SRS Accuweather

Software Engineering (Lovely Professional University)

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SOFTWARE REQUIREMENT SPECIFICATION FOR Accuwheather.COM

Submitted by-Utkarsh dubey

Submitted to –Mr.Jimmy siNGLA

Reg.no-11813902

Section-K18XC

UTEP Software Engineering Weather History Software Requirements Specification

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Version 1.0

UTEP Software Engineering Weather History Software Requirements SpecificatisSS
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Introduction

1.1. Purpose and Scope of Project :-

The purpose of the Software Requirements Specification (SRS) document is to provide a clear and precise description of the functionality of the Weather History (WH) system. The SRS will serve as As reference for the development teams during the design, implementation and verification

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phases; the SRS is also an agreement between the client and the development teams regarding the functionality the finished product will perform. In recent years, the Earth has experienced drastic climate changes. It has become of great importance to understand and study these changes and their impact on the human race. Scientists all over the globe including at the Systems Ecology Lab at University of Texas at El Paso (UTEP) have put Enormous amount of effort into gathering and analyzing weather data. Currently, the UTEP research team utilizes the Circumarctic Environmental Observatories Network (CEON) web-based mapping and information system. CEON allows access to near real-time reports of earthquakes, climate data, and webcam images. The success of this powerful application has inspired interest in extending both the functionality of the system and the geographical scope to which it applies. Weather History system will serve as an extension to CEON which will allow users to access historical climate data from weather stations from across the North American continent.

Software Requirements Specification
1. Introduction
This section describes the purpose, intended audience, and overview of the document as well as the
scope and intended use of the systems being developed.
1.1. Purpose and Scope of Product

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from weather stations from across the North American continent.
To provide scientists with enough information to understand the changes in the climate, the WH system will provide means to access historical data from historical weather data sources such as National Oceanic and Atmospheric Administration (NOAA). The tool will search for historical weather data specified by a list of weather stations, types of weather data to be collected, and a time
range supplied by an end-user. This tool will provide a means for environmental scientists,
researchers, university professors, students, and the general public to have easy access to historical weather data for further analysis and therefore will improve the research community's ability to understand and make inferences about certain phenomena regarding our climate system.
1.1. Intended Audience
The intended audience of this document is the client, the Guidance Team, and the software development teams.
1.2. Overview
The SRS is divided into six major sections: Introduction (Section 1), General Description (Section 2),
External Interface Requirements (Section 3), Behavioral Requirements (Section 4), Non-behavioral
Requirements (Section 5), and Other Requirements (Section 6). This overview describes Section 2 through Section 6 of the SRS.

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Section 2 provides a general description of the system including its overall structure and
functionality, users and actors of the systems, the operating environment in which the system will run,
existing constraints on the system, and assumptions and dependencies.
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Software Requirements Specification Section 3 describes the specification of requirements for interfaces between the system and external components, both human and other systems. It contains specifications with respect to user, software, hardware, and communication interfaces. Section 4 includes five subsections. It describes the behavioral requirements of the system. The requirements are organized in the following categories: same class of user, related real-world objects, stimulus, related features, and functional requirements. Section 5 includes three subsections. It outlines the non-behavioral requirements of the system which consists of performance, security and qualitative requirements with Other Requirement Software Requirements Specification1

Software Requirements Specification
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existing constraints on the system, and assumptions and dependencies.
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1.3.Definitions, Acronyms, and Abbreviations:-

This section describes the definitions, acronyms and abbreviations that are useful for understanding the contents of this document.
1.3.1. Definitions

Actor An actor is any outside entity that interacts with WH system.
Adobe Flex An open source framework for building and maintaining web applications.
Client Program web service client that requests data. Initially, we anticipate the client tobe the descriptive statistics system for CEON. This actor provides the necessary input to initiate a request for historical weather data or a list of weather stations.
Historical Weather Data Source An organization that provides historical weather data. An example of historical weather data source is NOAA.
Local Database The database where WH system will be storing historical data.
PHP A scripting language designed for producing dynamic web pages.
PostgreSQL An object-relational database management system

