



INTERACTIVE E-LEARNING PLATFORM FOR DEAF & DUMB CHILDREN AND CONTENT-BASED FILTERING FOR CHARITABLE PHILANTHROPY

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Abstract: The proposed child assistance website sounds like a valuable resource for parents and caregivers who are seeking information and resources to care for children, including those who are deaf and dumb. The website's organization into different classes that cover various categories, such as healthcare, education, and basic needs, will make it easier for users to find the information they need. The inclusion of videos and informative content will also be helpful for users who prefer visual and interactive learning experiences. Additionally, the donation system that allows users to make contributions to an orphanage is a commendable feature, as it encourages users to give back to the community and support children in need. The content-based filtering system that recommends orphanages with the highest similarity points based on the user's profile is also a useful tool, as it can help users make informed decisions about where to donate their things. Overall, the child assistance website has the potential to make a significant impact on the lives of children and their caregivers. By providing a centralized location for information and resources, the website can help users provide the care and support that children require, ultimately improving their quality of life.

Index Terms – Education, Deaf and Dumb Children, Orphanages, Donation, Content-Based Filtering

I. INTRODUCTION

The growth of science and technology has had an impact on education policy. In education, a teacher must be able to use technology. It expects to accomplish the instructive objectives that have been set up through the job of innovation. Teachers and students face challenges due to technology's impact, but it also makes it easier to achieve education's goals. Changes in education must be able to be accommodated by teachers. The Covid-19 pandemic necessitates online education at the moment. Currently, technology plays a significant role in the learning process. During the pandemic, e-learning, or electronic learning, is regarded as an appropriate method of education. Technology can help with the implementation of online learning. The ease and efficiency with which the studied sources and materials can be searched is one advantage of technology in online education.

The execution of web-based learning enjoys a few benefits, to be specific:

- (1) educator and understudy associations become more productive
- (2) understudy action in talking with companions can run as expected without instructors' assistance
- (3) guardians, instructors, and understudies can convey effectively
- (4) innovation can be utilized for making tests and tests simpler
- (5) instructors can give material simplicity to understudies as recordings, photographs, and composed synopses so they can be downloaded by understudies
- (6) Questions and answers area are from educators and understudies should be possible whenever and anyplace.

Parents can accompany their children while they engage in online learning at home because it requires parental involvement. Until the conditions return to normal, education must continue. The role parents play in assisting their children in the learning process impacts their child's development and growth. Parents' support of their children's education can help them develop self-discipline. Teaching, educating, guiding, providing facilities for learning, and acting as positive role models for their children are all important aspects of parents' involvement in their children's education. The level of parental education, family wealth, family affection, and other factors contribute to a parent's success in raising children. The determination of parents to help their children achieve their objectives can benefit their efforts and dedication. The job of guardians in learning help is to help their kids by giving mental fulfillment that upholds youngsters to feel cheerful while learning and decreases weariness.

II. EXISTING MODEL

E-learning is used in Web-based learning, computer-based learning, virtual-based learning, and digital technology. It is a computer and network-enabled transfer of knowledge. It is the combination of learning and knowledge management. It is also a useful tool that has contributed to facilitating education for deaf people. Deaf people can get benefit from this technology by increasing their knowledge and improving their skills. They can utilize the mobility feature to learn anywhere and at any time. E-Learn is an important one in higher education. Most students easily learn and develop skills and knowledge in the e-learning method.

DISADVANTAGE

- Technical issues: E-learning relies heavily on technology, and technical issues can be a significant barrier to learning. Poor internet connection, system crashes, and software glitches can all disrupt the learning process.
- Limited interaction: Unlike in-person learning, e-learning can be a solitary experience. Students may miss out on the opportunity to interact with peers and instructors in real-time, which can be a disadvantage for some learners.

III. PROPOSED MODEL

The methodology for a child assistance and orphanage donation website can be broken down into several steps:

Identify the target audience: The first step in developing a child assistance and orphanage donation website is to identify the target audience. This will help determine the content, design, and functionality of the website. The target audience could include parents, educators, children, donors, and volunteers.

