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\documentclass{article}

\usepackage[utf8]{inputenc}

\usepackage{graphicx}

\usepackage{xcolor}

\usepackage{amsmath}

\begin{document}

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{\fontsize{16}{19.2}\selectfont \textbf{D.K.T.E. Society’s Textile and Engineering Institute,\\

Ichalkaranji.\\[0.5cm]}} % Change the font size here

{\fontsize{14}{19.2}\selectfont \textbf{(An Autonomous Institute, Affiliated to Shivaji University, Kolhapur)\\

Accredited with ‘A+’ Grade by NAAC}}\\[0.5cm]

\textcolor{violet}{\fontsize{14}{19.2}\selectfont \textbf{Department of Computer Science \& Engineering (AI)\\[0.2cm]

2023-2024}}\\[1cm]

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\\

{\fontsize{13}{19.2}\selectfont \textbf{THE SRS AND DESIGN DOCUMENT\\

ON}}\\[0.18cm]

{\fontsize{15}{19.2}\selectfont\ TRAVEL MANAGEMENT SYSTEM\textup{}”}\\[1.5cm]

{\fontsize{14}{19.2}\selectfont \textbf{Under the guidance of}\\[0.5cm]}

{\fontsize{12}{19.2}\selectfont \textbf{ Mrs. Vanchala Sutar}}\\[1cm]

{\fontsize{14}{19.2}\textbf{Submitted By:}}\\[0.5cm]

{\fontsize{12}{19.2}\textcolor{teal}{\fontsize{12}{19.2}\selectfont \quad Shravani Ainapure\quad\quad\quad\quad\quad\quad\quad22UAI003}}\\

{\fontsize{12}{19.2}\textcolor{teal}{\fontsize{12}{19.2}\selectfont \quad Pranita Chougule\quad\quad\quad\quad\quad\quad\quad 22UAI016}}\\

{\fontsize{12}{19.2}\textcolor{teal}{\fontsize{12}{19.2}\selectfont \quad Sanika Gadade\quad\quad\quad\quad\quad\quad\quad 22UAI024}}

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2023-2024}}\\[1cm]

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\textbf{Shravani Ainapure} \hspace{6cm} \textbf{22UAI003}\\[0.5cm]

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\textbf{Pranita Chougule} \hspace{6cm} \textbf{22UAI016}\\[0.5cm]

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\textbf{Sanika Gadade} \hspace{6cm} \textbf{22UAI024}\\[0.5cm]

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Have successfully completed the SRS and Design work,of the mini project part-II entitled \\

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\textbf{" TRAVEL MANAGEMENT SYSTEM"} \\

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In partial fulfillment for S.Y.B.Tech. CSE(AI) academics. This is the record of their work carried out during academic year 2023-2024.

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\textbf{Date:} {\hspace{7cm}} \textbf{Place:}\text{ICHALKARANJI}

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\textbf{Mrs. Vanchala Sutar} \\

\text{[PROJECT GUIDE]} \hspace{4cm}

{[EXTERNAL EXAMINER]}

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\text{[HOD]} \hspace{8cm} \text{[DIRECTOR]}

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\tableofcontents

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\section{Introduction} \label{sec:introduction}

% Introduction starts here

The Tours and Travel Management System is awebbased application.The main purpose of“Tours and travels managementsystem ”is to provide a convenient way for a customer to book hotels,flight,train and bus for tour purposes.

The objective of this project is to develop a system that automates the processes and activities of a travel agency.In this project,We will make an easier task of searching places and for booking train,flight o rbus..In the present system a customer has to approach various agencies to find details of places and to book tickets.This of ten requires a lot of time and effort.We provide approach skill stocritically examine how a tourist visits and its ability tooper ate inan appropriate way when dealing withth econsequences of tourism,locally, regionally,

and nationally including visitor security and ecological influences.It is

tedious for a customer toplana particular journey and have it executed properly.

The project‘Tours and Travels Management System’is developed to replace the

currently existing system,which he lpsin keeping records of the customer details

of destinationas well as payment received.

This application will bevery useful for the travel agencies to manage all their

details regarding the tours and travel with greatease.

% Introduction ends here

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\section{Problem Statement} \label{sec:problem_statement}

% Problem statement starts here

To develop the travel management system, an online booking portal on the internet, providing facilities for online booking of hotels and transportation for customers. Various services are offered by the system to cater to the needs of traveling customers.

