AdBarn: Unique Way of Earning Money through Advertisements

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ABSTRACT

Everyone wants to buy the product which best suits their needs. With many new products being launched every day, it gets tough for the users to keep track of all of them. There are a few websites from where the people can buy few products but there may not be a portal where people can get to know about various products by watching the advertisements set up by the enterprise and get rewarded just for watching it. The aim of this project is to create a portal where people can watch the advertisements for the products and get rewarded for investing their time in watching those advertisements. This paper discusses the basic idea, the basic features that were implemented as part of the project and the scope of the project that can be extended.

1. INTRODUCTION

Who does not want to buy the best product at the best cost? Nowadays, everyone buys the products online and e-shopping is very common that people rarely go the store to buy what they need. Won't it be easy if there is a way to get to know about the various products that are available in the market and choose the best one? And, what if there is a portal where all the entrepreneurs advertise their products and provide a link to buy the product online and give some rewards for just watching their advertisements? What if there is a way to get to know about various products by watching the advertisements from a portal and get rewarded for the time the user invests in watching the advertisements?

Everyone would like to spend their time in watching advertisements only when they would like to buy some products and not when they are working on something. Currently, the users are forced to watch advertisements when they are watching some videos or playing games and most of the people find it annoying. But, if there is a portal for watching the advertisements and decide on what to buy, the users can visit the portal at their convenience and can search for the products of their interest. If implemented on a large scale, this idea can change the way the advertisements system works and can help both the people and the enterprises. People can view the advertisements at their convenience, read comments and views on the products and decide on what to buy. Moreover, they also get paid for it. On the other hand, the enterprises can advertise their product for a cheaper cost and maximize their productivity.

We introduce AdBarn, an online portal where various enterprises can compile the advertisements of their various products and allow the users to search and browse through the different advertisements. The users get rewarded for investing their time in watching those advertisements and will be provided with some offers if the user decides to buy from the link provided by the entrepreneur. This portal will provide the user with various search options where the user can search the type of products the user wants to explore.

2. LITERATURE REVIEW

2.1 Video streaming

Due to the explosive growth of the Internet and increasing demand for multimedia information on the web, streaming video over the Internet has received tremendous attention from academia and industry. The two modes for transmission of video over the Internet are the download mode and the streaming mode[8]. In the download mode, a user downloads the entire video file and then plays back the video. However, full file transfer in the download mode usually suffers long and perhaps unacceptable transfer time. In contrast, in the streaming mode, the video content need not be downloaded in full but is being played out while parts of the content are being received and decoded[9]. Streaming is the only sensible alternative when the data is retrieved from a network and consists of sequential information stored in huge files, as is the case of videos.

2.2 Commercials

Interest-based Behavioral Targeted advertising has risen to prominence as a method to increase the effectiveness of online advertising. Videos are expected to constitute more than 85 % of the traffic on the consumer Internet within the next few years. Video providers bear the costs of acquiring and delivering the videos to their audience. The question is how to measure the effectiveness of a video advertisement in various scenarios[1]. Advertisements convey a message to

the viewer and the key metric for ad effectiveness that is widely used in the media industry is ad completion rates. Advertisement completion rate is the percentage of ads that the viewer watched completely without abandoning in the video abruptly in between. Completion rates are perhaps the most tracked metric in an ad campaign since a viewer watching an advertisement to completion is more likely to be influenced by it. A related metric is advertisement abandonment rate that measures what fraction of viewers watched what fraction of the advertisement. The goal of any advertising campaign is to maximize video completion rates and minimize abandonment rates and to attract as many users as possible to increase their viewership and expand their brand value throughout the globe.

3. SOFTWARE ENGINEERING

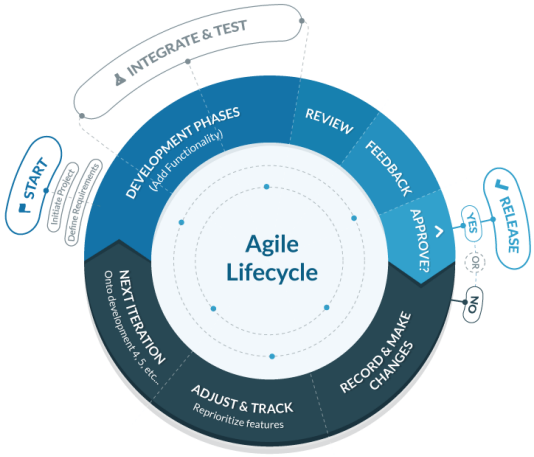


Figure 1: Agile Methodology

3.1 Software Engineering Methodology

We followed Agile Methodology in developing our project since the project was supposed to be delivered within a stipulated timeline. One person among us(rotational basis) acted as a nominal end user of the client and we gathered requirements from the nominal client. Once the requirements are gathered, we split them into functional non-functional requirements. As there was a strict bound on project timeline we only picked up very few important requirements and converted them into user stories.