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R A language and environment for statistical computing and graphics.
Web service A software system designed to support interoperable machine-to-machine interaction over a network. Table 1.3.1ACRONYM/ABBREVIATION
CEON:- Circum-arctic Environmental Observatories Network
DFD:-Data Flow Diagram
e.g.:- For example
ER:-Entity Relationship Diagram
i.e. :-Such as
ID :-Identification
NOAA:-National Oceanic and Atmospheric Administration
1.4 References
[1] Tweedie, Craig. First interview. 8 September 2009.
[2] Tweedie, Craig. MK Ultra and Tech Nebula interview. 21 September 2009.
[3] Tweedie, Craig. Guidance team interview. 15 January 2010.
[4] Team MK Ultra, Team Tech Nebula, Team Secui Prorsus. SRS, December 2009.Software

2.Overall Description:-

This section describes the system being developed with respect to the main features of its functionality as well as the intended user characteristics.
2.1. Product Perspective:-

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Weather History tool is an extension to the CEON system currently being used in the UTEP Systems Ecology Lab. The CEON application provides near-real time access to environmental monitoring data streams in Arctic and has become an important tool for the study of climate change. Its success has created the desire to expand the application since CEON focuses only on the Arctic region of the globe. WH will enable this extension to allow scientists to monitor and analyze weather data from the North America region by providing access to historical weather data streams needed for statistical analysis and predictions of climate change 2.2 Product Features:-
The weather history tool will be vital to the analysis of climate data; it will provide access historical weather data necessary to perform statistical and trend analysis. In order for the tool to access these data, it must also keep knowledge of what weather stations are available for querying. The tool will also maintain a local database which is intended to reduce the number of requests to the historical weather data sources. When data is returned from sources such as NOAA it will be stored in the local database; in the event that another user requests the same data.

3.1 Functional Requirements

This section contains specific behavioral requirements for the system.
3.1.1 Same Class of User-
The server program shall have only one class of user, the Administrator, who has access to the

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Activity Log. The system shall require the Administrator to enter a valid combination of use rid and password in order to use the system

3.1.2 Related Real-world Objects Real-

worlds objects are entities with either physical or conceptual counterparts in the real world. The entity-relation diagram that motivates the real-world objects described in this section can be found in Appendix A.

3.1.3 Weather Station-

Each weather station shall have a unique ID and a unique location, which is specified by longitude and latitude. Each weather station shall have a set of instruments that collect weather data.

3.1.4 Weather Data-

Weather data is recorded for a weather station at a given time. The types of instruments possible for a weather station shall include those that measure temperature in C, relative humidity, wind speed in mph, wind direction, precipitation, weather condition (e.g., clear, thunderstorm), wind degree, barometric pressure in mb, dew point in C, heat index in C, wind chill in C, visibility in km. A weather data element shall be identified by a weather station, a date and time, and the data value for an instrument on the weather station at that time.1.

3.1.5 Activity Log –

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The system shall keep an activity log that will list all of the following types of errors that occur within the system. The historical weather data source does not contain requested weather data. The system cannot establish a connection to the historical weather data source. The activity log shall include the following information for each entry.

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5. Non-behavioral Requirements
5.1. Performance Requirements
No performance requirements have been identified.
5.2. Security
[REQ 38] The server system shall require the Administrator to login.
[REQ 39] The system shall be delivered with a default sys admin.
[REQ 40] The system shall require the sysadmin to change password on first login.
5.3. Qualitative Requirements
5.3.1. Availability
No availability requirements have been identified.
5.3.2. Maintainability
[REQ 41] The parts of the system coded in Flex shall be coded using Adobe Flex naming convention
specified in
http://opensource.adobe.com/wiki/display/flexsdk/Coding+Conventions.
5.3.3. Portability

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[REQ 42] The user interface shall run on Microsoft Internet Explorer 8.0, Mozilla Firefox 3.5, Google Chrome 3.0, and Apple Safari 4.0

3.2 Non-functional Requirements

3.2.1 Security-

The server system shall require the Administrator to login. The system shall be delivered with a default sys admin. The system shall require the sysadmin to change password on first login.

3.2.3 Availability –

No availability requirements have been identified.

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Software Requirements Specification
OS Operating System
SRS Software Requirements Specification

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STD State Transition Diagram
TBD To Be Determined
UTEP The University of Texas at El Paso
XML Extensible Markup Language
Table 1.2 Acronyms
1.4. References
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[2] Tweedie, Craig. MK Ultra and Tech Nebula interview. 21 September 2009.
[3] Tweedie, Craig. Guidance team interview. 15 January 2010.
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