Project Report for CSE 482

North South University Internship Management System

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Contents

List of Figures

1 Introduction

In a short period, the computer industry has evolved swiftly and significantly impacted everyone's lives. Major firms, educational institutions, financial institutions, and other organizations rely on various computer-based solutions to save time and money. Online job searching improves knowledge levels and creates new labor market channels. On an online internship search website, we looked at how undergraduate students applied and the decisions made by employers. We looked into the signaling and screening processes involved in hiring interns. Our findings imply that factors such as a student's degree, college background, gender, involvement in leadership positions, and volunteer experience have little bearing on an employer's choice. Employers rely heavily on candidates' employment preferences, CGPA, national certification, and past internship experience. Employers often receive speedier application responses and more internship applicants when they publish more corporate information online. In this project, one such technology is offered to be adopted by every educational institution to make ordinary activities easier. NSU Internship Management System is a comprehensive toolkit for administering and coordinating internship programs at a university. It is created to offer an interactive tool for companies and students to create a bridge between one another at any time and from any location. Students can better understand the requirements, track their progress, and connect with the companies. From the Web-Based Internship Coordinating System, students can check and update a company's review and details and then can apply for the internship directly if necessary. This piece of the website is easy to maintain. Admin can subsequently modify any issues because it is written in PHP, and HTML is used for building dynamic web pages.

2 Similar Type of Works

There are many job and internship portals for taking as an example. So, we have put together a list of the best models for getting some ideas to make an internship portal website.

LinkedIn: On the 12-year-old professional networking website from Mountain View, California, LinkedIn, you should not only utilize it to look for internships but also to flesh out your profile and connect with everyone you know, exceptionally professional acquaintances. Go to the employment tab at the top of the website and type "internship" into the search box to find ads for internships. Fill in the boxes on the left side of the page to further focus your search. The inability to select paid or unpaid opportunities is a drawback. The best feature of LinkedIn is the rapid visibility of which of your acquaintances work at a firm or are acquainted with employees.

Glassdoor: This Sausalito, California-based startup, which was founded in 2007, receives its internship postings from various sources, including corporate websites, joint ventures with job boards, and direct contact with employers. However, its primary draw is that it provides a quick method to look up salary, company ratings, and details of job

interviews. Although the wage and review capabilities don't always work well for tiny businesses, the interface is simple.

NSU CPC: This is a university's job listing site and alumni network. University's official post internship listings. You will have an advantage over other candidates for these internships if you can access a database like this. If you're a student, this should be your first destination.

Internship.com: Chegg, a Santa Clara, California-based provider of online tutoring and textbook rentals, now owns Internships.com, founded in 2010. One hundred thousand postings are available from 60,000 employers. Employers can post openings for free on Internships.com. The site has a "who" tab that allows you to discover which of your Facebook friends are connected to a business, either because they work or formerly worked there. This is a significant benefit.

3 Objective

The internship management system is an important component of interaction between students, educational institutions, and companies. It also has a significant impact on the digitization of internship-related procedures. Internships will make it easier to identify talents that fit the internal culture of the companies and will increase output. Internships will help educational institutions become more market-oriented. Additionally, by helping students become more market-conscious and aware of their skills and abilities before they graduate.

4 Plan Description

4.1 Architecture

The Central DB will receive requests from multiple types of clients, such as Android, iOS, and Windows apps, as well as browsers. Clients will send requests to the cache server. If the cache server doesn't have the data, the request will go to the web server. The Web server will get essential data from the central DB. Then, it will respond to the cache server's request, and the cache server will give us the response.