Few successful **user stories** are, 1. As a user, I can login into the application so that I can browse through my dashboard 2. As an enterprise, I can log in and upload advertisements of my choice with description. As an enterprise, I can view stats on a visual model.

We even added few **technical stories** in line with user stories. Few of successful stories being 1. As a NodeJS developer, I should receive rest API calls for every user request made from front end 2. As an AngularJS developer, I should receive corresponding data to the rest API calls made in a correctly formatted response, so that I can render them correctly.

There are weekly deliverables of the project, we clearly distributed the user stories among ourselves in line with the roles assigned.

3.2 Problems

Better, Faster, Cheaper: Most of the software projects face this kind of problems, no exception is our project. Given the time bound and cost limits, we opted faster and cheaper among the three. When we chose this model, we are prepared for more defects. We tried to deliver the majority of the features and the results were in line with our assumptions. Choosing these both, we were forced to do more fixes than expected. The same is reflected in our pull requests.

3.3 Strategies

We chose **Don't estimate method** as we have very less time. Instead of spending time on effort estimation for the project we thought, investing more time in development and fixes.

Does this mean we haven't made any estimations?

No, we do really estimate but with many small bangs. Better user stories and intuitive deliverables made it easy in developing this project.

3.4 Code Review

Given the rotational change of roles for each of team members, we were able to come up with code reviews throughout the project. As a result, the code became more efficient and minimal when a pair programmer pointed out the issue, alternative methods. When a nominal user points out the expectations of a normal user and when the technological expert speaks about the limitation . The commits made to the master branch were authorized by other team persons which resulted in minimal issues in the master branch.

3.5 Testing

The user stories were tested at the end of each user story by the nominal user. The pair programmers **regression tested** the code regularly after each major update. Availability of end user at end of each **sprint**, **pair programming** of the developers working on related features and **code review** of code before each commit to master branch helped us to overcome many issues faced by our don't estimate approach Which in turn minimized the total testing need to be done. During development, each developed ensured that the individual modules worked as intended. Apart form this manual testing is also done at before each sprint.

4. PREVIOUS WORK

Online video is the killer application of the Internet. A recent study has shown that more than half of the consumer traffic on the internet today is related to videos and is expected to increase to 85% in the near future. As a result of all forms of traditional media like News, Sports, Movies etc. have moved to the internet. This resulted in many companies to switch their advertisement base from traditional television to internet. This explains the growth in online video advertisement spending[3]. Due to this enormous spending on the online video advertisements, many ad streaming applications have come into the picture. These applications

also reward their users with an exciting offer for viewing advertisements on their portal. Swagbugs, Inbox Dollars, Viggle etc. are among few online ad streaming portals which stream advertisements and reward users with some coins for watching those advertisements. In these online ad streaming portals when a user views an advertisement the user will be rewarded some coins based on the coins allocated to that particular advertisement. Each user has to accumulate coins to buys any product within their portal. These coins cannot be redeemed to any bank account, they have to be used within the portal itself. Also, these online ad streaming portals are not totally dedicated to ad streaming they provide various products with buy option.

5. FEATURES

This video portal provides the users with various features. To start with, For any web application, a sign-up page and a login page are required. For this application we have two stakeholders, one being users and others being enterprise. Both have different login and sign-up pages. Password validation is done for every registration and the minimum length of the password is 8 characters and an extra validation is done to check if the password and confirm passwords match. After registration is completed, the user is redirected to a different page where the user will have options to search and view the videos and the enterprises will be redirected to another page where they will have an option to add the money and upload the advertisements. No two users or enterprises can have the same username and a conflict message is shown if someone tries to register with the existing username. Below is the snapshot of the registration/login page of the application.

