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ENSE 374 – Software Engineering Management

Hiking Trails Web Application

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- Proofread the text for typing and grammar mistakes.
- Follow the IEEE Bibliography style for the references by selecting "References/ Citations & Bibliography/ Style".

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1 Introduction

- Give a brief description of the design and a summary of the relevant background information related to the topic. Give a rationale about what is needed and why.
- Specify the project requirements provided by the stakeholders in the context of your project topic. Provide link to ‘Project Requirements Document’
- Give the reader an overview of what is in the next sections.
- Do not put any detailed results of your work here.

Our web design is on hiking trails as people who enjoy nature, enjoy walking through trails and breathing some fresh air. During the time of covid, everyone was in lockdown in their homes. People had to wear masks for about 3 years with some still wearing them till this day. Ever since the lockdown, the amount of participation in outdoor recreation such as hiking has increased significantly with 40% of Canadians increasing their trail usage since 2020 (reference). What our design will show are numerous hiking trails throughout Saskatchewan, with each hiking trail having their own ratings and reviews based on customer experience.The application will allow users to enter filters when searching for a specific type of hiking trail they want to go on. These filters could include the distance of the trail from their home, the distance it will take to complete the trail, the trail with nearest benches and bathrooms, and etc. Programming such a web application will need the use of html, css, and javascript.

2 Design Problem

This section has the following two subsections:

2.1 Problem Definition

Provide a link to the 'Business Case.'

https://github.com/kakokamo/Ense374Project/blob/8fcc43df337e2ac1dc6369957f19a0c6c241ad09/Project-Planning%20documents/Business_Case.docx.pdf

Project-Planning documents/Business_Case.docx.pdf

2.2 Project Charter

Provide link to 'Project Charter' document.

https://github.com/kakokamo/Ense374Project/blob/8fcc43df337e2ac1dc6369957f19a0c6c241ad09/Project-Planning%20documents/Project%20Charter.docx.pdf

Project-Planning documents/Project Charter.docx.pdf

3 Solution

In this section, you will provide an account of some solutions your team brainstormed to implement the project. Some solutions might not have all the desired features, some might not satisfy the constraints, or both. These solutions come up in your mind while you brainstorm ways of implementing all the features while meeting the constraints. Towards the end you select a solution that you think has all the features and satisfies all the constraints. Remember that an engineering design is iterative in nature!

3.1 Solution 1

Write a brief description of your first solution and provide the reasons for not selecting this one.

https://github.com/kakokamo/Ense374Project/blob/8fcc43df337e2ac1dc6369957f19a0c6c241ad09/Project%20Prototyping/Designs/Design1.jpg

Project Prototyping/Designs/Design1.jpg

The **Hiking Trails Web Application** provides a structured and engaging interface for users to explore hiking trails across Saskatchewan. The design includes several functional areas and interactive elements to support users in discovering, filtering, and reviewing hiking trails.

1. **Navigation Bar**:
   At the top, a navigation bar allows easy access to key sections of the site, including **Home**, **Trails**, **Volunteer**, **Support**, **Suggest**, **Report**, **About Us**, and **Contact**. This layout ensures users can quickly move between pages and find the information or features they need.

2. **Disclaimer Section**:
   A disclaimer box on the left side of the page alerts users to trail etiquette, specifically warning against littering. It mentions a fine for repeated violations, emphasizing responsible use of trails. This feature helps promote environmental stewardship and informs users of rules.
3. **Trail Search and Filter Options**:
   The main focus of the page is a **search and filter section**. Users can select a location (with "Saskatoon" as an example in the sketch) and then sort the list of trails by recommended options. The filtering options include **Price**, **Duration**, **Length**, **Terrain**, **Elevation**, **Difficulty**, **Resting/Bathroom Facilities**, and **User Rating**. This robust filter set allows users to customize their search based on specific needs, making it easier to find trails that match their preferences.
4. **Review Section**:
   On the right, a section labeled **"Reviews"** displays user reviews, showcasing feedback from multiple users. Below it, there's an option for users to **leave a review** of the website, where they can enter their name and review. This interactive feature encourages user engagement, allowing hikers to share their thoughts and contribute to the community.
5. **Contact Information and Social Media Links**:
   The left side of the page also includes a **Contact Us** area with placeholder phone numbers and icons linking to social media platforms like Facebook and Instagram. This provides users with options to connect with the team or learn more about the trails through social channels, enhancing community interaction.
6. **Footer Links**:
   At the bottom, the footer repeats key navigation links (**Trails**, **Volunteer**, **Support**, **Report**, **About Us**, and **Contact**) for easy access, reinforcing usability and site navigation.

User Benefits and Engagement:
This design solution offers users a well-organized and informative interface for exploring hiking trails. With comprehensive filters, users can easily search for trails based on a range of criteria. The review section fosters a sense of community by letting users share feedback, while the disclaimer emphasizes responsible trail use. Social media links and contact information keep users connected, encouraging return visits and ongoing interaction with the website.

