**PRACTICAL-4**

**AIM:**

Design the Software Requirement Specification (SRS) document on VLC Media Player desktop application in IEEE format only. (Excluding UML Diagram)

**THEORY:**

**What is SRS?**

* A software requirements specification (SRS) is a document that details how and what the software or system will accomplish.
* It specifies the features and functionality that the product must have in order to meet the needs of all stakeholders (business and users).
* A standard SRS includes:
* Goal
* Summary
* Specific Requirements

**Why we need SRS Document?**

* An SRS provides you with a comprehensive overview of your entire project. It establishes a single source of truth that all development teams will adhere to.
* It's your game plan, and it keeps all of your teams on the same page, from development to maintenance.

**IMPLEMENTATION:**

**SOFTWARE REQUIREMENT SPECIFICATION FOR**

**EXPLORATORY DATA ANALYSIS APPLICATION**

**VERSION 1.0 APPROVED**

PREPARED BY

PARTH N PATEL (19DCS098)

**Devang Patel Institute of Advance Technology and Research**

**18 January 2022**

Table of Contents ii

1. Introduction 1

1.1 Purpose 1

1.2 Document Conventions 1

1.3 Intended Audience and Reading Suggestions 1

1.4 Product Scope 1

1.5 References 1

2. Overall Description 2

2.1 Product Perspective 2

2.2 Product Functions 2

2.3 User Classes and Characteristics 2

2.4 Operating Environment 2

2.5 Design and Implementation Constraints 2

2.6 User Documentation 2

2.7 Assumptions and Dependencies 3

3. External Interface Requirements 3

3.1 User Interfaces 3

3.2 Hardware Interfaces 3

3.3 Software Interfaces 3

3.4 Communications Interfaces 3

4. System Features 4

4.1 System Feature 1 4

4.2 System Feature 2 (and so on) 4

5. Other Nonfunctional Requirements 4

5.1 Performance Requirements 4

5.2 Safety Requirements 5

5.3 Security Requirements 5

5.4 Software Quality Attributes 5

5.5 Business Rules 5

6. Other Requirements 5

Appendix A: Glossary 5

Appendix B: Analysis Models 5

Appendix C: To Be Determined List 6

**1. Introduction**

**1.1 Purpose**

Exploratory Data Analysis App is a web application which is intended to serve the primary purpose of data analysts. The application aims at giving a generalized view of data set which is used for data analytics. The purpose of the application is to automate the basic tasks that analysts need to perform for all the data sets before determining whether the data set is relevant for analytics or not.

**1.2 Document Conventions**

When you read this manual, certain words are represented in different fonts, typefaces, sizes, and weights. This highlighting is systematic; different words are represented in the same style to indicate their inclusion in a specific category. The types of words that are represented this way include the following:

o Regular text conventions are followed as per the IEEE Recommended Practice.

**Software Requirements Specifications standard 830-1998.**

o This style indicates that the program is an end-user application (as opposed to system software). For example: Use Chrome to browse the Web.

o This style indicates that the Products that uses windows For example: HoloLens,phones

o This style indicates that Keys: Power, Volume up

o For Reference Links : https://windows10.org

**1.3 Intended Audience and Reading Suggestions**

This document is intended and can be referred by data analysts, data scientists, machine learning engineers, big data engineers, business analysts, software developers, interns, project managers and team leaders.

**1.4 Product Scope**

The product is mainly intended to solve the issues and hassles experienced by the team while finalizing the data sets that will be used in the project. The product automates the basic steps and gives the team a sense of relief by providing the insights and basic details of the data set through the medium of visualization. The product also provides ease of use with simple interface and user-friendly functioning. The product also reduces approx. 100-120 lines of coding that the team needs to do with all the datasets so in the macro saving lots and lots of hours and energy.

**1.5 References**

* [*https://towardsdatascience.com/exploratory-data-analysis-8fc1cb20fd15*](https://towardsdatascience.com/exploratory-data-analysis-8fc1cb20fd15)
* [*https://www.geeksforgeeks.org/what-is-exploratory-data-analysis/#:~:text=Exploratory%20Data%20Analysis%20(EDA)%20is,statistical%20summary%20and%20graphical%20representations*](https://www.geeksforgeeks.org/what-is-exploratory-data-analysis/#:~:text=Exploratory%20Data%20Analysis%20(EDA)%20is,statistical%20summary%20and%20graphical%20representations)*.*
* *https://en.wikipedia.org/wiki/Exploratory\_data\_analysis*
* *https://r4ds.had.co.nz/exploratory-data-analysis.htm*

**2. Overall Description**

**2.1 Product Perspective**

The EDA app is a first-generation application i.e., it has no predecessors. It is a new self-contained product. The product is supposed to be licensed software which will be free to use. It is a web-based implementing system which implements and adhere client-server model. The product has a simple easy to use interface and has potentially no learning curve for its usage. The EDA of the uploaded data set will be shown in the same window and that too in simple manner so as to avoid the complexity that might arise during the process.