Determine the content categories: The next step is to determine the categories of content that will be included on the website. This could include educational videos, articles, and classes for children, information on orphanages. There are some specific tiny step pages where parents are only allowed to view that information.

Implement content-based filtering: To recommend content to users, the website could use a content filtering algorithm. The algorithm would analyze user behavior and preferences to provide personalized recommendations for orphanage donation opportunities.

Implement a donation system: The website should include a donation system that allows users to donate to orphanages.

ADVANTAGE

- By determining the content categories, the website can provide relevant and useful information to its users. This helps to establish the website as a valuable resource for parents, educators, children, donors, and volunteers.
- Implementing Content-based filtering can help to increase user engagement and satisfaction by providing personalized recommendations. This can help users discover new content and opportunities that they may not have otherwise found.
- Implementing a donation system can help to facilitate charitable giving and support orphanages in need. This can provide users with a sense of satisfaction and fulfillment, knowing that their contributions are making a difference in the lives of others.

IV. SYSTEM ARCHITECTURE

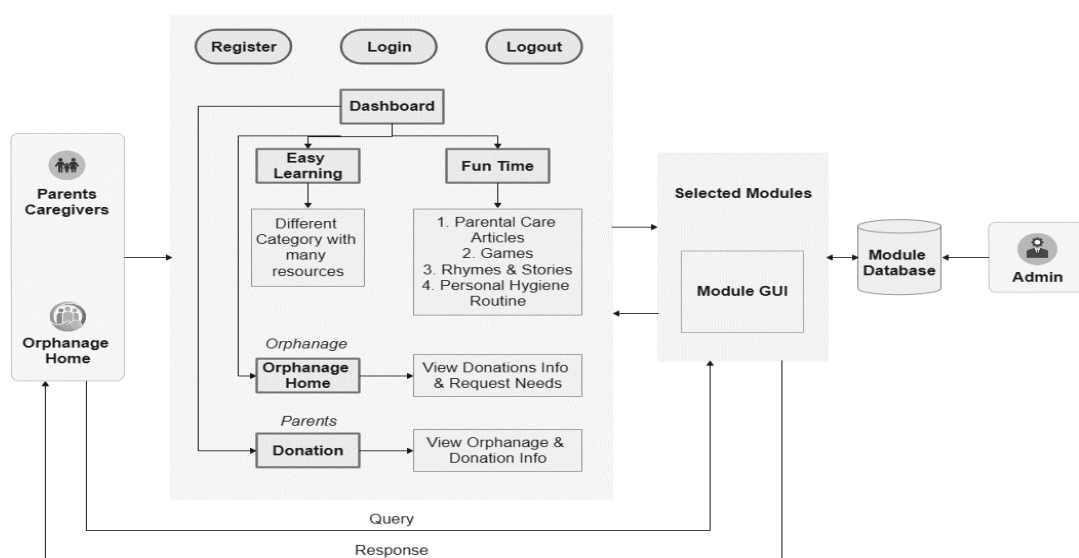


Fig. 1. System Architecture

V. MODULES IMPLEMENTATION

ADMIN

For the child assistance and orphanage donation website, the website administrator would typically have access to a backend dashboard that allows them to manage various aspects of the website. The administrator would be responsible for adding classes and categories to the website and would have access to view information on parents, orphanages, and donation transactions.

Specifically, the admin would be able to:

Add classes and categories: The admin would have access to a content management system (CMS) that allows them to add, edit, and delete classes and categories of content on the website.

View parents and orphanages: The admin would have access to a database of parents and orphanages that have registered on the website. They would be able to view information such as contact details.

View donation information: The admin would have access to a record of all donations made through the website. They would be able to view information such as the donor's name, donation, and donation date. Overall, the website administrator would play an important role in managing the website and ensuring that it is meeting the needs of its users and effectively supporting child welfare causes.

