

Recommendation System for E-learning Website

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Abstract

Recommender System is a tool helping users find content and overcome information overload. It predicts interests of users and makes recommendation according to the interest model of users[1].

This paper introduces content-based recommender system for online streaming website- Movietoons for kids. There are a lot of features of e-learning, like gamification in learning, cartoons series for watching. In addition to this, it will contain a teaching platform which include the study material for different age group of children, they are diversity and unique, which is also the difference from other recommender systems.

We use these features to construct a well organised e-learning platform that includes all features for the kids' requirements be it learning videos, games, cartoons or quizzes. So, kids don't need to navigate to different website for different features, they will get all categories and requirements here on this platform. We introduce a new approach for setting weight of features, which improves the representative of e-learning platforms. Finally, we evaluate the approach to illustrate the improvement.

Keywords: recommender system, content-based, e-learning, similarity, movie, quiz, games, learning, cartoon

1. Introduction

It is well said that the first learning of a child starts from family. The busy life of today's era sometimes neglects this important phase of life. Having a strong foundation leads to overall development of a child.

So, it is our responsibility to provide an environment where a child can learn new things while playing. It should promote child's creativity. As engineering students, we should create a platform which include all the aspect for having strong foundation of a child.

It is my pleasure to introduce you all about the main idea and purpose of our project. The project is about designing a website for the kids. A website which includes all the need of a child like games, cartoons series and studies. A website that allows parents to keep a close monitoring of their child's activities. A platform that helps in overall development of their child. Learning should be considered as fun not burden.

1.1 Background

In the era of information overload, it is very difficult for users to get information that they are really interested in. And for the content provider, it is also very hard for them to make their content stand out from the crowd. That is why many researchers and companies develop Recommender System to solve the contradiction.

The mission of Recommender System is to connect users and information, which in one way helps users to find

information valuable to them and in another way push the information to specific users. This is the win-win situation for both customers and content providers.

This Platforms provides a new way on how consumers are given access to good and suitable content. The mission of Movietoons is to increase needs of its digital user base. Movietoons is the e-learning website, which is a place for Kids to gather knowledge and learn in an innovating and entertaining way. This thesis report will present a more practical recommendation method that can be used on a e-learning website that does not have enough users.

1.2 Problem Statement

For building a recommender system[2] from scratch, we face several different problems. Currently there are a lot of recommender systems based on the user information, so what should we do if the website has not gotten enough users. After that, we will solve the representation of e-learning, which is how a system can understand a e-learning. That is the precondition for comparing similarity between two e-learning. E-learning features such as gamification in learning, quizzes, cartoons and learning videos is a way that can categorize e-learning. But for each feature, there should be different weight for them and each of them plays a different role for recommendation. So, we get these questions:

- How to recommend e-learning when there are no user information.
- What kind of e-learning features can be used for the recommender system.
- How to calculate the similarity between two e-learning platforms.
- Is it possible to set weight for each feature.

1.3 Goals

The goals of this thesis project is to do the research of Recommender Systems[3] and find a suitable way to implement it. There are many kinds of Recommender Systems but not all of them are suitable for one specific problem and situation. Our goal is to find a new way to improve the classification of e-learning, which is the requirement of improving content-based recommender systems.

1.4 Methodology

In order to achieve the goal of the project, the first process is to do enough background study, so the literature study will be conducted. The whole project is based on a big amount of e-learning data that includes 4 categories of games, learning, quiz and cartoons so that we choose quantitative research method.

For philosophical assumption, positivism is selected because the project is experimental and testing character. The research approach is deductive approach as the improvement of our research will be tested by deducing and testing a theory. Ex post facto research is our research strategy, the e-learning data is already collected and we don't change the independent variables. We use experiments to collect e-learning data. Computational mathematics is used data analysis because the result is based on improvement of algorithm. For the quality assurance, we have a detail explanation of algorithm to ensure test validity. The similar results will be generated when we run the same data multiple times, which is for reliability. We ensure the same data leading to same result by different researchers[4].

1.5 Ethics

E-learning information is the only part that may have ethics problem. However, all the information we get for research is from public database such as Wikipedia and our own e-learning database. And if we are rendering content from some other platform so in that case, we have added courtesy attribute for giving credit to the platform and channel from where we are rendering content. So, there are no data confidentiality and user privacy problems.

2. Literature Survey

The idea for designing this website comes while observing the e-learning platforms in the market[5].