3.2 Solution 2

This is an improved solution but might not be the final solution that you select. Give a brief description of this solution here.

https://github.com/kakokamo/Ense374Project/blob/8fcc43df337e2ac1dc6369957f19a0c6c241ad09/Project%20Prototyping/Designs/design2.pdf

Project Prototyping/Designs/design2.pdf

The **Hiking Trails Web Application** offers an engaging platform for hiking enthusiasts to find, explore, and share their favorite trails. Each page serves a unique purpose, enhancing the overall experience while providing easy navigation and personalized recommendations.

1. **Login Page (Before Login)**:
   This page is the initial entry point, where users can log in with their accounts. If they don't have an account, they can quickly sign up. The page also offers a preview of a few popular trails, sparking users' interest by showcasing exciting options and motivating them to create an account to unlock full access.
2. **Sign Up Page**:
   The sign-up process is straightforward, gathering essential user details to create an account. By registering, users gain access to personalized features and trail recommendations, making the experience more tailored to their preferences.
3. **Login Page (After Login)**:
   Once logged in, users are welcomed with a navigation menu and a feed displaying various trails. Each trail is accompanied by a brief description, showing the number of likes and comments. This information helps users quickly gauge trail popularity and community feedback, making it easier to choose a trail to explore.
4. **Search Page**:
   The search page includes advanced filters, allowing users to refine trails based on location, elevation, terrain, difficulty, duration, length, proximity to water, and user rating. This flexibility makes finding the perfect trail efficient and straightforward, ensuring users can easily match trails to their specific hiking needs.
5. **Best Trail Page**:
   This page features a quiz-like experience, asking a series of questions to help determine the best trail match for each user. This interactive feature adds value by offering tailored recommendations, making the app particularly useful for those new to hiking or those seeking a fresh experience.
6. **Trail Detail Page**:
   Here, users can view all information about a selected trail, including its description,

comments, and user interactions. Users can engage by adding their own comments, liking or disliking others' comments, and interacting with other hikers. This level of engagement fosters a community feel, encouraging users to share their experiences and insights.

7. **Trail Management Page**:
   This page lets users curate a personal list of trails and mark favorites. This organizational feature is useful for avid hikers who want to keep track of trails they've explored or wish to visit in the future, enhancing the app's value as a long-term hiking tool.
8. **About Us Page**:
   The About Us page introduces the team behind the app and outlines its purpose, adding a personal touch. Users can also provide feedback and contact the team, which promotes a sense of transparency and community involvement.

User Benefits and Engagement:
This application is useful because it provides a well-rounded hiking experience, from searching and selecting trails to sharing experiences with a community. Features like personalized trail suggestions, interactive comments, and the trail management system engage users and encourage repeated use. By catering to both new and experienced hikers, the application offers a supportive and dynamic tool that enriches users' outdoor adventures.

3.3 Final Solution

This is the final solution. Explain why it is better than other solutions. You may use a table for comparison purposes. After providing the reason for selecting this solution, detail it below.

Comparisons:	Solution 1	Solution 2:	Final Solution:

Costs			
Benefits			

3.3.1 Components

What components did you use in the solution? What is the main purpose of using individual components? Provide a block diagram (with a numbered caption, such as Fig. 1) representing the connectivity and interaction between all the components.

3.3.2 Features

Give an account of all the features your solution has. These features may be tabulated (with a title) for improved comprehension.

3.3.3 Environmental, Societal, Safety, and Economic Considerations

Explain how your engineering design took into account environmental, societal, economic and other constraints into consideration. It may include how your design has positive contributions to the environment and society? What type of economic decisions you made? How did you make sure that the design is reliable and safe to use?

3.3.4 Limitations

Every product has some limitations, and so is the case with your design product. Highlight some of the limitations of your solution here.

4 Team Work

Since this is a group project, you must have a fair distribution of tasks among yourselves. To this end, you must hold meetings to discuss the distribution of tasks and to keep a track of the project progress.

4.1 Meeting 1

Provide Links to ‘Meeting Agenda, Meeting Minutes, Change Request, Project Status Report, Issue Log’ documents.

4.2 Meeting 2

Provide Links to ‘Meeting Agenda, Meeting Minutes, Change Request, Project Status Report, Issue Log’ documents.

4.3 Meeting 3

Provide a similar description here.

4.4 Meeting n

Provide a similar description here.

5 Project Management

Provide the link to ‘Milestone-based Schedule’ document. Use Gantt chart as well to show the progress of your work here. Mention all the tasks along with their predecessors. Provide the slack time of each task and identify the critical path.

6 Conclusion and Future Work

- A summary of what you achieved.
- Provide Link to ‘Lessons Learned Report’ document.

· While keeping the limitations of your solution, provide recommendations for future design improvements.

7 References

· Use the IEEE reference style.

· Do not put any reference if it is not cited in the text.

https://tctrail.ca/news/national-leger-survey-finds-trail-use-has-increased-40-in-2021/

8 Appendix

If you want to provide an additional information, use this appendix.