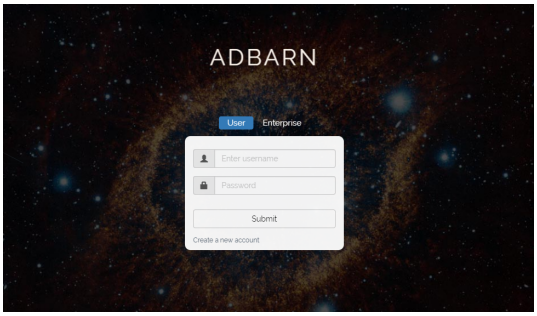


Figure 2: Login Page

Once the user registers, the user is redirected to the user page. The user can select a video from various videos and once the video is completed, the user gets the coins for the amount of time watched by the user. The user should watch the complete video to get the coins. Few changes like disabling the seeking video, disabling the fast forward option were made to the video player so that the user can watch the complete video and the enterprise can be sure that the users watch their video completely and their product is being advertised properly. One more functionality given to the users is the tag-based search functionality. The users can select the tags they are interested in and view the videos they are interested in. The users can always update profile information. The users can always view their earned coins and they are also provided with an option to redeem the coins they have earned so far.

One more feature is the comment section for each video. The users can comment on every video they watch and can also watch the comments given by other users. This will help users to avoid useless videos. A log out option is provided for the users to close their session and logout successfully. Once the logout is successful, the user is redirected to the home page where the user can login again or register with a new username. Below is the snapshot of how the user page looks.

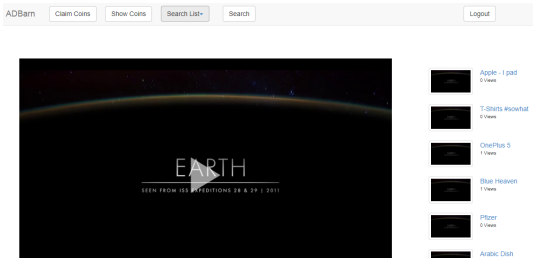


Figure 3: User home Page

The other stakeholder being the enterprises too have few features. Once the enterprise logs in, the enterprise is redirected to the enterprise page. This page has options like add coins which means the enterprise needs to invest for their videos to be displayed. Next option for the enterprise is to update the coins per hour. This based on the concept of virtual wallet. The enterprises are charged based on the amount of time their video was viewed. Moreover, the videos are sorted based on the coins per hour and the enterprises which pay more for certain amount time will be given preference over other enterprises. One more validation done for the enterprise is that the enterprise will not be allowed to upload the videos if their number of coins is less than the coins per hour. Moreover, when the users watch the videos and at some point of time if a particular enterprise's wallet doesn't have enough balance, it's advertisements will neither be available to the users on log in nor during the search. Below is the snapshot of the enterprise page.

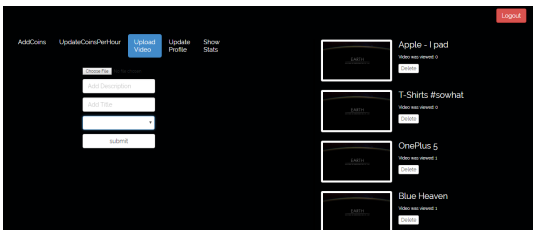


Figure 4: Enterprise home Page

One other feature of the enterprise is the analysis of their videos. There is an option called show stats when selected, charts are displayed and the chart displays which videos were viewed the most number of times and which videos are not viewed at all. The enterprise can get an idea of how well the

users are watching their videos and can decide if this portal is really useful and make a decision on how much to invest in their other videos. After seeing the stats, the enterprise can also delete the video if any particular advertisement is not viewed by the users. There is a delete option provided on every video the enterprise uploaded. Below is the sample graph for an enterprise.