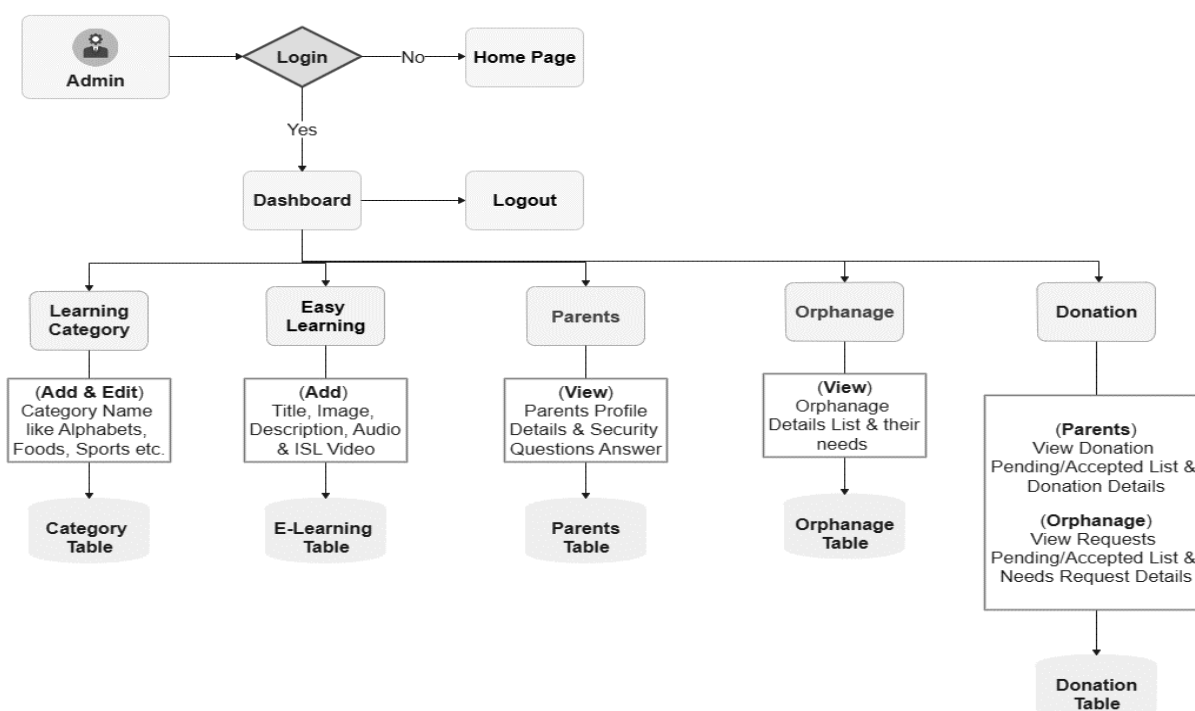


Fig. 2. Flow Chart of Admin Module

PARENTS

Parents would typically be able to create an account and sign in to the application. Once logged in, they would be able to view the classes and categories of content that are available on the website. To ensure the security of the website, it could be set up so that certain categories of content, such as the Fun Time category, are only viewable by parents who have successfully answered secret questions. These secret questions could be set up during the account creation process and could be used as an additional layer of security to ensure that only authorized users can access certain content. Overall, allowing parents to create an account and sign in to the website provides a more personalized experience and allows them to easily access relevant content for their children's education and well-being. Additionally, implementing security measures such as secret questions helps to protect the privacy and security of users on the website.

CONTENT-BASED FILTERING ALGORITHM

Content-based filtering:

Content-based filtering is a powerful method for creating personalized recommendations for users. By assigning attributes to database objects and building user profiles based on user activity, content-based filtering can suggest products, services, or content that the user is likely to enjoy based on their preferences.

Assigning attributes:

Assigning attributes to database objects is a crucial step in content-based filtering. These attributes can be manually assigned by subject-matter experts, or algorithmically determined based on various features of the object, such as its title, genre, or keywords. Once attributes have been assigned to database objects, they can be used to create a unique user profile for each user.

Building a user profile:

User profiles are built by analyzing the user’s activity history, such as items purchased, browsed, read, watched, or listened to, and assigned attributes. Attributes that appear more frequently across multiple objects are given more weight, while attributes that show up less often are weighted less heavily. User feedback in the form of ratings or likes/dislikes is also incorporated to further refine the user profile.