% Problem statement ends here

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\section{Problem Description} \label{sec:problem_description}

% Problem description starts here

With the rapid advancement of internet-based technology, online booking services have come as a great relief to most travel managers. Most traveling agencies, as well as other companies engaged in the traveling business, now have on their website online ticketing booking portals. From this webpage, one can easily book and pay for tickets online.

Travel Management System (TMS) is an online system that utilizes the advantages of the internet to provide travel services ranging from bus tickets to conveyance and hotel booking for customers from their homes. TMS provides a simple web interface to make the travel request and services booking process easy. All users have access to a web form to book their travel in a few mouse clicks.

The two main advantages for travelers are convenience and a more secure way of traveling. Under the traditional system, most travelers have to carry physical tickets given to them from the counter at all times of traveling. With e-ticketing, all associated information will be stored digitally in a central database, and therefore, there are no chances of the traveler losing them or having them stolen. And also, as the rates are fixed, there are no needs to worry about bargaining or being overcharged.

% Problem description ends here

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\section{Requirement Specification} \label{sec:requirement_specification}

% Requirement specification starts here

\subsection{Product Perspective}

This Travel Management System is a self-contained system that manages activities related to travel services. Due to improperly managed details, travel agencies face difficulties in accessing past data as well as managing present data. The fully functional automated travel management system developed through this project will eliminate the disadvantages caused by manual systems by improving reliability, efficiency, and performance. The usage of a database to store customer, employee, and booking details will accommodate easy access, retrieval, search, and manipulation of data. Access limitations provided through access privilege levels will enhance the security of the system. The system will facilitate concurrent access and convenient management of travel activities.

\subsection{System Interfaces}

\begin{itemize}

\item \textbf{User Interfaces:} This section provides a detailed description of all inputs into and outputs from

the system. It also gives a description of the hardware, software and

communication interfaces and provides basic prototypes of the user interface.

The protocol used shall be HTTP.

The Port number used will be 80.

There shall be logical address of the system in IPv4 format.

\item \textbf{Hardware Interfaces:} 1) Laptop/Desktop PC-Purpose of this is to give information when Patients ask

information about doctors, medicine available lab tests etc. To perform such

Action it need very efficient computer otherwise due to that reason patients

have to wait for a long time to get what they ask for.\\

2)Laser Printer (B/W) - This device is for printing patients' info etc.\\

3)Wi-Fi router - Wi-Fi router is used to for internetwork operations inside of a

hospital and simply data transmission from pc's to sever.

\item \textbf{Software Interfaces:} JDK 1.8 - Java is fast, secure, and reliable. From laptops to data centers, game

consoles to scientific supercomputers, cell phones to the Internet,

Mysql server - Database connectivity and management

OS Windows 7/8/8.1- Very user friendly and common OS

JRE 1.8 - JAVA Runtime Environment for run Java Application and System

\end{itemize}

\subsection{System Specification}

\begin{itemize}

\item \textbf{H/W Requirement:}

Core i5 processor\\

2GB Ram.\\

20GB of hard disk space in terminal machines\\

1TB hard disk space in Server Machine\\

\item \textbf{S/W Requirement:}

Windows 7 or above operating system\\

JRE 1.8\\

Mysql server\\

\end{itemize}

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\section{Requirement Analysis} \label{sec:requirement_analysis}

% Requirement analysis starts here

\subsection{User Requirements}

\begin{itemize}

\item \textbf{Login:} Users must login to the system with their personal login details to book tickets for traveling

The login process requires:\\

1.Username\\

2.User email ID\\

3.User phone number\\

4.User address\\

5.User age\\

6.User gender

\item \textbf{Clear Communication:} Information presented on the travel booking portal should be concise, accurate, and easy to understand, catering to users with varying levels of travel knowledge

\item \textbf{Accessibility:} The travel booking portal should be accessible to all users, including those with disabilities, by following WCAG guidelines and implementing features such as alternative text for images and keyboard navigation.

\item \textbf{Mobile Responsiveness:} The travel booking portal should be responsive and optimized for various screen sizes, ensuring a seamless user experience across desktops, tablets, and smartphones.

\item \textbf{Appointment Management:} \\Users should be able to easily search for, select, and book travel services such as flights, hotels, and transportation.\\

Users should have the option to view details of their bookings, including itinerary, payment status, and booking history.\\

Users should be able to modify or cancel bookings as needed, with any associated fees clearly communicated.\\

Automated confirmation emails or SMS notifications should be sent to users upon successful booking, modification, or cancellation.