As there is no specific platform that includes all these features. So, the idea is developing a website that includes everything for kids.

The concept of designing a website comes while observing the e-learning platform in the markets. But the problem is that there is no specific platform that include all the features.

So, the idea was developing a website that include everything. A website that improve thinking ability of a child. So, it is well said that when you have impulse

knowledge, skills and resources then why not use them in taking out best from the situations.

3. Proposed System

3.1. Activity Diagram

The activity diagram of our proposed system is shown in the Figure 1.

3.1.1. For User

User can navigate through different sections like cartoons, quiz, games and learning. They can also navigate through sub-sections of each of the categories.

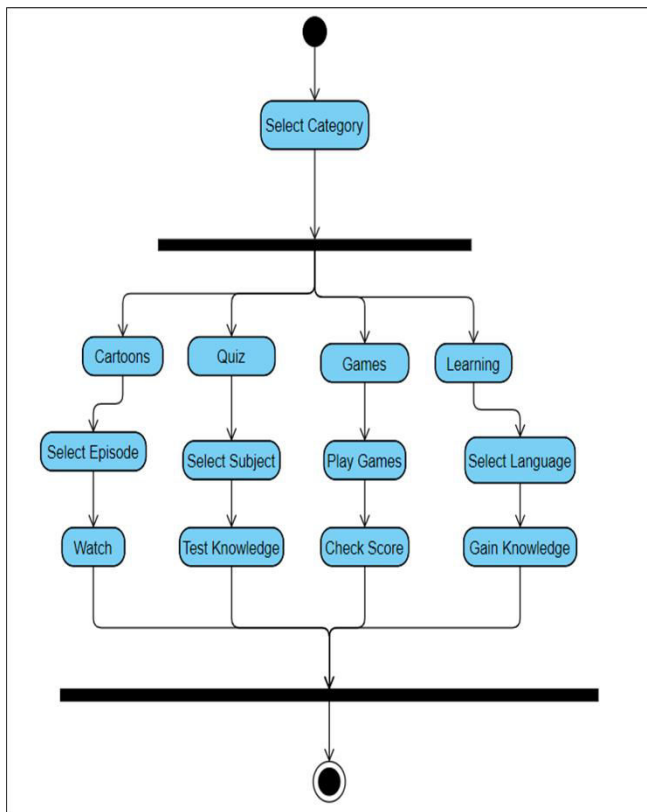


Figure 1. Activity Diagram for the system.

3.2. Sequence Diagram

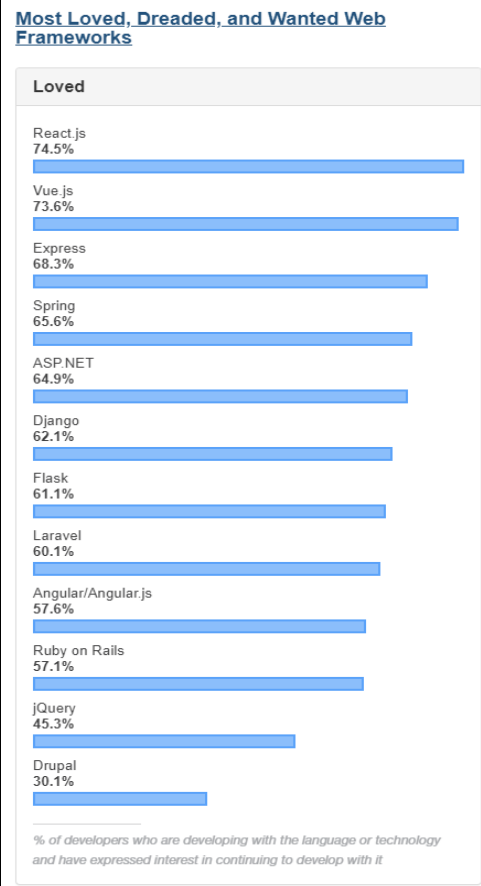
The figure describe the sequence diagram of our website, Movietoons, which shows the interaction between



the objects of different categories like learning, games, quiz and cartoons. Here kids can easily navigate to each category according to their requirement. Also, in games and quiz categories user can see their score of their performances.