Based on the user profile and assigned attributes, the recommender system assigns scores to each database object, indicating how similar the object is to the user’s preferences. The recommender system, then suggests items with the highest scores to the user.

Overall, content-based filtering is a valuable tool for creating personalized recommendations for users. By analyzing user activity and assigned attributes, content-based filtering can provide users with suggestions that align with their preferences and interests.

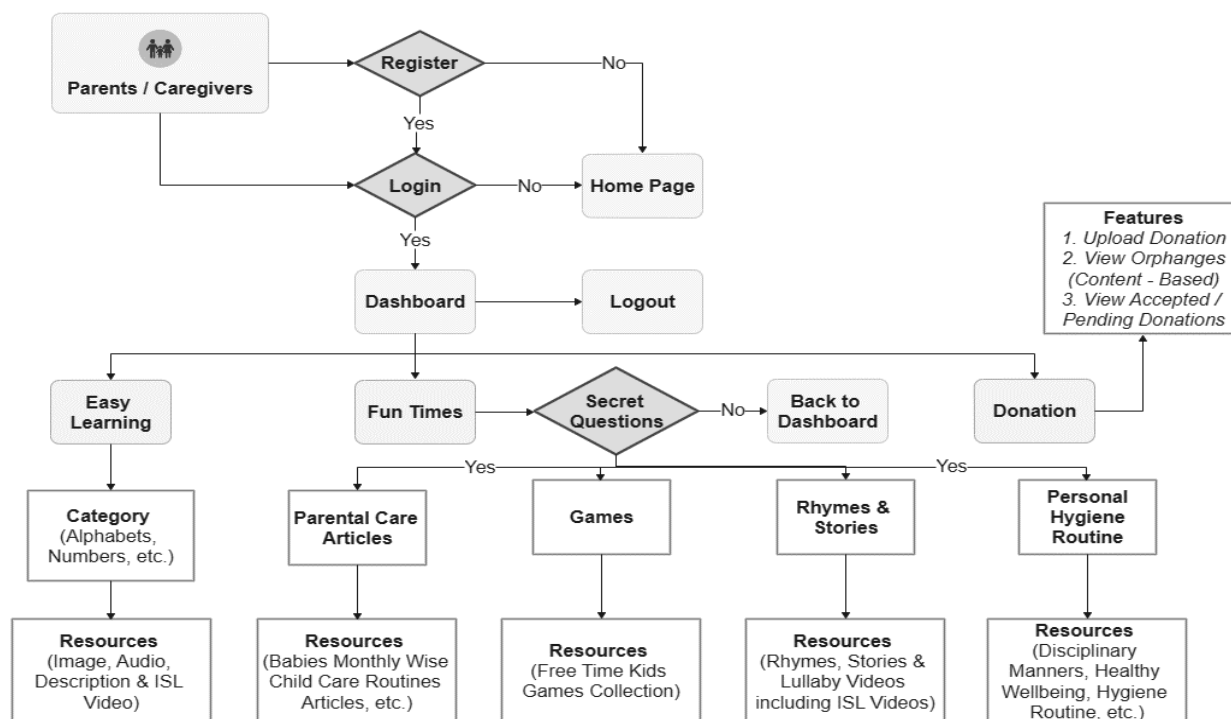


Fig. 3. Flow Chart of Parent Module

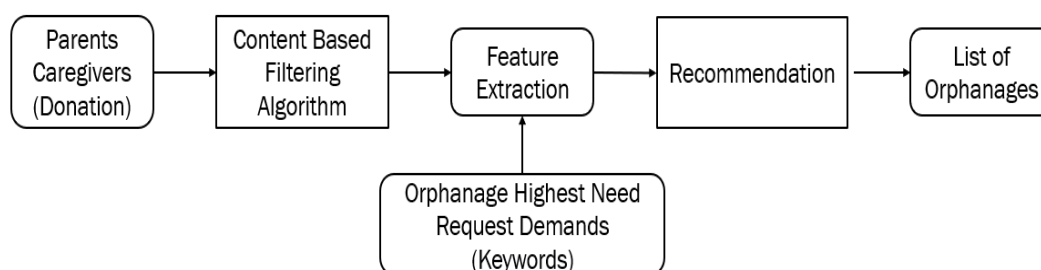


Fig. 4. Content-Based Filtering Algorithm

ORPHANAGE HOME

Orphanages would typically be able to create an account and sign in. Once logged in, they would be able to view their donation details and see a record of all the donations they have received through the website. This feature would help orphanages keep track of their donations and see how much support they have received from the community through the website. It could also help orphanages plan and budget for their expenses and needs, based on the donations they have