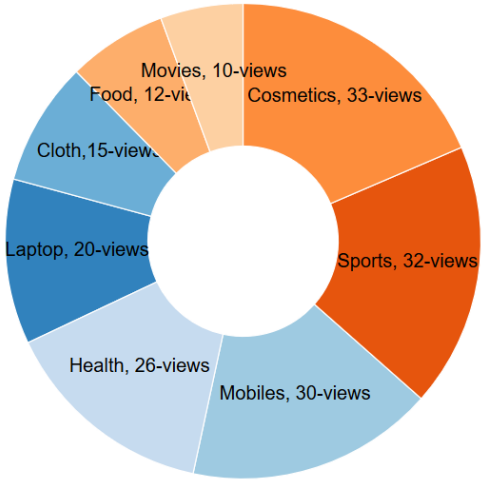


Figure 5: Category wise stats for the enterprises

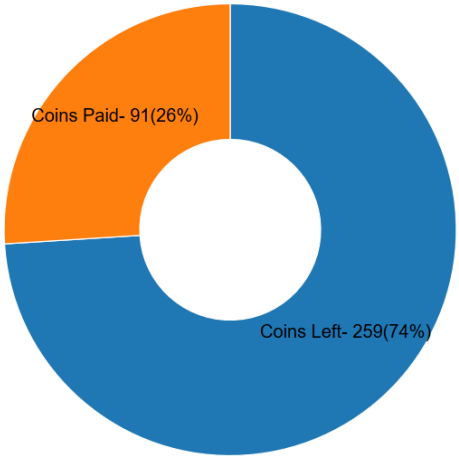


Figure 6: Enterprise stats for his/her coins

6. EVALUATION CRITERIA

Evaluation is very important for any application. A beta version of the application was given to different people to test the application and find out issues related to various features. There are a few ways to test our application. First, are the people willing to use the application. Are the people willing to use as both the user and the enterprise? Both the stakeholders are equally important for the applications feasibility. To test this application the target users would be web surfers with a good experience in watching videos online which have advertisements. So, the survey was given to the students of Software Engineering and other students from NCSU. Most of them responded positively. Based on this response, the application was developed and was given for beta testing to the students of the software engineering 2018 class in the form of the survey and with the link of the application where it was deployed so that the participants can test the application and fill the survey.

The survey was a mixture of the feature testing questions and questions based on the feasibility of the application. The basic test for the application was to check if the users and enterprises are able to register themselves on the registration page and are able to log in successfully. Once logged in, they are navigated to the appropriate pages.

The next question was to check if the search results were consistent and relevant. As for any video portal, search functionality is the most important feature for the users to search and view the videos based on their choice, this question was included in the survey. The goal of this question was to check if the search results were fast, relevant and consistent. The next important question was to check whether the video played successfully without any problems or were there any problems with the video buffering or loading. As the whole application is based on the videos, this is the most important feature in the whole application. This question was posted to check if the video is properly stored and retrieved from the database and at what speed is the video loading. Is the video buffering too much, then the storage or the servers had to change to support the video buffering.

Load management is one of the major concerns for any application. In situations when many users will use the application at once, there is a chance for the server to go down. It is the sole responsibility of the developer to maintain the server every time. To test this, the server was deployed on Heroku and multiple users logged in at once and checked if they are able to load the video and watch the video without any delay. The server was able to support multiple requests at once and the load management was done properly by the server.

One more question was to check if the users are able to redeem the coins for the amount of time they have viewed the videos. This was to check the concurrency of the applications when multiple users are watching the videos. Users watch the advertisements to learn more about the product and also with a hope to get some rewards. There should not be a situation where the users are not able to redeem their coins for the time they have watched the videos.

Apart from these questions, few general questions were asked to test the scope and feasibility of the application. One of them was, if the virtual coins were real money, will the users use the application? This question was aimed to get to know how much the users are interested to use the product after using the beta version of the product. Another question was to check how satisfied the participants were with the product. This question was aimed to get to know how the overall product looks like, how impressive are the features and well is the design. A list of checkboxes with each possible issue having a checkbox was put in the survey. As this was beta testing, this question was very important to rectify any mis-

takes and make the application better. While developing the applications, there is always a chance to get bugs. The aim of this question was to find bugs and remove them before the final release. Finally, there was a suggestion box for the participants to suggest few changes to improve the applications and take it to the next level. To attract any user or enterprise, the UI of the application is very important. One of the questions was to know the applications UI and any suggestion where to improve the UI.

Majority of the participants in the user evaluation are software engineering students in Spring Semester 2018. Since most of them are aware of how the videos load and buffer in a website and have a decent idea about concurrency and virtual money transfer the evaluation will definitely be reliable and we can consider the results gathered from the participants as valid. Few additional participants include other computer science graduate students at NCSU and few other people from the non-technical background but with a basic understanding of how the web services work. So, the application was tested by a various range of participants to get reliable results.