\end{itemize}

\subsection{System Requirements}

\begin{itemize}

\item \textbf{Performance:} The travel management system should be capable of handling high volumes of traffic and concurrent user sessions without experiencing slowdowns or crashes.\\

Response times for search queries, booking requests, and other user interactions should be optimized to ensure a smooth user experience.

\item \textbf{Security:} Robust security measures should be implemented to protect sensitive customer data, including personal information and payment details.\\

Encryption of data in transit and at rest should be enforced to prevent unauthorized access or interception of data.

\item \textbf{Integration:} The travel management system should integrate seamlessly with existing systems and third-party APIs, such as airline reservation systems, hotel booking platforms, and payment gateways.\\

Integration with external systems should enable real-time data synchronization and ensure consistency of information across different platforms.

\item \textbf{Scalability:} The architecture of the travel management system should be designed to scale horizontally and vertically to accommodate future growth and changes in technology.

Scalability features such as load balancing, auto-scaling, and distributed caching should be implemented to ensure optimal performance and resource utilization under increasing workload.

\end{itemize}

% Requirement analysis ends here

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\section{Stakeholders} \label{sec:stakeholders}

% Stakeholders analysis starts here

\subsection{Primary Stakeholders}

\begin{enumerate}

\item \textbf{Travel Administration:} The primary stakeholder responsible for overseeing the development and maintenance of the travel management system. They are concerned with ensuring that the system accurately represents the agency's brand, services, and values. Additionally, they may set strategic goals and objectives for the system, such as increasing customer engagement or improving operational efficiency

\item \textbf{Travel Agents:} Travel agents are key stakeholders who will interact with the system on a daily basis. They require access to accurate and up-to-date information about available travel services, prices, and promotions. Moreover, they may provide input on the design and functionality of the system to better support their sales processes and customer interactions

\item \textbf{Travelers:} Travelers are essential stakeholders who rely on the system to access travel services and information. They expect the system to be user-friendly, informative, and accessible, allowing them to search for and book flights, hotels, transportation, and activities easily. Traveler feedback and satisfaction are critical for the success of the system

\end{enumerate}

\subsection{Secondary Stakeholders}

\begin{enumerate}

\item \textbf{IT Department:} The travel agency's IT department is responsible for managing the technical infrastructure and supporting the development and maintenance of the system. They play a crucial role in ensuring the security, reliability, and performance of the system, as well as implementing any necessary integrations with existing systems

\item \textbf{Regulatory Agencies:} Regulatory agencies, such as government departments of tourism and transportation authorities, may have an interest in ensuring that the system complies with relevant laws and regulations governing travel services and customer rights. They may require certain disclosures or safeguards to protect traveler data and ensure ethical standards are me

\item \textbf{Third-party Service Providers:} Third-party service providers, such as software vendors, payment processors, and travel service aggregators, may be involved in supporting various aspects of the system's development, deployment, or maintenance. Coordination with these stakeholders is essential to ensure smooth project execution and ongoing support

\end{enumerate}

% Stakeholders analysis ends here

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\section{System Design} \label{sec:system_design}

% System design starts here

\subsection{Architecture Overview}

The system architecture for the travel management system will follow a client-server model. The client-side will consist of web browsers (such as Chrome, Firefox, and Safari) running on various devices, while the server-side will consist of a web server hosting the website and associated databases

\subsection{Frontend Design}

The frontend of the website will be developed using HTML, CSS, and JavaScript, following modern web design principles to ensure a responsive and user-friendly experience across different devices. The frontend will include:

\begin{itemize}

\item \textbf{Homepage:} A visually appealing homepage providing an overview of the travel agency's services, destinations, and latest offers.

\item \textbf{Navigation Menu:} Clear and intuitive navigation menus to help users easily find the information they need, with dropdown menus for accessing different sections of the website.

\item \textbf{Service Pages:} Individual pages dedicated to describing various travel services offered by the agency, including descriptions, benefits, and frequently asked questions.

\item \textbf{Doctor Directory:} A searchable directory of destinations, allowing users to filter by location, type of travel (e.g., adventure, leisure), or specific attractions.

\item \textbf{Appointment Booking:} An online booking system integrated into the website, allowing users to search for and book flights, hotels, transportation, and activities based on availability and preferences.

\item \textbf{Contact Form:} A contact form for users to submit inquiries, feedback, or booking requests, with fields for capturing relevant information such as name, email, phone number, and message.

