CAN THO UNIVERSITY
COLLEGE OF INFORAMTION AND COMMUNICATION TECHNOLOGY

GRADUATION THESIS
BACHELOR OF ENGINEERING IN INFORAMATION TECHNOLOGY (HIGH-QUALITY PROGRAM)

BUILDING A WEBSITE FOR SEARCH AND HOTEL BOOKING USING SPRINGBOOT & REACTJS

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Cần Thơ xx/2024

INSTRUCTOR'S COMMENTS

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Cần Thơ, ngày …. tháng … năm 2024

Advisor

Lâm Nhựt Khang

THANK YOU!

First, I want to express my sincere gratitude to Ms. Lam Nhut Khang – who guided and shaped mu implementation process. Her advice and dedicated suppport have been an important source of encouragement helping me overcome

Next, I would also like to send my most sincere thanks to the teachers of the School of Information and Communications Technology for guiding and teaching me the foundational knowledge so that I can write my thesis and have always worry, teach, and help me on my learning path..

I would like to sincerely thank Can Tho University for not only being a place that provides knowledge but also a community where I can develop. I am proud to be a student of the school and will always carry the values and skills that the school imparted in my life and career..

I wish her good health, happiness and success in her teaching career.

I sincerely thank you!

Nguyễn Gia Linh

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ABSTRACT

Today, with technology 4.0 and the role of the Internet is increasingly being affirmed as indispensable in managing and sharing information of a country in particular or a locality in general.

With the increasingly widespread use of the Internet, the needs of tourists are also becoming more and more advanced, making it difficult to find a hotel before arriving somewhere or finding a hotel that is not satisfactory upon arrival. place also makes them feel unhappy or waste their time.

Grasping that trend, in order to serve the needs of tourists who can choose a place to stay before they arrive there, the topic 'Building a hotel search and booking website using Springboot & ReactJS' has can fully and well meet that need, with just a phone call and a few simple steps, they will find a comfortable place to stay exactly as they want.

A. INTRODUCTION

1. Problem statement:

Vietnam is a country with a strongly developed tourism industry, with the number of domestic and international tourists increasing. This leads to an increasing need to search and book hotel rooms.

However, currently, there are many hotel search and booking websites on the market, but they still do not fully meet the needs of users. Some websites have unfriendly interfaces, are difficult to use, or do not have enough information about hotels.

From the above factors, 'Hotel search and booking website' was built and implemented to give users different perspectives on local accommodation facilities, contributing to bringing a new color, a breath of fresh air to our lives. In addition, the website can also promote local images

2. Research objectives:

Hotel search and booking website using SpringBoot is to build a website that fully meets the needs of users and hotels, including:

- Friendly interface, easy to use: The website needs to have a beautiful interface, easy to see, easy to operate, to help users easily search and book hotel rooms.

- Full information about hotels: The website needs to provide complete information about hotels, including addresses, images, prices, amenities,...

- Clear booking function and simple operations help users easily perform

3. Subjects and scope of research:

To solve the problems raised in the above section, the project will focus on researching the following subjects:

- About theory:

  - Learn about ReactJS to build interfaces for the system
  - Learn about libraries and APIs that support ReactJS
  - Learn about the Spring Boot framework

- Technically:

  - Design a database to store and retrieve data
  - Use libraries and framework support

a. Research subjects:

Users: Website users searching and booking hotels include tourists, business travelers,...

Hotel: Hotel website registers to participate in searching and booking hotel rooms.

b. Research scope:

Research user needs: Research user needs for a hotel search and booking website including criteria on interface, features, price,...

Research existing hotel search and booking websites: Research existing hotel search and booking websites to draw advantages, disadvantages and learn from experience.

4. Research Methodology:

- Document research

- Actual survey

- Data analysis

5. Research content:

- Research user needs through existing websites, then follow the process of designing - developing - testing - deploying and operating the website

- About the technology applied in the project:

  - Back-end: Spring Boot Framework
  - Front-end: ReactJS
  - Cơ sở dữ liệu: MySQL

- About application and system development tools:

  - Tool design data: Power Designer
  - Tool installer: VSCode

- Implementation support tools: web browser, linux terminal

6. Layout:

The contents of the thesis include:

- ❖ A. Introduction:
  - Problem statement
  - Research objectives
  - Object and scope of the study
  - Research Methods
  - Research content
  - Layout
- ❖ B. Content:
  - Chương 1: REQUIREMENTS DESCRIPTION
  - Chương 2: SOLUTION DESIGN
  - Chương 3: SOLUTION IMPLEMENTATION
  - Chương 4: TESTING AND EVALUATION
- ❖ C. Conclusion:
  - Result
  - Develop

B. CONTENT

CHAPTER 1. REQUIREMENT DESCRIPTION

1.1. Related theoretical basis:

1.1.1. ReactJS

- ReactJS is an open source JavaScript library, developed by Facebook, used to build user interfaces (UI) for web applications. React's main goal is to help develop fast, efficient, and scalable web applications, with a special focus on efficiently re-rendering UI elements when data changes.