The instance of class objects involve in this Sequence diagram are:

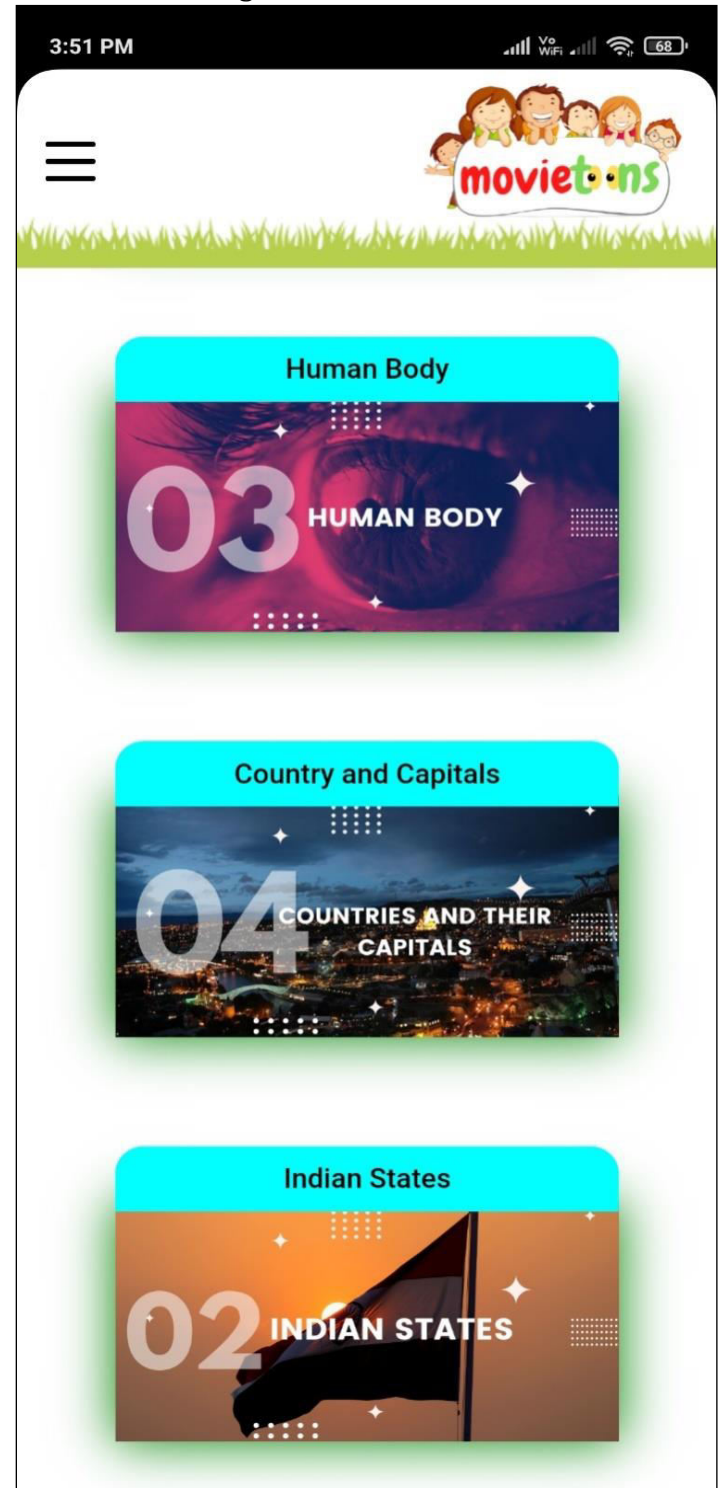
1. Learning Object
2. Games Item Object
3. Quiz Object
4. Cartoons Object

4. Comparison Of Angular / ReactJs



 <p>Implementation</p> <p>AngularJS is a framework that provides a large number of native options and features.</p>	 <p>Implementation</p> <p>ReactJS is an open source JavaScript library.</p>
<p>Data Binding</p> <p>AngularJS uses a two-way data binding</p>	<p>Data Binding</p> <p>ReactJS supports one-way binding</p>
<p>Architecture</p> <p>AngularJS is based on the MVVM (Model-View-View-Model)</p>	<p>Architecture</p> <p>React only covers the MVC (Model-view-Control)</p>
<p>Performance</p> <p>Angular's MVVM offers the advantage to reduce the loading speed of the web pages considerably</p>	<p>Performance</p> <p>ReactJS creates its own virtual DOM where components are attached</p>
<p>Dependency Injection</p> <p>AngularJS automatically finds the appropriate injected objects with parameters</p>	<p>Dependency Injection</p> <p>The built-in container for dependency injection with React is missing</p>
<p>Directives And Templates</p> <p>AngularJS has its directives to work on DOM</p>	<p>Directives And Templates</p> <p>React does not offer any division into templates and directives or template logic</p>