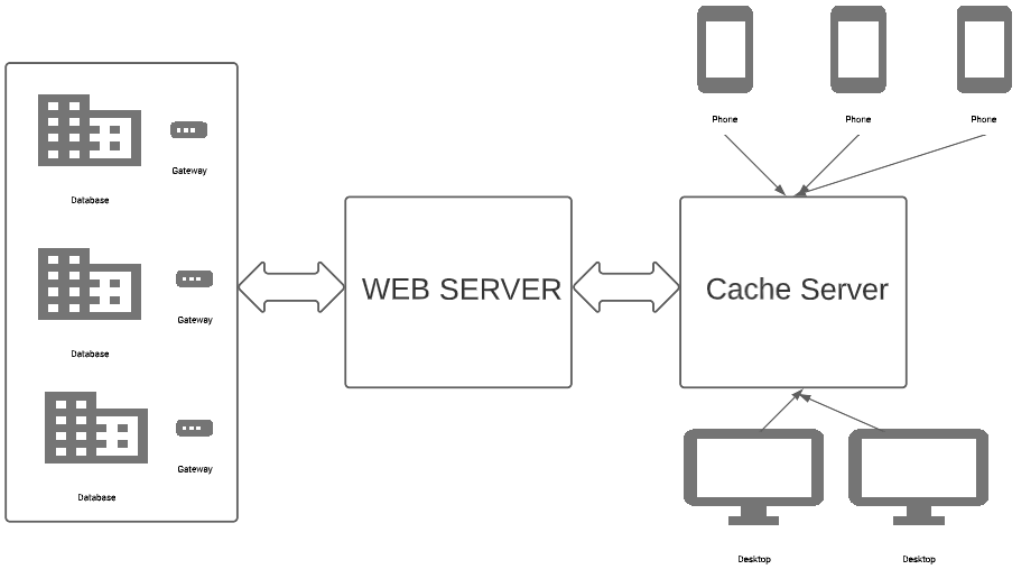

Figure 1: Website Architecture

4.2 Required Tools

HTML and CSS provide the foundation of the front-end design. The website is made more appealing using the Bootstrap 5 CSS framework. Languages like HTML and CSS are used to structure and style online pages. Client-side validation has been accomplished using Java Script. JavaScript adds interactive aspects to web sites that keep users interested. The MySQL database is used for credential information, while the other information, such as job, profile, employer, and location data, is saved in a For server-side programming, PHP is utilized to enable quick development.

4.3 Front-end Plan

The process of creating HTML, CSS, and JavaScript for a website or Web application so that a user can view and interact with them directly is known as front-end web development, sometimes known as client-side development. The difficulty with front end development is that the methods and technologies used to build a website's front end are continually changing, necessitating ongoing monitoring of the industry's advancements. The Front-end Plans for this website are:

1. Main page
2. Search result page
3. Job details page
4. Candidate details page

5. Job creation page
6. Register/login page
7. Candidate profile creation page
8. Employer details page

4.4 Back-end Plan

Working on server-side software, or what you can't see on a website, is what back-end development entails. By concentrating on databases, back-end logic, application programming interfaces (APIs), architecture, and servers, back-end developers make sure the website functions properly. They employ programming that facilitates database communication, data storage, comprehension, and deletion for browsers. The Back-end Plans for this website are:

1. Account Creating, Password Recover
   (a) Sign up form, verification by mobile or email
   (b) Login
   (c) Forgot Password
2. Profile Management
   (a) MySQL Database
   (b) People's Profile
   (c) Company's Profile
   (d) Job's Profile
3. Searching facility
   (a) Job category based
   (b) Job Search

4.5 Other Plan

There are some other plan to make this website more efficient and helpful. Any website's success depends on usability, which should never be disregarded. Your website's performance may be enhanced and your chances of success raised through good usability. Some useful features of this website are:

1. Mobile first design
2. Privacy option for both employer and candidates
3. Will allow anonymous browsing for resume
4. Will allow anonymous uploading of CV with just name
5. Responsive front end
6. SMS sending feature

5 User Story Description

An informal, generic explanation of a software feature written from the viewpoint of the end user is known as a user narrative. Its objective is to explain how a software feature will benefit the user. It's easy to believe that user stories are merely the specifications for software systems.

Registration: Users can create their account as either a student, company, or admin. The admin will have additional features that the others will not have. Registration is an essential step to accessing the website; those without an account will not be able to use the website to its full capability.
Login: The login section will be used once an account has been registered. One has to input their name/ID number and password to gain access to their account and use the website's features.
Search: A search bar is implemented to make it easy for users to search for their desired internship opportunities. Keywords can be inputted into the search bar and similar posts will show up; if there is no standard post, a message will be displayed saying nothing has been found.
Apply for intern: One can apply to become an intern in their desired company by browsing through the list of internship opportunities available on the website's home page.
Post Information: Information about the internships are also displayed along with monthly payment, location, and skill requirement description.
View intern info: An intern can view their inputted information in this section, and companies can check on the available interns' information.
Update Profile: Users can change and update their existing profile and edit their given information.
Manage Account: Students, Companies, Faculty, and the admin can manage accounts. Users can only manage their accounts while the admin has permission to operate all accounts created on the website.
Manage Internship: Companies and Faculty can add, delete or edit internship posts sent to the internship list for interns to view.
Change password: Users can change their current password and set a new one.
Log Out: All users will have the option to log out of their account, after which they will have to re-enter their username and password to log in again.
SMS Sending: A company can send SMS to students to give update.