- React makes it painless to create interactive UIs. Design simple views for each state in your application, and React will efficiently update and render just the right components when your data changes.
- Declarative views make your code more predictable and easier to debug.
- Build encapsulated components that manage their own state, then compose them to make complex UIs.
- React has a rich ecosystem with many supporting libraries and tools, such as React Router (for handling navigation), Redux (managing application state), and many others for integrating with the backend.

1.1.2. Redux

- React Redux is maintained by the Redux team, and kept up-to-date with the latest APIs from Redux and React
- Designed to work with React's component model. You define how to extract the values your component needs from Redux, and your component updates automatically as needed.
- Provides APIs that enable your components to interact with the Redux store, so you don't have to write that logic yourself.
- Automatically implements complex performance optimizations, so that your own component only re-renders when the data it needs has actually changed.

1.1.3. Tailwind CSS

- Tailwind CSS is a utility-first CSS framework, designed to help developers build web interfaces quickly and easily. Instead of providing ready-made interface component classes like many other CSS frameworks

(Bootstrap, Foundation), Tailwind focuses on small utility classes that can be flexibly combined to create any design.

- Tailwind CSS works by scanning all of your HTML files, JavaScript components, and any other templates for class names, generating the corresponding styles and then writing them to a static CSS file. It's fast, flexible, and reliable
- With its widget-based approach, it reduces the need to write manual CSS and allows creating complex interfaces quickly and efficiently.

1.1.4. Database MySQL

- MySQL Workbench is an integrated graphical tool (GUI - Graphical User Interface) developed by Oracle, providing MySQL database development and management features. It is mainly used to design, develop, manage and operate MySQL databases more easily, without having to work through the command line. MySQL Workbench is one of the most popular tools for developers and database administrators.

- It is suitable for storing and managing structured data, such as customer information, product data, and business-related data

1.1.5. Client – Server

- The Client-Server model is a computer network architecture in which computers (called clients) send requests to a central computer (called server - server) to receive a specific response or service. This model is popular in network systems, web applications, database services, and many other applications.
- The client sends a request to the server via the network. The server receives the request, processes it (performs necessary actions such as searching for data, processing the request or performing a service) then the server sends a response back to the client with the results. handle.

1.1.6. SpringBoot framework

- Spring Boot is a Java-based framework, built on the Spring Framework foundation. It makes building web applications and microservices faster and easier.

- Spring Boot provides a number of features such as automatic configuration, dependency management, and integrated development tools, which help reduce the amount of configuration required when building applications.

- It is commonly used for the backend of an application, which handles business logic, database management, and API services.

1.2. Description system:

- 'Hotel search and booking website using SpringBoot' is built according to the MVC model
- Front-end: Is the component responsible for displaying the user interface and handling user interaction and built using ReactJS
- Back-end: Is the component responsible for handling business logic and database access, built using Java SpringBoot
- System operation steps:
  - Users visit the website to search and book hotel rooms. Enter search information such as location, check-in date, check-out date, number of guests, etc.
  - Back-end receives search information and performs database queries to find suitable accommodation locations
  - The front-end will display relevant search results
  - User selects the desired hotel and makes a reservation

1.3. Require function:

1.3.1. User management

- Divided into 3 main groups:
  - Customer group
  - Hotel owner group
  - Admin group

1.3.2. Functions for administrators

- Be given a separate account
- Manage user accounts: view, edit, delete

1.3.3. Functions for hotel owners

- Log in, register an account
- Update hotel information: check-in and check-out time, address, updated room availability

1.3.4. Functions for customers

- Log in, register to your account
- Manage personal information, upload avatars
- View hotel details
- Search for hotels

- Directions to the hotel
- Evaluate the hotel after experiencing the stay

CHAPTER 2. SOLUTION DESIGN

CHAPTER 3. SOLUTION IMPLEMENTATION

CHAPTER 4. TESTING AND EVALUATION

C. CONCLUSION

TÀI LIỆU THAM KHẢO

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PHỤ LỤC

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