\end{itemize}

\subsection{Backend Development}

The backend of the website will be built using server-side technologies such as Node.js and Express.js, providing the necessary functionality for handling user requests, processing data, and interacting with databases. The backend will include:

\begin{itemize}

\item \textbf{API Endpoints:} RESTful API endpoints for managing user authentication, booking requests, contact form submissions, and other backend functionalities.

\item \textbf{Database Management:} Integration with a relational database management system (e.g., MySQL, PostgreSQL) to store and retrieve data related to bookings, destinations, user accounts, and website content.

\item \textbf{Authentication and Authorization:} Implementation of user authentication and authorization mechanisms to ensure secure access to sensitive information and features, with role-based access control for different user roles (e.g., customers, administrators).

\end{itemize}

\subsection{Infrastructure and Hosting}

The website will be hosted on a reliable and secure web hosting platform, with considerations for scalability, performance, and data backup. Additionally, HTTPS encryption will be implemented to secure data transmission between the client and server, providing an added layer of security for sensitive information.

% System design ends here

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\section{Test Plan} \label{sec:test_plan}

% Test plan starts here

\subsection{Test Objectives}

The primary objectives of the testing phase for the travel management system are to ensure functionality, usability, security, and performance. Specific test objectives include:

\begin{itemize}

\item Verify that all features and functionalities specified in the requirements are implemented correctly and perform as expected.

\item Assess the usability of the website by conducting user testing sessions to gather feedback on navigation, content organization, and overall user experience.

\item Validate the security of the website by conducting vulnerability assessments, penetration testing, and code reviews to identify and mitigate potential security risks.

\item Measure the performance of the website under various conditions, including normal usage, peak loads, and stress scenarios, to ensure responsiveness and reliability.

\end{itemize}

\subsection{Testing Approach}

The testing approach will utilize both manual and automated techniques to achieve comprehensive test coverage. The following methods will be employed:

\begin{itemize}

\item \textbf{Functional Testing:} Manual testing of each functional requirement specified in the requirement specification document to verify its correctness and completeness.

\item \textbf{Usability Testing:} User testing sessions with representative users to evaluate ease of use, booking flow, and overall user experience.

\item \textbf{Security Testing:} Automated vulnerability scanning and manual penetration testing to identify and remediate security vulnerabilities.

\item \textbf{Performance Testing:} Load testing, stress testing, and endurance testing using appropriate tools to assess system performance under various conditions.

\end{itemize}

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\subsection{Test Scenarios}

The following test scenarios will be executed during the testing phase:

\begin{itemize}

\item \textbf{Functional Testing:}

\begin{itemize}

\item Verify that all links and navigation menus lead to the correct pages.

\item Test the booking system to ensure flights, hotels, and other services can be booked, modified, and canceled successfully

\item Validate the payment processing functionality by simulating transactions and verifying payment completion

\end{itemize}

\item \textbf{Usability Testing:}

\begin{itemize}

\item Observe users as they navigate through the system and book travel to identify any usability issues or pain points

\item Collect feedback from users regarding the clarity of information, ease of finding desired content, and overall satisfaction with the website.

\end{itemize}

\item \textbf{Security Testing:}

\begin{itemize}

\item Scan the website for common security vulnerabilities, such as SQL injection, cross-site scripting (XSS), and CSRF attacks.

\item Perform manual penetration testing to identify potential security weaknesses and validate the effectiveness of security controls.

\end{itemize}

\item \textbf{Performance Testing:}

\begin{itemize}

\item Simulate multiple concurrent users accessing the website to assess its responsiveness and performance under load.

\item Conduct stress testing by increasing the load on the website beyond its capacity to identify performance bottlenecks and scalability issues.

\end{itemize}

\end{itemize}

\subsection{Test Deliverables}

The following deliverables will be produced as part of the testing phase:

\begin{itemize}

\item Test Plan Document: Detailed plan outlining the testing approach, objectives, methodologies, and test scenarios.

\item Test Cases: Document containing individual test cases for each functional requirement, including preconditions, steps, expected results, and actual results.

\item Test Reports: Summary reports summarizing the results of each testing phase, including any issues identified, their severity, and proposed resolutions.

\item User Feedback Report: Compilation of feedback gathered from usability testing sessions, along with recommendations for improving the user experience.

\end{itemize}

% Test plan ends here

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\caption{Data flow Diagram}

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\section{References} \label{sec:references}
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% References ends here

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