Few of the metrics to evaluate the project are

Scalability	+	Multiple users can access the application at once.
Availability	++	The application will be deployed to multiple servers and will always be available with very low to zero downtime.
Modularity	++	The application will be developed phase by phase and every functionality will be placed in a different component or module.
Security	+	The application is secure as password will hashed in the server.
Adaptability	++	The project will be adaptable as we are writing the business logic on server side and we just make the api calls from the front-end.

7. EVALUATION RESULTS

Please answer the below questions from a User's Perspective

Question 1. Were the video hyperlinks working properly? In other words, does the video change and load properly when you switch videos?

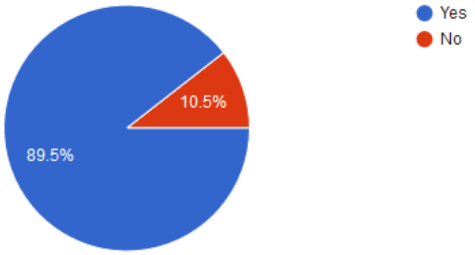


Figure 7: User Question 1

The aim of this question is to test if the video loads and buffers properly when the user decides to switch the video from the list of video suggestions. Most of the people who took the survey responded positively and were able to see the new video on video switch. There were one or two discrepancies reported and the discrepancy reported was that the title of the video was not getting. These results were helpful in fixing that issue and making the application better.

Question 2. Did you find any inconsistency while redeeming coins?

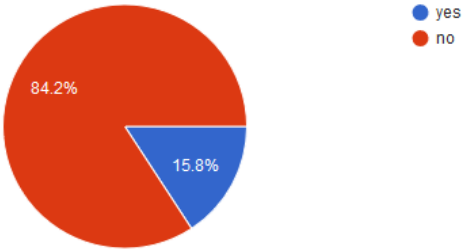


Figure 8: User Question 2

This question was aimed to check if the users are able to redeem the coins for the time they have watched the advertisements. Most of the users were able to redeem the coins for the time they have watched the videos. There were 2-3 responses where the users were not able to redeem the coins. This bug was handled and the concurrency was maintained so that all the users get the coins for the time they have viewed the videos.

Question 3. Are the search results consistent?

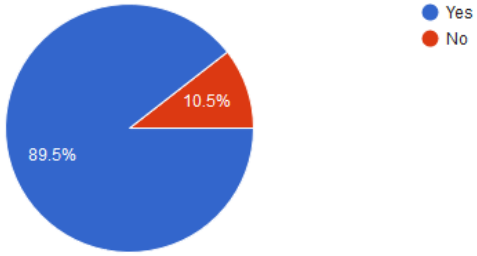


Figure 9: User Question 3

Search is the most important feature for every user, the consistency of the search results was tested and most of the users got the results they were expecting. A small bug was identified and was resolved.For all the videos uploaded by the enterprise that did not have any search tags associated with it, those videos were inconsistent. This result was very helpful in removing one of the most important bugs of the application.

Question 4. Were you able to comment on the videos properly? in other words video should reflects comments?

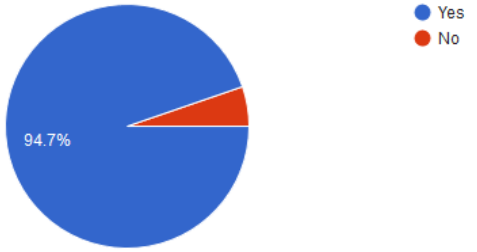


Figure 10: User Question 4

This question was aimed to check if the users are able to comment on the video and if the users are able to see the comments of the other users of that particular video. Most of the people responded positively and they were able to comment on a particular video. **Question 5. Were the video player controls intuitive?**

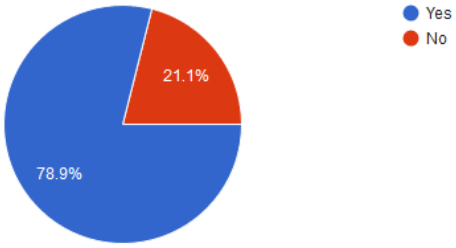


Figure 11: User Question 5

could you please mention the issue with the video player controls, such as disabling video forward or play/pause or sound or resize?

Most of the people found the video player controls intuitive. Few people found few problems with the video player controls. One of the problems found was when the video player is expanded, the relative position of the controls like start time, end time and volume control are displaced horizontally.

Question 6. Did you find any issues while viewing the advertisements?