5.1 Use Case Diagram

A use case diagram in the Unified Modeling Language (UML) can condense the specifics of your system's users (sometimes called actors) and their interactions with the system. You'll need a specific set of connections and symbols to construct one.

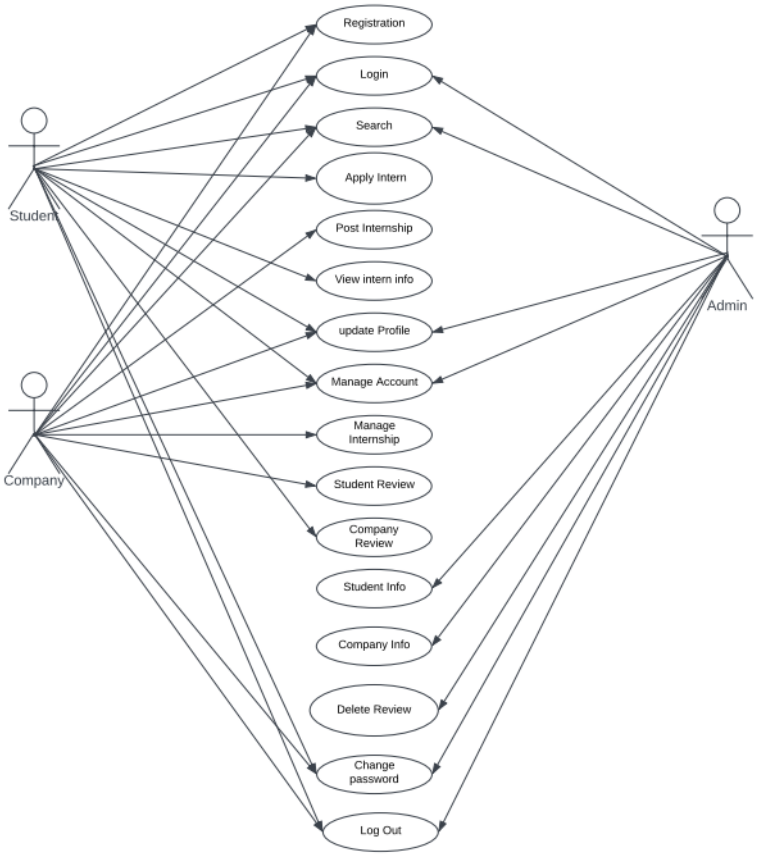

Figure 2: Use Case Diagram

6 Development Plan

This website's development technique is based on the agile methodology. Each cycle has taken precisely two weeks to complete. Our software development team published a functioning software version at the conclusion of each cycle. The team used the program, tested it, and gave input in the other direction. Each team member revised its development plan within a reasonable range of change over the next cycle.

6.1 Phase 1 (Week 1-2)

Submit proposal hard copy, and interface design: We divided our work schedule into a total of eight weeks for development and one week for final deployment. This phase will develop a minimum viable product (MVP) with basic and initial UX.
Deliverable: We managed to give our project proposal on this schedule. We managed to give our project proposal on this schedule. We also did some basic websites linking to home pages, contact pages, job pages, etc.

6.2 Phase 2 (Week 3-4)

Login/logout page, forms, different HTML pages We decided to finish up all the pages for our website. We tried to use Bootstrap 5 to design our website. so that our website looks engaging.
Deliverable: We almost managed to build all of our pages on this schedule. But, we failed to build faculty and company pages for our project proposal on this schedule. We did build remaining pages like login, registration, admin panel, student's profile etc.

6.3 Phase 3 (Week 5-6)

Registration, session initiation, cookie setting, database integration We decided to finish up the remaining pages for our website. We tried to connect the database to our website. We also worked on sessions and cookies.
Deliverable: We managed to finish all of our pages on this schedule. We integrated our database to respond according to the client's request. Session initiation was built successfully.