**2.2 Product Functions**

The EDA app codenamed as “project 6” is the first release. The build number is 1.0. One thing to point out is that build number and version is same for now but it will be changed as the product will undergo scheduled updates.

* The functionalities provided in the application:
* Support to wide range of files
* Easy upload process
* Support to upload from google drive
* Clean and clear visualization options
* Coloured graphs as a part of output for better analysis

**2.3 User Classes and Characteristics**

The following is not applicable to the project.

**2.4 Operating Environment**

The basic hardware requirement is to have a processor of 2.1 GHz and recommended RAM of 4 GB for smooth processing. RAM size less than 4 GB will also do the job but patience can be tested. For storage options, less than 1 GB of hard disk space will be required in case if one opts to download the report. The app is compatible with all the major operating systems like Windows, Linus, Chrome OS, MAC OS etc.

* For windows, it is recommended to have at least windows 8.1 for enhanced experience.
* For Linux, ubuntu linux or kali linux is recommended.
* Web browser like Chrome or Edge will be required.
* The app is compatible with all the web browsers except the internet explorer.

**2.5 Design and Implementation Constraints**

In order for software to function properly, only .csv files or excel files need to be uploaded.

The file should not be more than 15 GB in size.

**2.6 USER ASSUMPTIONS AND DEPENDENCIES**

* The product needs the following access for operation:
* Download access
* Access to browse Files
* Access to upload Files via web browser

**3 EXTERNAL INTERFACE REQUIREMENTS**

**3.1 USER INTERFACES**

**UPLOAD SECTION**

* The upload section plays an important role in the product as the .csv file will be uploaded

**DISPLAY SECTION**

* The display section is the place where the results of the EDA will be displayed.

**3.2 HARDWARE INTERFACES**

* Only the recommended configuration (basic requirements of a computer system)
* No other specific hardware is required for the product.

**3.3 SOFTWARE INTERFACES**

* Browser to load and view the web pages
* Operating System

**4 SYSTEM FEATURE**

**4.1 TIME SAVER**

* The product saves the crucial time of analysts as the general EDA required in order to determine whether the dataset is relevant or not is saved.

**4.2 DETAILED ANALYTICS**

The product gives generalized but detailed report of the analytics of the uploaded dataset.

**4.3 CRISP VISUALIZATION**

The product gives crisp and clear visualization of the data in the form of graphs and other modes of visualization.

**4.4 DETAILED EXPLANATION**

The product gives a detailed explanation of the data in a generalized manner.

**5 OTHER NON-FUNCTIONAL REQUIREMENTS**

**5.1 Error Handling**

The product shall handle the expected and unexpected error in ways that prevent loss in the quality of analytics.

**5.2 Performance Requirements**

The system shall accommodate and withstand the max capacity without any crash and degradation of the quality of the analytics

**Appendix A: Glossary**

**EDA**

* exploratory data analysis is an approach of [analyzing](https://en.wikipedia.org/wiki/Data_analysis" \o "Data analysis) [data sets](https://en.wikipedia.org/wiki/Data_set) to summarize their main characteristics, often using [statistical graphics](https://en.wikipedia.org/wiki/Statistical_graphics) and other [data visualization](https://en.wikipedia.org/wiki/Data_visualization) methods.

**Constraint**

* In controls that involve user input, such as text boxes, input constraints are a valuable way to prevent errors. For example, if the only valid input for a particular control is numeric, the control can use appropriate value constraints to enforce this requirement.

**Error**

* A state in which a problem has occurred.

**APPENDIX C: TO BE DETERMINED LIST**

* Planning and adding of data cleaning features.
* Improvision of User Interface
* Upgrading the data capacity
* Adding a new panel for twitter sentiment analysis

**CONCLUSION:**

By performing the practical, I learnt about the basics of srs document, it’s importance, why we need it and how to make it.