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CMPE 202 - TEAM PROJECT - WEEK #4

TEAM 8:
ILLUSION

Project Group #8

Team Illusion

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Team's GitHub Repository:

https://github.com/cmpe202-team8/courseproject

Team's Task Board:

https://waffle.io/cmpe202-team8/courseproject

Team's Kanban CFD Google Sheet:

https://docs.google.com/spreadsheets/d/11yxg2k4eyZdq_qlcoXQQghDujDM73ENaFXhOg5Yt dbl/edit#gid=991511345

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Journal Update from Team Members

1. Ashna Sebastian

Core Value: Communication

Communication is a life skill which helps us to connect with our team mates. It plays a vital role in building respect and trust among team members. It creates a platform to resolve the difference I our opinions or for clearing our doubts or even for sharing knowledge. As mentioned in my previous journals, we agreed to have two meetings every week. This week also we successfully conducted two team meetings. The first meeting was held on 5th October and was an online meeting. Technologies like hangouts, slack, etc are helping us in effective communication. The next meeting was held on 8th October after the class.

We have already decided that we will be developing a game for teaching binary conversions. We have also decided the technologies to be used. As mentioned in my previous journal, we are planning to use MEAN stack. Mongo DB for backend, Angular Js for frontend and Node js with express framework as the server side. The database and server side work will be done by Neha, Rakesh and Vimal. The frontend side will be done by me and Vaish. For any game it is very important to have a good frontend so that play would want to play it. In the frontend side, there are two main aspects. One is designing a page for providing training on binary conversion and then the actual game which includes challenge difficult selection, the questions, score board etc. We have already designed a wireframe on how the pages should look like. This week I was researching on how we can implement the flip animation for selecting 0 or 1 in a position by clicking a card. I have written a simple html page with a css which can flip an image on click. For the game we ca use a similar stylesheet. Vaish has already uploaded a sample hello world application in github and we will be finalizing how we are going to implement the animations by next week. We are planning to start writing the html pages next week and start testing the css combinations to have a good UX.

Even though we have already divided the work, we always discuss what exactly each member is doing each week and doing a status evaluation. My team members always look forward for suggestions from other team members to improve their ideas and when in doubt. Even in backend side if I have any opinion the team members doing the backend side considers my opinion also. Therefore, I feel that communication has helped us in maintaining the project schedule we planned during the initial meeting.

2. Neha Kumar

Core Value: Simplicity

This week met with team members and finalized on technology. We will be using MEAN stack.

This week we met to decide on our backend tasks. Since, the work was divided into two major tasks, Frontend for designing the webpage and creating tutorial pages for explaining the Binary number. Second, task was to create a server and setup database which could talk with the server.

I had already created three tables/collections for storing information of Player, storing Scores and for storing the questions. Now, the task was to make the server talk with database and fetch data. The database connectivity part was remaining. For database, although Mongodb was good enough but we thought of using latest technology and hence decided to implement MHub which is cloud version of MongoDb. Now, I and Vimal will be doing the setup of MHub part and then later look into connectivity with the server.

After creating the collection, we discussed on simple problems and need of fetching data from database for a user from scoreboad. A user's score will be updated on scoreboard once he completes the quiz. If a QuizBank Table can be independent.

3. Rakesh Datta

Core Value: Feedback.

UPDATES:
The whole idea of this project is to have a cloud based solution.
This not only helps us in scaling the solution but also minimize the opex and capex.
If the solution is designed over cloud, we have less dependncy over team resource and it will be running autonomically for a longer time.

Keeping this is mind we divided the whole project into components like :
- server to host the app
- server to host the back-end REST end-points and services
- server to have the centralized database and it's replica

After our extensive research we found several options to cloudify these components.
However, we wanted everything to be free resources so that the project runs indefinitely.
With that in mind, we decided to use:
- Heroku for the App deployment,
- AWS (free-tier) for the back-end webserver
- mlab (cloudified mongodb) for our database server.

All these components have a free subscription.

Individually I have deployed the heroku setup for this project. We also wanted to leverage the 'continuous integration' feature provided by heroku. I have connected the github project repository with the heorku project in such a way that,whenever there is any change pushed to github, heroku will be notified. Thereafter, heorku will build the new code and deploy it. This will help the developers to develop and test simulatenously without any hassle. This will also help the evaluators to find out the latest state of the app at any point of time.