received. Overall, allowing orphanages to create an account and view their donation details helps to create a more transparent and accountable platform for donating to child welfare causes, and helps to build trust and engagement with donors and supporters. Allowing orphanages to have the option to accept or decline support received from users can help them manage their resources more effectively and ensure that they are receiving the support they need. Additionally, providing contact details along with donation information can facilitate communication between orphanages and donors, which can help build stronger relationships and trust. This can also provide a sense of transparency and accountability to the donation process, which is important for building trust with donors and supporters.

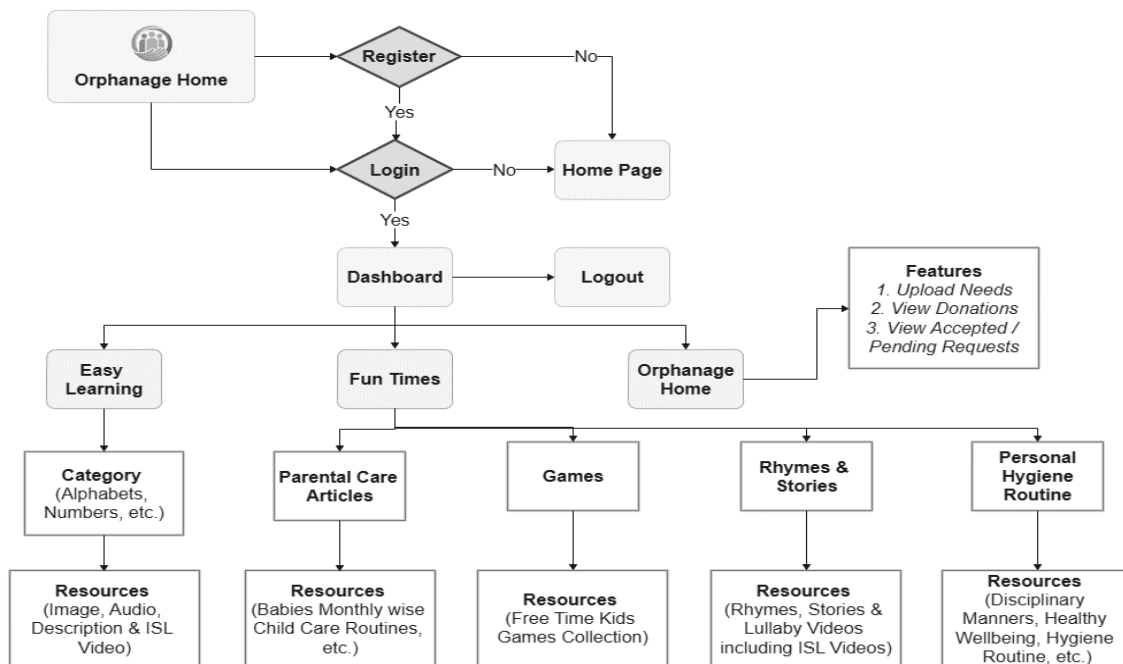


Fig. 5. Flow Chart of Orphanage Home Module

VI. RESULTS AND DISCUSSIONS

WEBSITE INDEX PAGE

Parents and caregivers can access the website by registering first and then logging in as shown in Figure 6 and Figure 7. An admin panel is also available for managing the site. The website's index page will include an "About Us" section.