6.4 Phase 4 (Week 7-8)

Remaining back-end and API integration We decided to finish up the remaining back-end work for our website. We tried to integrate a 3rd party SMS API to make our website user-friendly. We also worked to build search option
Deliverable: With the help of PHP, we managed to connect all of our pages to the database. We built a search option. We integrated a 3rd party SMS API system on the website.

6.5 Phase 5 (Week 9)

Hosting We decided to finish up the remaining works. Then we tried to host our website.
Deliverable: We used a free hosting services to host our NSU internship management website.

6.6 Project Schedule

A project schedule is a timetable that organizes tasks, resources and due dates in an ideal sequence so that a project can be completed on time.

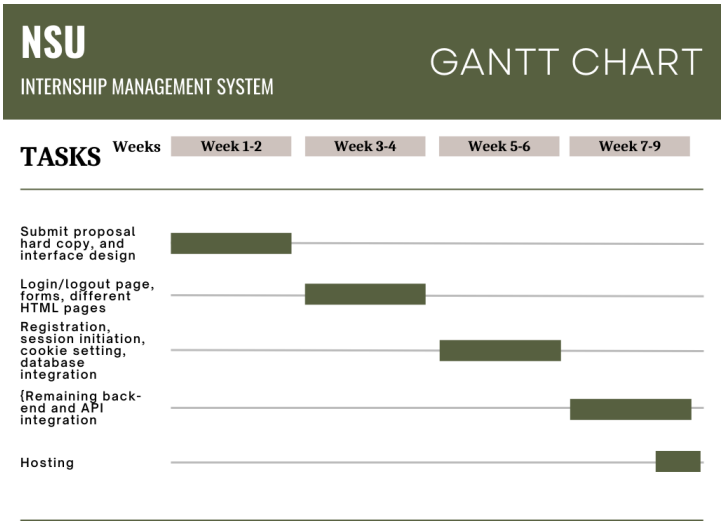

Figure 3: Gnatt chart

7 Performance

Making websites quick, especially making sluggish procedures appear fast, is the main goal of online performance. Does the website load fast, enable speedy user interaction, and provide comforting signals when something takes a while to load (such as a loading spinner) Smoothness of scrolling and animations This article gives a quick overview of objective, quantifiable online performance while examining the technology, methods, and resources used in web optimization.

7.1 Open-source web page tester (https://www.webpagetest.org/)

1. This site was quick to connect and deliver initial code. It began rendering content with little delay. The largest contentful paint time was good.
2. This site had major layout shifts.It took a long time to become interactive. It had 1 accessibility issues, none serious. HTML content was mostly generated server-side.
3. This site had zero render-blocking 3rd party requests. It had no security issues detected. HTML generation was not overly JavaScript-dependent.
4. **Observed Metrics:**