- EXHIBITION OF THE CORE VALUE:

With the current REST end-point design, we are deploying both the webserver and database inside the same EC2 instance. The team felt that, although this makes sense, it is a better to design to have a clear seperation between the web-sever and database server. This helps in situation like auto-scaling. When the web-server needs to auto-scale, database server does not need to. Scaling database server will lead to fatal replication issue. This peer review discussion and feed-back really helped us brain-storm and come up with a mature design.

We went to multiple AWS deployment websites and understood the real-life deployment scenarios.

I took the feedback constructively and we decided to seperate out the web-server and the database.

The feedback led me to think more and I researched to find out that we have a clodified mongodb called mlab.

We dont event need to have a server and maintain mongodb in it. mlab provides a cloud solution for this purpose. This brought us to our latest design where EC2 instance is used for the webserver and mlab is used for the database server.

Completing the the project is not the ultimate goal. Learning through the project, cricially thinking and coming up with an industry-level solution should be the ultimate goal. In this particular case the team think critically and came up with good review comments, which actually led to a much better and scalable design.This is a great example of the xp core value 'feedback'

4. Vaishampayan Reddy Pathuri

Core Value: Courage

This week was mostly oriented towards pocs, basics setups and other components. Me and Ashna kick started on UI development. One of the most influential designs in UI is material design by google. There a lot of guidelines defined by google on UI elements, kits, colors, icons, responsiveness of the controls etc. There were many third party vendors providing UI kits satisfying or addressing all these guidelines. More or less almost all the components are covered. One of the prominent UI Kits is https://www.materializecss.com. This is an open source tool kit. Another one we also considered was bootstrap paper theme by bootswatch. But due to the high popularity and the high user base we went with materializecss. This materialize CSS also is part of CDN so that we can directly use the clouds URLS for the webpages and not explicitly saving them to our project folder, thus saving valuable network bandwidth of the deployed server.

All these days in the week we maintained very good rapport with the team and discussed about various UI designs and POCs of the important components in the UI designs. All the time everybody in the team maintained courage and implemented dutifully whatever they were intended to do. Vimal, Neha and Rakesh worked comparative studies of various components of backend. They were discussing the pros and cons of using SQL vs NoSQL database for our project. This week we all used communication channel slack and team meetings to discuss the overall work progress. During all this time everybody maintained courage. Courage is an important part of design discussion. Everybody needs to spread their opinion and only close and length dissertations will help everyone understand the work progress. Our website is hosted at http://binarylearning.herokuapp.com/. This is a heroku deployment. The hall of the fame table along with the website default colors are finalized. we also have lot of components under development stages. All these can be viewed in the coming weeks. we are all excited to be part of this team and working towards creating an impactful game and help people understand the topics easily.

You can view the materialize kit at http://materializecss.com. This is one of the mostly widely used free UI kits for development of rich UI.

5. Vimal Muraleedharan Nair

Core value: See the Whole

This week we started off with the development of services and front end development. Vaisham and Ashna agreed to work on frontend, Rakesh, Neha and myself decided to work on back end. Vaisham suggested to have the UI design using Google material design for the UI. This is a responsive framework which would suit our application. Material design has lot of adhoc modules which can be used as a plugin module and custom CSS are also available which will make the whole task very easy. So Ashna and Vaish divided the screens among themselves and started working it. After that we had a discussion of the data base that has to be selected for our Application. Msql and MongoDB were the obvious choices which came to our mind. Both has its own pros and cons, MongoDB proved to have a little bit edge over MySQL as far as our application is concerned. Mongo labs is a service from MongoDB which allows us to create databases in cloud. There are different payment options available for Mlabs, and the free tier of 300 MB was more than enough for our application. Later we decided to setup the application in Heroku. The boilerplate application was deployed into cloud by Rakesh and started making sample services to make sure that the API's are up and running and can be accessed using the public URL. We also setup the collections in Mongo Labs, and the data stored could be accessed using a normal client. We setup all the collections needed as per the database design and started pushing data into the mongoDB. I have also started working on a Helloworld node js service, which pulls data from Mlabs and I am currently working on the CRUD operations for the same. I am also working on the login module which collects the user information and performs authentication. There will be close to 15 services that we have to make for the complete application. We made a list and divided it among ourselves, so that there is no further delay and we can work it ASAP. During the course of the week, we thought of the complete step rather than just the immediate goal. So I thought throughout the course of the project we were focusing on the 'See the whole' core value.