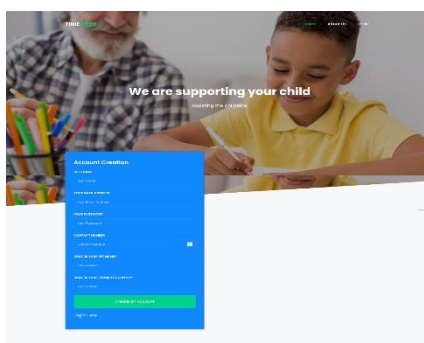


Fig. 6. Registration Page

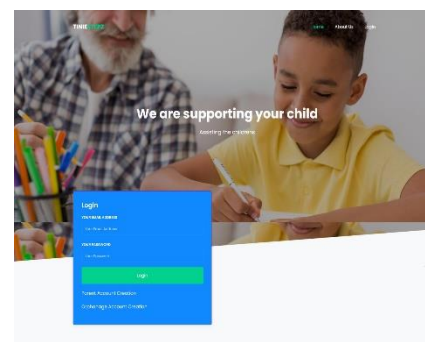


Fig. 7. Login Page

PARENTS / ORPHANAGE HOME DASHBOARD

Easy Learning and Fun Time:

After logging in, parents and caregivers can access the dashboard as shown in Figure 8, which includes an Easy Learning section covering various topics with informative content, including images, descriptions, and Indian Sign Language videos for deaf and mute children like in Figure 9. To access the Fun Time section, parents need to answer security questions as shown in Figure 10. Once authenticated, users can access four modules as seen in Figure 11: Parental Care Articles (year-wise child care articles for kids' development), Rhymes and Stories Modules (Indian Sign Language videos), Informative Videos for Health and Hygiene Tips, and several games to enjoy.

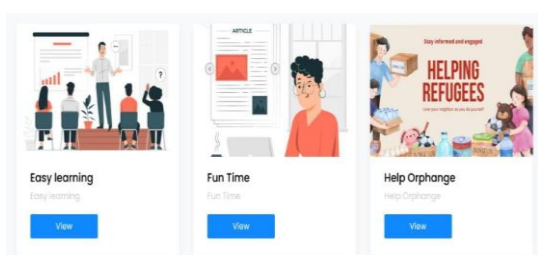


Fig. 8. Parents Home Page

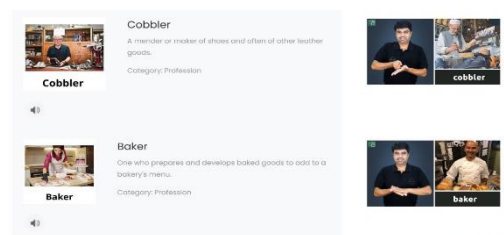


Fig. 9. Easy Learning with ISL Videos

Fig. 10. Security Questions (Parents: Fun Time and Help Orphanage)

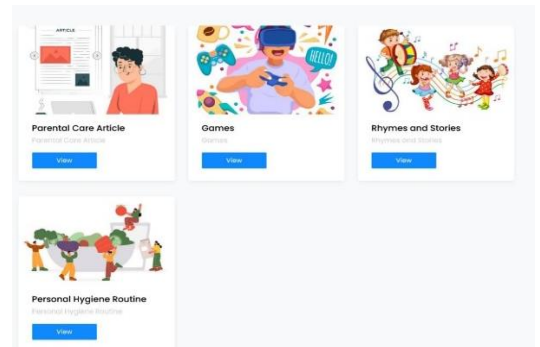


Fig. 11. Fun Time Page

Help Orphanage Home: (Parents)

The parents’ dashboard also includes a Help Orphanage section, where users can view a list of suggested orphanages and make donations to support them as shown in Figure 13. In addition, as seen in Figure 12, parents are provided with a form where they can write down the items or support they are willing to provide to the suggested orphanages listed in the Help Orphanage section. Parents can also view the history of their donations in the dashboard for future reference.

Fig. 12. Item List Form for the Parents Donation

#	Name	Contact	Title	Description	Itemtype	Material	color	Condition	Price	Situation	Date	Location	Points
2	King's Kids Home	9422248235	Toys	Toys Needed	Toys	plastic	null	null	Rs.3000	Non-Emergency	2023-04-14	Coimbatore 501	Support

Fig. 13. List of Orphanages for Donation

Support Orphanage Home: (Orphanage Home)

Orphanage homes are also provided with a form that allows them to request the items or support they need like in Figure 14. The website uses a content-based filtering algorithm to suggest orphanages to users based on the similarity between the orphanages' needs and the items or support the user is willing to provide. In Figure 15, Orphanage homes have the option to accept or reject support from users, and contact details are provided for communication purposes. Caregivers can also view the history of their donations in the dashboard for future reference.