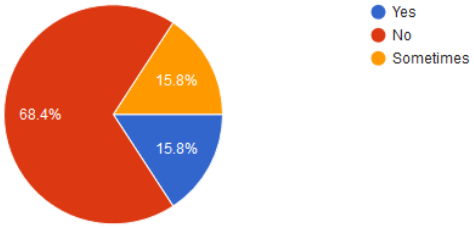


Figure 12: User Question 6

This question was aimed to find if there are any issues while watching the advertisements. Most of the people found no issues and few people found the issues sometimes and few of them found an issue. After checking the results, few fixes were done on the feature.

Question 7. At the place of redeem coins, if actual money were to be transferred to bank account. How strongly do you agree to use this portal?

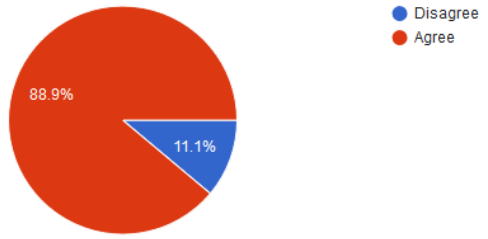
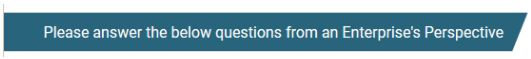


Figure 13: User Question 7

This question was aimed to find if the users are really interested in the product if the virtual money was real money. Most of the users were willing to use the product if the virtual money was real.



Question 1. Please mark any issues you found in the whole session

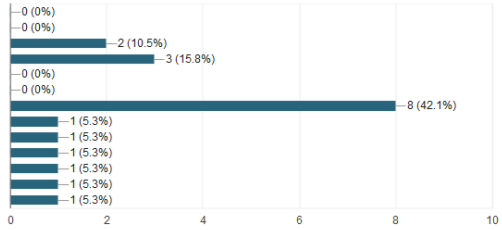


Figure 14: Enterprise Question 1

This question was aimed to find if there is an issue with any module. Most of them had no issues and few of the users had few issues. The issues mentioned are login/ signup issue, add coin issue, update coins issue, upload videos issue, update profile issue, delete videos issue.

Question 2. Is the video display stats intuitive?

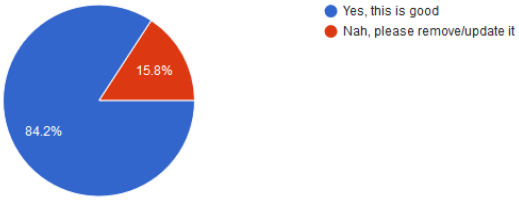


Figure 15: Enterprise Question 2

This question was aimed to find if the video display stats were intuitive. Most of the people found these stats interesting whereas very few people found it unnecessary.

Question 3. Overall, how satisfied are you with the application?

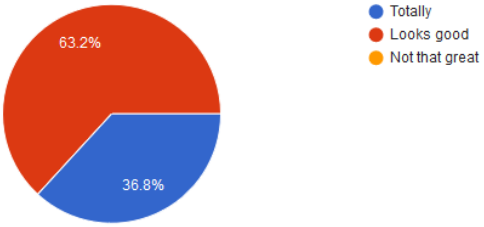


Figure 16: Enterprise Question 3

This question was aimed to find if the users were satisfied with the application. Most of the users were satisfied with the application and few of them were totally happy with the project and the idea. **Question 4. On viewing the overall portal, given necessary audience. How well do you feel this is a better choice to publish your ads?**

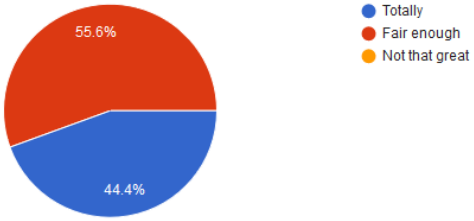


Figure 17: Enterprise Question 4

This question was aimed to find if the enterprises were satisfied with the application. Most of the users were satisfied with the overall portal. and few of them were totally happy with the project and the idea.

7.1 Suggestions

There were few suggestions given by the people who took the survey. Even though tag based search was flawless, search based on data mining methods was suggested by few people. Few of them suggested to improve the UI and improve the look of the application. Few others liked the idea of displaying the statistics on the enterprise page. They wanted to extend this feature to user page so that the users can view different statistics on various advertisements.