5. E-learning Platform- Movietoons



- E-learning along with Cartoon Stories are interesting ways to teach your kids about good

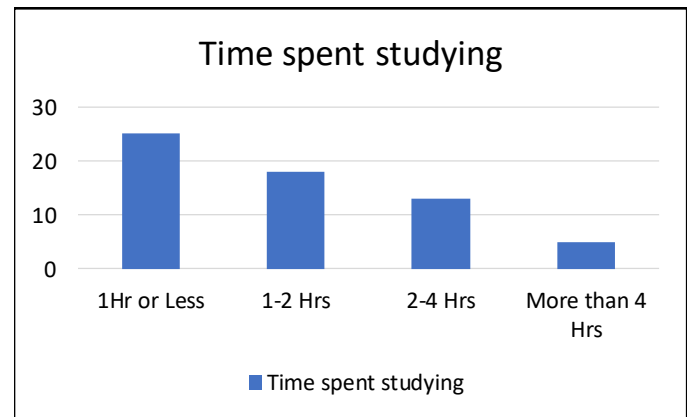
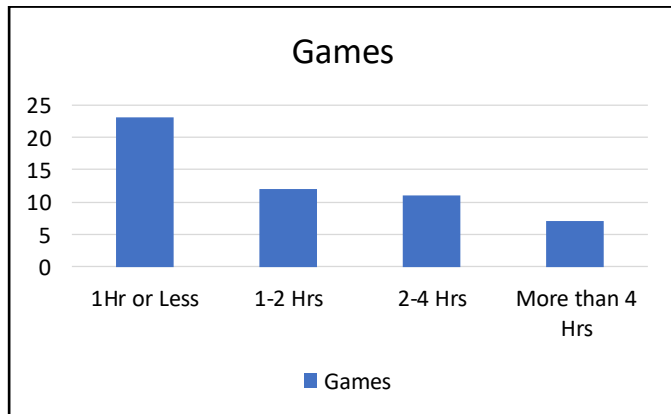
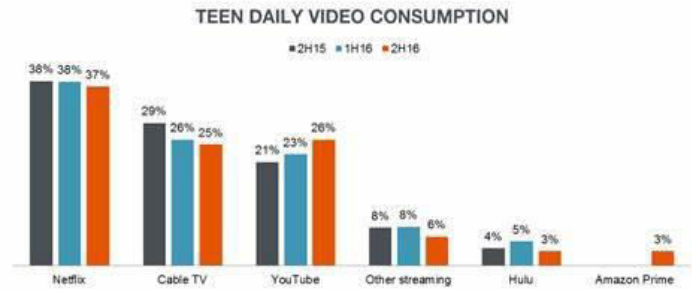
morals & right conduct all through their life[6]. Kids needs to be educated with good values to make them an ideal individual for both society and family.

- Quizzes[7] help in concentration, identify gaps in knowledge, build confidence and help children retain information - they're fun!
- Gamification in eLearning is so beneficial for learners. It creates a sense of excitement within the learners and this excitement leads to a boost in motivation and makes the experience more powerful and memorable.

6.Available Dataset

For the e-learning recommendation system comprises of learning, cartoons, quiz and games, the dataset that is using in the recommendation system majorly are given below in the table. Apart from that, most of the experiments are carried on public and standard datasets[8]. So the goal is to combine all the features of these platform into one and make a platform that covers everything and make e-learning fun and entertaining.

Name	Domain	User	Rating
Byjus	Learning	40M	4.9
Disney Plus	Cartoons	103.6M	3.4
Quizizz	Quiz	10M	4.9
ABCmouse	Learning Game	1M	3



7. Conclusion

We have created a website where all the features are combined into one platform so as to make e-learning more easy and entertaining. Here along with learning videos and poems there will be quizzes based on general awareness and for entertainment purpose we have games and cartoons on the same platform where kids can easily navigate to each category as per there requirements.

The technologies which we have used here is React and for content delivery we have used contentful API. The newer version of HTML and CSS that is HTML5 and CSS3 respectively. We have tried to inculcate the use of adaptive technology to give out the most relishing learning experience that will benefit to young minds of the nation

9. References

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