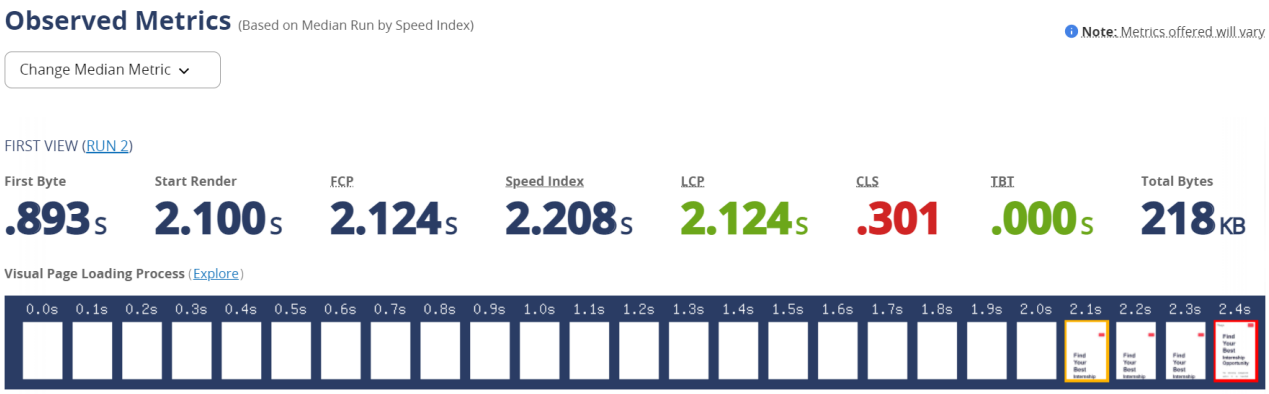

Figure 4: Observed Metrics on Webpagetest.org

7.2 Google Page evaluation (https://developers.google.com/)

1. OPPORTUNITIES
   (a) Eliminate render-blocking resources
   (b) Serve images in next-gen formats
   (c) Properly size images
   (d) Reduce initial server response time
   (e) Reduce unused CSS
2. DIAGNOSTICS
   (a) Ensure text remains visible during webfont load
   (b) Does not use passive listeners to improve scrolling performance
   (c) Image elements do not have explicit width and height
   (d) Serve static assets with an efficient cache policy
   (e) First Contentful Paint (3G)
   (f) Avoid chaining critical requests
   (g) Keep request counts low and transfer sizes small
   (h) Largest Contentful Paint element
   (i) Avoid large layout shifts
   (j) Avoid long main-thread tasks
3. **Observed Metrics:**

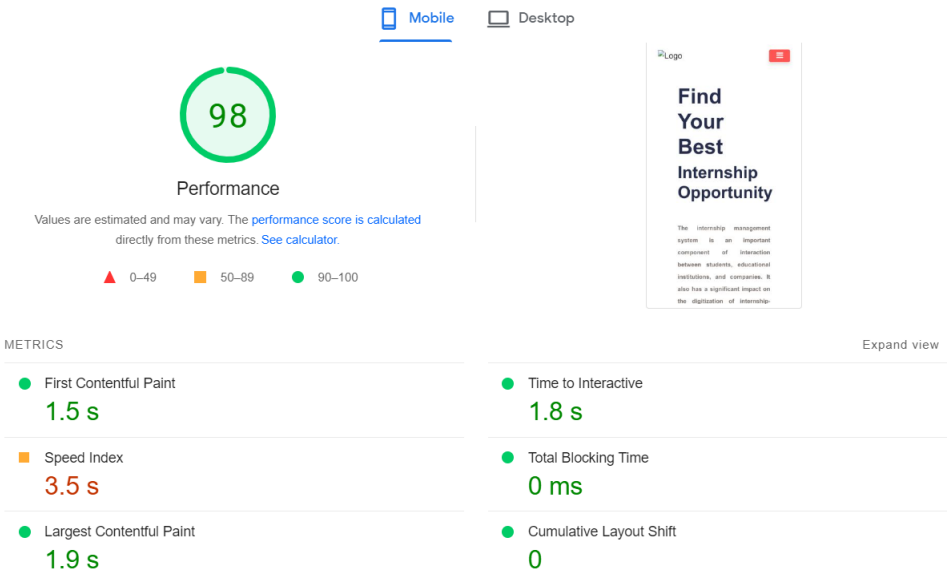

Figure 5: Observed Metrics on Google Page evaluation

8 Hosting

Virtual private servers, or VPSs, are a type of multi-tenant cloud hosting in which end users can access virtualized server resources online through a cloud or hosting provider. Each VPS is set up on a real server that the cloud or hosting company manages and uses to run other VPSs. While the underlying hardware and hypervisor are shared by all of the VPSs, each one runs its own operating system (OS), applications, and reserves its own set of system resources (memory, compute, etc.). We are hosting our website via a self-hosted VPS. BOL(Bangladesh online) is the service provider of this VPS. The operating system is Ubuntu, and the platform is LAMP Stack. Here, Storage: 50 GB CPU: 4 cores, and RAM: 8 GB.
Go to the next URL: `http://182.163.106.50/ims/`

9 Conclusion

NSU Internship Management System will provide a perfect communication environment for the instructor and the students who wish to register for an internship class. For the instructor, it will offer an ideal environment to monitor a student's progress and avoid unnecessary delays. For the students, it will also provide a good background that all the students can look at the shared information about companies. Students can read the internship guidelines online and understand all it takes to complete an internship successfully.We can do some measurements to improve our performance. The system is straightforward to use, and any additional requirements can be easily added without affecting the current information. This is what makes it so convenient to use.