Internship Report

Development of web based Chabot application

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Abstract

The key to having successful and fully functional web applications is in their
Communication with the user.TNBCC is the Online based start-ups where many innovative ideas are turned in to real-time prototypes. They believe in practical skills rather than classroom study. They encourage the students to work with our team resulting in developing their skills and gain some experience. They provide guidance to students and get them equipped with an industrial environment. Where I had the honour to spend my first training period.

A solution has been proposed for the internationalisation and customization of web
Applications in general. Taking into account web standards and the back-end and
Front-end architecture of web development, a method for providing a Chabot web interface has been planned from scratch and explained in details in this report.

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1. Introduction

As a full time student at University of National Institute Of Science And Technology. I have decided to undertake a semester of my third year. The degree towards I am currently studying is a Bachelor of Science in Information Technology. The course at the TNBCC was quite challenging for me for a few reasons: Firstly, the programming languages and development tools I was using at the TNBCC were quite new for me, hence I had to quickly integrate not only with my new living environment but also academically. This was very beneficial for me as at the end I could compare what I've learnt with what I already knew and find a connection between the two. Since I find myself more interested in the area of web development and design, I was happy to be assigned the position of a trainee in web development. This report is a description of my internship carried out as a compulsory component of the course at TNBCC. In the following chapter details of the activities of my team are given. Afterwards, I explain my role and tasks as a trainee and give specific technical details about my main tasks. Finally, a conclusion is drawn from the experience.

1.1. Context of Project

The team TBA (Supporting Interaction and Learning by Experience) conducts research in the field of knowledge construction, user assistance, system adaptation to the user, and usage analysis by the user. The topic of the TBA team is about the interaction between human and Chabot . They design new methods and solutions to successful knowledge transfer between users and web technology. The platform provides highly functional tools for the development of personal learning environments or educational devices. Thus, users can manage, store, share and disseminate information while having high level monitoring. While the implementation of this project requires back-end programming and data management, it is of equally high importance that the delivered data to the user is understandable and accessible through good design and communication, or front-end programming.

1.2. Context of Internship

I have assigned a task of "Design a simple web based Chabot application using mongo dB database. Take a 100 instances of daily life conversations as a dataset for Chabot " .I think this is way of Establishing good communication with the user, while making it accessible for a wider audience. Furthermore, the solution had to be extended and modified in order to comply with any web page written in HTML. Implementations will be discussed further ahead in the report.

1.3. Technical Aspect

For the completion of the tasks the following web languages and scripts have been
Used: HTML and Bootstrap for the construction of the layout, CSS for the design of the layout, JavaScript for dynamic functioning, Ajax, python for establish a bridge between server and web page and JSON for data storage.

2. Discussion

2.1. Overview

The web based Chabot had been planned to consist of two parts front- end and back-end development. The front-end is the part of the web that you can see and interact with (e.g. Client-side programming). While front-end code interacts with the user in real time, the back-end interacts with a server to return user ready results. The front-end is a combination of HTML, CSS, Bootstrap and JavaScript coding. By using JavaScript, modifications of the design of a web page can be made immediately, however only temporary and visible only by the user.
Normally the user would not have rights to modify web content dynamically on the server side. Logically, administrators are the ones who deal with back-end modification of databases for example, as they often contain sensitive data which should not be available to see or modify by the general public. Back-end programming languages include Python and Ajax .As I have minimal experience with back-end programming, I have initially focused on the front-end development of the Translate and Edit module. However, if a developer were to extend its functionality, they would be able to
Reuse code that manages user edits for their benefit.

Development differentiate and where is their common point.

2.2. JSON

The database in this case is the JSON library file, stored on the server-side and parsed upon request. As JSON was used primarily in the web extension to store data, I have decided it would be a good idea to use it as a method of internationalisation for the Chabot, mainly because of
The simplicity of adding data, which is an important part of the module.
By creating an array of objects, each containing default text from the Assistant
And its translations, I was able to compare every text attribute on the page with
The existing ones in the library and replace them appropriately.

2.3. HTML and Bootstrap

What I had to take in mind prior to starting the project was accessibility issues and web standards. I had written a strict HTML file that contains lots of div classes for Chabot log and user interface. Bootstrap has a lots of predefined CSS and HTML tags so, it is very useful during the Design phase. Bootstrap also famous because of its responsiveness result.

3.4. Style/ CSS

The main styling is stored in an external spreadsheet, style object has also been used to change some settings while the JavaScript is being loaded. I have found it to be effective in changing background and border properties of objects.

2.4. JavaScript

All functionality of the modules has been programmed in JavaScript, including jQuery and AJAX. jQuery is a fast and small JavaScript library that offers many useful features that make event handling among other things much simpler with an easy-to-use API that works across a multitude of browsers. AJAX, though not another programming language or library is a way of using existing standards. It is the art of exchanging data with a server and updating parts of a web page, without the need to reload the entire web page. As AJAX was already used to dynamically load data for the Chabot , I Have found certain AJAX event handlers in jQuery to be useful for my application.

2.5. Python (Flask)

Flask is a popular Python web framework, meaning it is a third-party Python library used for developing web applications. Flask uses a specific syntax to create links from a page to another. This is fact generates the link dynamically according to the decorator set to the function linked to. In addition it takes care of where the application is deployed.
For example, if you website is deployed at: /myapp/ flask will automatically happend /myapp/ to all links without the need for you to specify it.

