**CHAPTER 5**

**SOFTWARE DESCRIPTION**

A software requirements specification (SRS) is a description of a [software system](https://en.wikipedia.org/wiki/Software_system) to be developed. It lays out [functional](https://en.wikipedia.org/wiki/Functional_requirement) and [non-functional requirements](https://en.wikipedia.org/wiki/Non-functional_requirements), and may include a set of [use cases](https://en.wikipedia.org/wiki/Use_case) that describe user interactions that the software must provide. Software requirements specification establishes the basis for an agreement between users and RPA bot on what the software product is to do as well as what it is not expected to do. Software requirements specification permits a rigorous assessment of requirements before design can begin and reduces later redesign. It should also provide a realistic basis for estimating product costs, risks, and schedules.

**5.1 FRONT END**

The front end is designed using Uipath which includes a collaborative platform for bot creating RPA bot. Here all the bot tools are integrated and it allows automatic detection of entities. It uses NLP and Gensim.

**5.1.1 PYTHON**

Python is a widely used general-purpose, high level programming

language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code.

Python is a programming language that lets you work quickly and integrate systems more efficiently.

There are two major Python versions: **Python 2 and Python 3**. Both are quite different.

* + - 1. **Features**
* **Easy to code**: Python is high level programming language. Python is very easy to learn language as compared to other language like c, c#, java script, java etc. It is very easy to code in python language and anybody can learn python basic in few hours or days. It is also developer-friendly language.
* **Python is Portable language**: Python language is also a portable language. for example, if we have python code for windows and if we want to run this code on other platform such as Linux, Unix and Mac then we do not need to change it, we can run this code on any platform. Faster: It is faster than other scripting language e.g. asp and jsp.
* **Large Standard Library** : Python has a large standard library which provides rich set of module and functions so you do not have to write your own code for every single thing. There are many libraries present in python for such as regular expressions, unit-testing, web browsers etc.

**5.1.1.2Advantages**

* **Presence of Third Party Modules**: The Python Package Index (PyPI) contains numerous third-party modules that make Python capable of interacting with most of the other languages and platforms.
* **Extensive Support Libraries**: Python provides a large standard library which includes areas like internet protocols, string operations, web services tools and operating system interfaces. Many high use programming tasks have already been scripted into the standard library which reduces length of code to be written significantly.
* **Productivity and Speed**: Python has clean object-oriented design, provides enhanced process control capabilities, and possesses strong integration and text processing capabilities and its own unit testing framework, all of which contribute to the increase in its speed and productivity. Python is considered a viable option for building complex multi-protocol network applications.

**5.1.2 UIPATH**

UiPath Studio – a tool that enables you to design automation processes in a visual manner, through diagrams. UiPath Robot - executes the processes built in Studio, as a human would. UiPath Orchestrator - a web application that enables you to deploy, schedule, monitor and manage Robots and processes.

**5.1.2.1 Features**

* Uipath helps to perform the activity by using the drag and drop features.
* It can be hosted in cloud environments or virtual terminals.

Scraping solution that works with any application like,.Net Java, Flash, PDF, Legacy, SAP, with absolute accuracy.

**5.1.2.2 Advantages**

* Increased compliance
* Best customer experience
* Productivity improvement
* Good management capabilities
* Machine learning capabilities

**5.1.3 NLP**

Natural-language processing (NLP) is an area of computer science and artificial intelligence concerned with the interactions between computers and human (natural) languages, in particular how to program computers to fruitfully process large amounts of natural language data.

**5.1.3.1 Advantages**

* No training.
* Relives burden of learning syntax.

**5.1.4 GENSIM**

Gensim is a free Python library designed to automatically extract semantic topics from documents, as efficiently (computer-wise) and painlessly (human-wise) as possible.

Gensim is designed to process raw, unstructured digital texts (“plain text”).

Features

* Memory independence – there is no need for the whole training corpus to reside fully in RAM at any one time (can process large, web-scale corpora)
* Memory sharing – trained models can be persisted to disk and loaded back via mmap. Multiple processes can share the same data, cutting down RAM footprint.
* Efficient implementations for several popular vector space algorithms, including

**5.2 BACK END**

The back end is designed using excel, whose primary function is to store data and retrieve it later, as requested by other software applications.

**5.2.1 Excel**

Microsoft Excel is a spreadsheet program that is used to record and analyse numerical data. Think of a spreadsheet as a collection of columns and rows that form a table. Alphabetical letters are usually assigned to columns and numbers are usually assigned to rows. The point where a column and a row meet is called a cell. The address of a cell is given by the letter representing the column and the

Excel offers at least three ways to set up data so your reports and analyses can use it easily as a reliable data source. Excel offers three general ways to arrange data in your spreadsheet so you can use it as a database with your worksheet formulas: Simple (or "Gray Cell") Tables, which I've used since Excel 2.0.

**5.2.2 Features**

* PivotTables summarise large amounts of Excel data from a database that is formatted where the first row contains headings and the other rows contain categories or values.
* Conditional formatting, as its name suggests, changes the format of a cell dependent on the content of the cell, or a range of cells, or another cell or cells in the workbook.
* Sorting and filtering your data will save you time and make your spreadsheet more effective.

**5.2.3 Advantages**

* Easy data entry and operations
* Accurate comparisons and analysis options
* Allows graphical representation of data
* Compatible with other business applications
* Ready to use formulas