Software Requirements Specification

for

Climate Change Monitoring and Analysis

Version 1.0 approved Prepared by:

Ankit Rajput	AP21110010918
Arham Mohammed Shaik	AP21110010919
Chakrapani Maale	AP21110010920
Goli Jashit Rajiv	AP21110010921

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1 Introduction

1.1 Purpose

This document outlines the plan for creating a useful Climate Change Monitoring and Analysis system. With the growing concerns about climate change, we need a tool that can keep track of essential information like temperature changes, sea levels, and extreme weather events. This system will use weather stations and satellites to gather accurate data. It is not just about collecting information but also understanding it better. By using smart computer programs, we can predict future climate trends and figure out how climate change affects nature.

1.2 Document Conventions

- Font: Times New Roman
- Headings: Bold, size: 18pt
- Subheadings: bold, size: 14pt
- Lists: Bullet points for items, numbered for procedures.

1.3 Intended Audience and Reading Suggestions

The intended audience includes developers, project managers, stakeholders, and any parties involved in the development and use of the Climate Change Monitoring and Analysis system.

1.4 Product Scope

Climate change Monitoring and Analysis enables any user to use the system to monitor the climate changes in his area and be aware of any possible natural threats like high wind, storm, tornados, or cyclones in coastal areas.

2. Overall Description

3.

2.1 Product Perspective

The Climate Change Monitoring and Analysis system will operate as a standalone application interacting with external climate data sources and databases.

2.2 Product Functions

- Data collection from various climate monitoring sources.
- Real-time data analysis and visualization.
- Historical data storage and retrieval.
- Trend analysis and prediction tools.

2.3 User Classes and Characteristics

- Climate Scientists
- Environmental Researchers

- Policy Makers
- General Public

2.4 Operating Environment

The system will operate on a web-based platform, compatible with major browsers (Chrome, Firefox, Safari).

2.5 Design and Implementation Constraints

- Compliance with environmental data standards
- Integrating with existing climate monitoring systems

2.6 Assumptions and Dependencies

- Availability of reliable climate data sources
- Internet connectivity for real-time data updates

3. External Interface Requirements

3.1 User Interfaces

The system will provide an intuitive and responsive web-based interface for users to interact with climate data and analysis tools.

3.2 Hardware Interface

The system will be compatible with standard web browsers and will not require specialized hardware.

3.3 Software Interfaces

- Integration with external climate data APIs and databases.
- Predictions based on user input data.

3.4 Communications Interfaces

- Web browser Network server communications protocols

4. System Features

- The system shall collect real-time climate data from various sources and the user input.
- Integrate data from external databases and sources to provide a comprehensive dataset for analysis.
- Validity checks on inputs
- Relationship of outputs to inputs

4.1 Use Cases

- Login required to use features.
- Users can use the system to know weather conditions in any area.

- Users can also use the predictive system to analyze weather conditions based on their inputs.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- Response time for data visualization: <3 seconds
- System availability: 99%

5.2 Security Requirements

- Users are advised to not share their login information with others.

5.3 Software Quality Attributes

- Reliability: Minimal system downtime.

6. Other Requirements

- Well structured database to store the information from the portal.
- The databases are like well-organized libraries that keep track of valuable information about the environment.
- By organizing this information, these databases help experts study and understand climate change better, making it easier to make decisions and produce effective ways to reduce its impact.

Result:

Thus, the Software Requirements Specification for Climate change Monitoring and Analysis Version

1.0 is successfully done.

Evaluation by Faculty Members:

Criteria	**Marks scored by student**
Objective (20)	
Coding (30) / Purpose of Static UML Diagrams	
Compilation and Debugging (30) / Purpose of Dynamic UML Diagrams	
Generalization, Execution and Result (10) /	
Documentation (10)	
Total Marks (100)	

Faculty Signature with date	