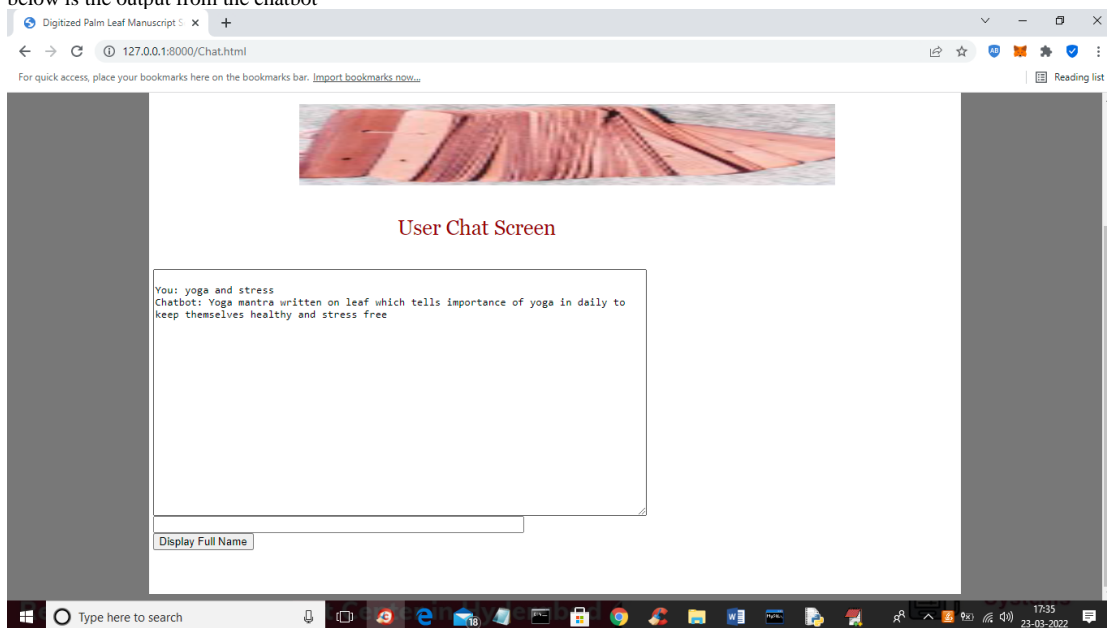
In the above screen the user is entering some query to get palm manuscript on yoga and holy life and press button to get below output



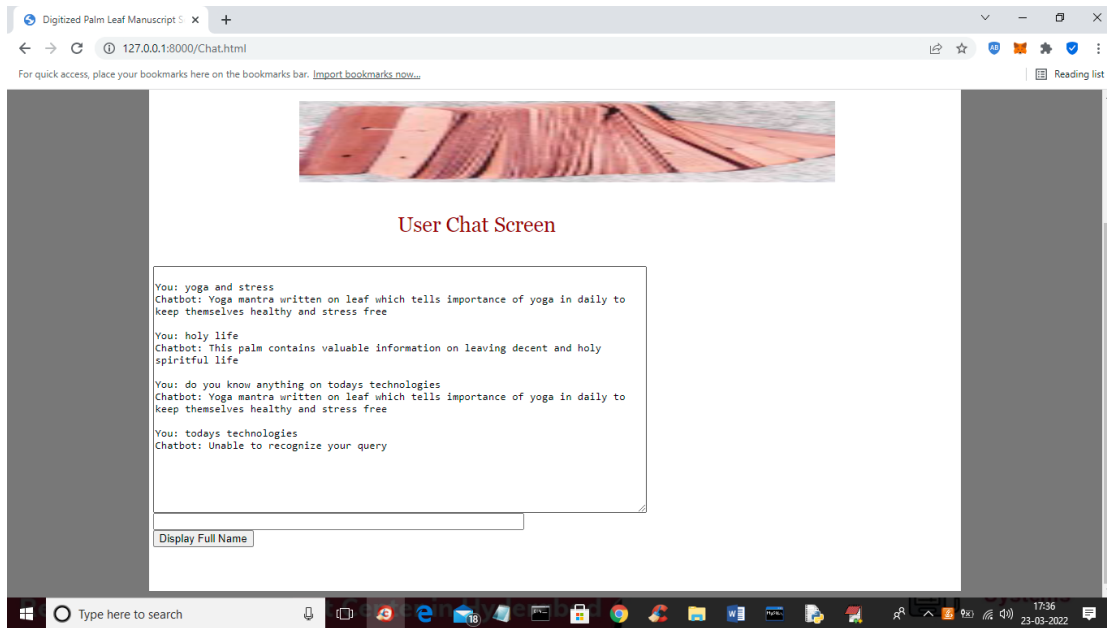
In the above screen, if any manuscript is available on the given query then we will get the above output where the user can see all manuscript details with images and author and place details where this manuscript is present and now user can click on the 'Chat Here' link to get the below screen



In the above screen in the last text field user can enter his query and press the button to chat with the application. In the above screen, I entered some queries and below is the output from the chatbot



In the above screen in text area first, we can see the query and then the response from the chatbot and similarly you can ask any question and if an answer is available then the chatbot will reply



In the above screen, we can see if the query is not matched with any manuscript then the chatbot give a response as 'Unable to recognize your query'. Similarly, admin can digitize any number of manuscripts and all users can search that manuscript and get familiar with ancient valuable information.

7. Conclusion

India is a country that is extraordinarily blessed with a rich cultural heritage. So, we want to preserve India's palm-leaf manuscripts. For this, we can prepare a web application using the digitized process to preserve the palm leaf manuscripts. For preparing these Rhythm documents we are going to make a project. In this project, we can explain palm leaf introduction, factors of deterioration, preservation, protection of manuscripts from dust and atmospheric pollution. In the project description, we can explain neatly the preparation, digitization, and conclusion in a stepwise manner. For this, we also need some co-operation of awareness to take steps to ensure that this tangible culture of the country is preserved for present and future generations, the efforts needed to undertake this project need to be taken up on a war footing. Because of the delicate nature of palm leaf manuscripts and the high cost of digitizing such a large collection, this decision was made. Unless the present generation is drawn into supporting to protect these collections of manuscripts, and the mission to digitize these manuscripts will end up on the shelf, like the manuscripts themselves, forgotten and dwindling into oblivion.

Finally, Preserving India's palm manuscripts for the future, our team always would like to sincerely thank and rejoice in the merit of all parties that played a significant role in preserving these invaluable teachings for the generations to come.

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