7.2 Best Feature

As observed in the previous sections, gaining monetary benefits while watching advertisements is the primary feature of this portal and it goes in as a non-functional feature. Coming to the functional features, the search is the best feature of this portal which allows the users to filter and view advertisements based on their interest. Currently, the search

is limited only on the basis of tags. While uploading the advertisements to the database, the enterprises can optionally choose a tag so that their advertisements can feature in the appropriate searches for the targeted users. Even though, the search feature is pretty common in some of the websites today, none of them are directly related to advertisements.

The search feature, especially, has a very wide scope for future development. A text-based search can be implemented to allow the users to search for specific products. Various data mining techniques can be incorporated to improve and personalize the search results.

8. TECHNOLOGY STACK

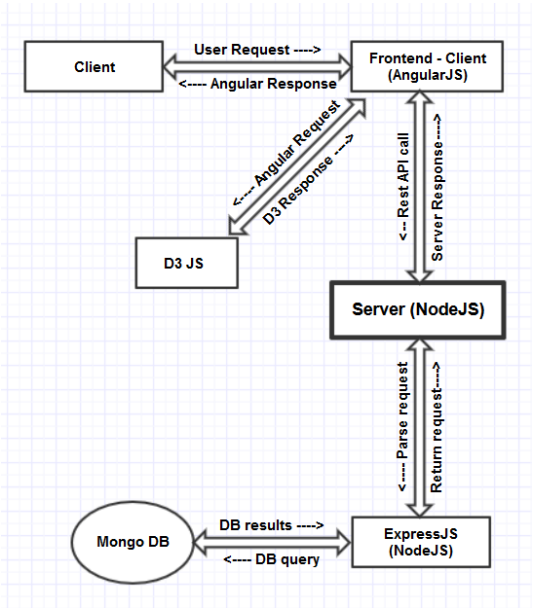


Figure 18: Mean Stack working

The project was implemented using the MEAN Stack. The front-end was developed using AngularJs and the backend was be developed in NodeJs. Webpack was used to bundle the frontend files. The middleware in the server was implemented using ExpressJs to handle the API calls. MongoDB was used to store the user data, enterprise data, and the videos. The server was deployed in Heroku so that the service is always up. Below are the detailed explanations for using the selected technical stack.

8.1 AngularJS

AngularJS was used for the frontend. AngularJS is a javascript-based open source frontend web application framework to develop single page web applications. AngularJS, unlike its rivals, analyses the page DOM and builds the bindings based on the angular specific element attributes which make sure that the code is easier to understand and less error-prone. The backend for this project is written in Node.Js which is also written in javascript. This was one more reason to select AngularJs.

8.2 Node.js

The backend for this application was implemented in Node.js. Node.js is an open source, cross-platform Javascript runtime environment for executing JavaScript code server-side. The main reason for choosing node.js for the backend is its performance based on the architectures of many internet applications. It uses an asynchronous event-driven model and is designed for writable scalable internet web applications, notably web servers. Moreover, one more reason to choose Node.JS is that it can help them write applications both in server-side and browser-side and it becomes much easier to hold on with JavaScript for both sides of the client and server. Moreover, there are few libraries in Node.Js to upload the media efficiently to the server and when multiple users hit the server at once, load management is done efficiently in node.js due to the event loop feature.

8.3 ExpressJS

The middleware was implemented using ExpressJS. ExpressJS is a prebuilt NodeJS framework that can help you in creating server-side applications faster and smarter. Simplicity, minimalism, flexibility, scalability are some of its characteristics and since it is made in NodeJS itself, it inherits its performance as well.

8.4 MongoDB

MongoDB was used as the database to store all the data, including videos, enterprise data, and the user data. MongoDB is an open source, document-oriented database designed with both scalability and developer agility in mind. MongoDB stores the data in JSON-like documents instead of storing everything in tables. It's performance, ease of use and scalability makes it the best option for a database. MongoDB is a NoSQL and is preferred over MYSQL and relational databases for its fast retrieval of data. One major advantage with MongoDB is that any data type like structured, semi-structured and polymorphic data can be stored in the database as the data is stored in the form of JSON. The problem to store the videos of various sizes and various types is solved by MongoDB as it stores them in chunks of data and retrieves it chunk by chunk very efficiently. It is not advisable to store the media files in MYSQL. This was the major reason for choosing MongoDB as the database. To connect the database with the backend, we have used the Mongoose API. Mongoose is an ORM for MongoDB, written in node.js. Mongoose provides a straight-forward, schema-based solution to model the application data. Its ease of use, built-in typecasting, validation, query building, business logic hooks has made us choose this API to connect our backend to the database.