Fig. 14. Request Need Form from Orphanage

#	Donor	Contact	Title	Description	Itemtype	Material	color	Condition	Price	Situation	At	Proceed
1	sam	7456325689	Toys	Toys Needed	Toys	plastic	null	null	Rs.3000	Non-Emergency	2023/04/11	received
2	raji	9989789658	Toys	Toys Needed	Toys	plastic	null	null	Rs.3000	Non-Emergency	2023/03/18	Received/Declined

Fig. 15. Option to Accept / Decline Donation Support

ADMIN DASHBOARD

Parents, Orphanage Home, and Donation:

The Admin Panel dashboard will display the number of donations made, as well as the contact details of parents and caregivers who have registered on the website as shown in Figure 16. The View Donations panel shows all the donations that have been received and declined by the orphanage, including the details of the processing of donations between the orphanage and parents as shown in Figure 17. The View Parents and View Orphanage panels contain details that facilitate communication between the orphanage and parents regarding the process of making donations.

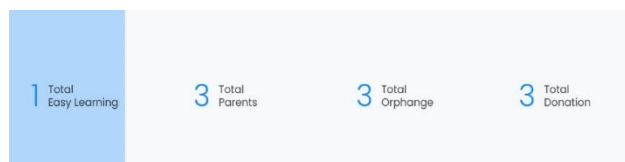


Fig. 16. Admin Dashboard

Donar #	Donor Name	Contact	Orphanage	Orphanage Contact	Item Type	Material	Color	Condition	Price	Situation	Donated Date	Status
1	raji	9989789658family@gmail.com	04222413235	Books	null	null	null	null	Rs.3000	Non-Emergency	2023-04-12	
2	sam	7456325689family@gmail.com	04222413235	Books	null	null	null	null	Rs.3000	Non-Emergency	2023-04-12	
3	sam	7456325689kids@gmail.com	9632589656	Toys	plastic	null	null	null	Rs.3000	Non-Emergency	2023-04-14 received	
4	raji	9989789658kids@gmail.com	9632589656	Toys	plastic	null	null	null	Rs.3000	Non-Emergency	2023-04-15	

Fig. 17. View Donation Panel

Parents, Orphanage Home, and Donation:

Using the Admin Panel, new topics can be easily added to the Easy Learning Category, which covers a wide range of subjects. In the Classes panel, new topics can be added to a specific Easy Learning Category by selecting it and attaching resources such as images, descriptions, and Indian Sign Language videos for the benefit of deaf and dumb children.

The Manage Easy Learning Category form includes a 'Category' input field, an 'Image' field with a 'Browse...' button and 'No file selected.' text, and an 'Add' button. Below the form is a table with columns for '#', 'Category', and 'Created At'. The table contains one entry: #1, Category: Profession, Created At: 2023/04/16. There are 'Add' and 'Delete' buttons next to the entry.

Fig. 18. Manage Easy Learning Category

The Add Easy Learning Classes form includes a 'Title' input field, a 'Choose Category' dropdown menu, a 'Description' text area, an 'Image' field with a 'Browse...' button and 'No file selected.' text, a 'Video' field with a 'Browse...' button and 'No file selected.' text, and an 'Audio' field with a 'Browse...' button and 'No file selected.' text. There is an 'Add Classes' button at the bottom.

Fig. 19. Add Easy Learning Classes

VII. CONCLUSION

In conclusion, the methodology for a child assistance and orphanage donation website is an effective way to create a website that meets the needs of its target audience and supports a worthy cause. By identifying the target audience, determining content categories, implementing collaborative filtering, and providing a donation system, the website can offer a personalized and engaging experience for its users while facilitating charitable giving to orphanages. This approach can help to build a strong community around the website and make a positive impact on the lives of children in need.

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