2.6. Problems and Suggestions

All in all, the methods proposed in the solution are quite general, however not fully completed. There is plenty of room left for improvement. For instance, while accessibility issues have been handled, some JavaScript functions remain accessible only at user click which could be difficult for those that do not use a mouse output. I would suggest that tab properties are added to all text that allows modification in order to make sifting through them easier and on click event handlers are extended To work on key press events as well. I have struggled to find the best practice of comparing strings. Not all web applications are programmed perfectly with text that is always enclosed in tags, or Properly spelled, which means a comparison is not full and might result in a glitch.

3. Conclusion

In a nutshell, this internship has been an excellent and rewarding experience. I can conclude that there have been a lot I've learnt from my work at the TNBCC. Needless to say, the technical aspects of the work I've done are not flawless and could be improved provided enough time. As someone with no prior experience in JavaScript whatsoever I believe my time spent in design web based Chabot new languages was well worth it and contributed to finding an acceptable solution to an important aspect of web design and development.

Two main things that I've learned the importance of our time-management skills and self-motivation.

Appendix A- Front-end code.

```
<!DOCTYPE html>
<html>
   <head>

   <link rel="stylesheet" type="text/css" href="static\chatbot2.css">

   </head>
   <body>
         <div class="container">
            <h3 style="background-
color:red">         
                  
                            
                            
                            
                            
                      

                     &nbsp_____________CHATBOT
UI___________</h3>
         </div>

      <div class="chatbot">
         <div class="chatlogs">
            <div class="chat friend">
               <div class="user-photo" > <img src="static\raj.JPG"></div>
               <input type="text" class="chat-message" id="friend"  name="fval">
            </div>
            <div class="chat self">
                  <div class="user-photo"><img src="static\r3.JPG"></div>
                  <input type="text" class="chat-message" id="self"  name="val1">
            </div>


         </div>
         <div class="chat-form">
            <textarea id="message" placeholder="type message"></textarea>
            <button id="chat" onclick="friend()">Send</button>
         </div>
      </div>
      <script src="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.1.1/jquery.min.js"></script>

   </body>
   <script>

      $('#chat').click(function () {
         console.log("in function");
         $.ajax({
            url: '/api/calc?a=' + document.getElementById('message').value ,
            success: function(data){
               console.log(data);
               senddata(data);
```

```
            }

        });
    });

    function friend()
    {
        var a=document.getElementById("message").value;
        document.getElementById("friend").value=a;
    }
    function senddata(data)
    {
        document.getElementById("self").value=data;
    }
  </script>
</html>
```

Appendix B- Back-end code(without database).

```
#examples/flask/22/app.py
from flask import Flask, jsonify, render_template, request
import time
import moduledb
app = Flask(__name__)
@app.route("/")
def main():
    return render_template('chatbot2.html', reload = time.time())

@app.route("/api/calc")
def add():
    a = request.args.get('a', 0)
    print(a)
    res=moduledb.getvalue(a)
    print(res)
    return res
app.run()
```

code for database:

```
from pymongo import MongoClient
def getvalue(a):
    client=MongoClient()
    db=client["chatbot"]
    collection=db["botdetails"]
    l={"Hi":"Hello" ,
    "How are you?":"Fine",
    "How do you do?":"Very well",
    "It has been a long time after our last meet":"yes,That's right",
    "It's nice to see after a long time":"yes ofcourse",
    "It's very shocking to see you in this fear":"I came here to accompany my cousin's
     family since they don't know this place",
    "Why did you come here?":" My family compelled me to join them. So, I am here with them.",
    "Wait. Did you get married?":"No. I am not older to get married.",
    "I am going to have the giant wheel ride. Will you join me?":"No, I'm not interested.",
    "Where are your family? Let me meet them.":"I don't know where they are.",
    "What are you doing?":"I'm currently studying B.Tech of Mechanical Engineering.",
```

```
"Oh! That sounds cool. and you?":"I am studying in BBM.",
"That's fantastic.":"hmmmm.",
"ok lets talk about future pla":"sure why not",
"After B-tech what's your plan":"right now 1st i'm thinking about a good job.",
"Ooo that nice":"hmmm.",
"but after job  ":"after job i am thinking about preparation of GRE with job together",
"That nice":"i know but it not so easy",
"ok tell me what about your future plaining":"i only searching a good job ",
"that a good":"yes",
"My dad is calling.we talk later":"ok",
"Byee see you soon":"Ok byee"
}
#collection.insert(l)
#res=collection.find({},{"a":1})
x=l[a]
return x
```

Reference

jQuery. jQuery API Documentation . [Online]. [Last Accessed 15th march 2019]. Available from: http://api.jquery.com/

W3schools. AJAX Tutorial. [Online]. [Last Accessed 16th June 2019]. Available from: http://www.w3schools.com/ajax/default.ASP

HTML W3school https://www.w3schools.com/html/

Python Flask: https://www.tutorialspoint.com/flask

JavaScript : https://www.tutorialspoint.com/flask

W3CSS, https://www.w3schools.com/w3css/default.asp

W3Bootstrap: https://www.w3schools.com/bootstrap4/default.asp

Mongo Database: https://www.tutorialspoint.com/mongodb/