8.5 D3.js

D3.js is a library which is used to produce interactive data visualizations. This allows the enterprises to check which of their uploaded videos were viewed how many number of times at a given point of time. In contrast to other libraries, D3.js allows great control over the final visual result which is why this library is preferred over other libraries. Moreover,

input to D3.js can be given in the form of JSON which makes it easy to use over other libraries.

8.6 WEBPACK

Webpack was used to bundle and build the javascript files. With many tools and libraries present to bundle the javascript files like Gulp, grunt, and RollupJs, Webpack was chosen as it is a powerful tool and it can perform the majority of the tasks more efficiently than a task-runner like gulp or grunt can perform. One more advantage with webpack is that it can also run as a middleware through servers like web pack-dev-server which supports both hot reloading and live reloading which many other task runners do not provide. It supports transpilation of javaScript code from ES6 to ES5 and we can also add CSS pre-processors and post-processors.

8.7 Heroku

For the application to run continuously, the server should be up all the time and one way for the server to run continuously is to host the server in the cloud. Heroku is one way to make sure that the server is always up. One advantage with Heroku is that it is not necessary to install any software and do not need to maintain or monitor it for any software updates. It is an easy way to host the web applications online. Moreover, few extra features like enhancing the database, adding Redis cache can do with a click or via the command line.

9. WHY ADBARN

There are few questions about the uniqueness of this project. Let's go through them.

How different is this portal from the e-commerce websites?

- Albarn's main focus is to gather all the advertisements provided by various enterprises and display them to the users as per their interests.
- AdBarn's scope is not just confined to the products available on e-commerce websites but it also includes products available on various other places like Android play store, Apple Store, and Windows store, etc.

How different is this website to a normal video streaming website?

- We are confined only to commercials
- Unlike other video streaming websites, we charge the enterprises for uploading videos and the users get rewards for watching the videos.
- Video viewers benefit by having all commercials in a single portal.

Everything seems cool, why would a user use this platform?

- The key motivation for the user is getting rewarded for viewing the advertisements instead of some third party getting rewarded for serving the advertisements.
- Also, ads will no more be annoying. You get to choose what to watch (based on preferences and search query).

Do you think you can attract enough members?

- We can not build the perfect platform in a single go. Given everything works out well, we are confident on our idea. If we are good enough to develop this to a standard portal, rest follows.
- With a good planning and good userspace, we can develop this portal step by step by implementing all the additional features as mentioned in future scope. [**?**]

10. FUTURE SCOPE

One of the most important features of any video portal is the search functionality. As of now, the application only supports tag-based search and returns the videos based on the tags selected by the user. Adding various machine learning algorithms to search functionality would give better results to the user when the user searches for a kind of video. Currently, there is an option for the enterprises to see the stats on which videos were viewed how many times and the charts are displayed accordingly. This data can be used to analyze which products were viewed the most and which product is most popular in among its competitor products. Data mining and statistics can be applied to get this data and this data would be very valuable to the enterprises.

Web scraping would one of the major features to add in the future. Once the user selects a video and views the video completely, the user should be able to get the links to buy the product from top e-commerce websites like Amazon, eBay, and flipkart. By using web-scraping or by using some affiliate marketing APIs provided by the websites, the link to buy the product featured in the advertisement can be added.

One other improvement would be adding the chat box to the application. If the user finds the product useful and wants to inquire more about the product, a chat box can be very helpful and can let the user decide if the product is useful to the user.

11. CONCLUSION

It is clear from the survey that most users are willing to view the advertisements and most entrepreneurs are willing to post their advertisements on the AdBarn portal. This portal provides an option for the user to search the desired product, view the desired product and various other products displayed in the search results and decide which product to buy. Moreover, the users will also get paid for watching the videos which should also be one of the motivations for the users to watch the videos. On the other hand, the enterprises can upload their advertisements into the portal at a cheaper rate when compared to paying a large sum of amount to display their advertisements to other websites. This will he can log-in to AdBarn, search for advertisements related to the desired product, view the advertisements, can go to the link provided to buy the product and in turn user will also earn points for viewing those advertisements. All the entrepreneurs will also get benefited as they will have a single common platform to display their advertisements where a lot of users are willing to view them. We managed to collect some useful information, on which we will be working for the upcoming month.

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Chits:

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