

CHAPTER – 4

SYSTEM REQUIREMENTS

A software requirements specification (SRS) is a description of a software system to be developed. It is modeled after business requirements specification (CONOPS), also known as a stakeholder requirements specification (SRS). The software requirements specification lays out functional and non-functional requirements, and it may include a set of use cases that describe user interactions that the software must provide.

Software requirements specification establishes the basis for an agreement between customers and contractors or suppliers on how the software product should function (in a market-driven project, these roles may be played by the marketing and development divisions). Software requirements specification is a rigorous assessment of requirements before the more specific system design stages, and its goal is to reduce later redesign. It should also provide a realistic basis for estimating product costs, risks, and schedules. Used appropriately, software requirements specifications can help prevent software project failure.

The software requirements specification document lists sufficient and necessary requirements for the project development. To derive the requirements, the developer needs to have clear and thorough understanding of the products under development. This is achieved through detailed and continuous communications with the project team and customer throughout the software development process.

The SRS may be one of a contract deliverable Data Item Descriptions or have other forms of organizationally-mandated content.

4.1 Functional Requirements

Functional requirements describe what the system should do. It essentially specifies something that the system should do. Typically, functional requirements will specify a behaviour or function. The major functional requirements of the system are as follows:

1. Device must be able to capture video from webcam so that it is sent for further processing.
2. Device should be able to read image, xml, dataset and other necessary files stored in the system.
3. In order to process each image pixel during image pre-processing, the device must have high processing capabilities.
4. Device must be able to interact with user so that the process from capturing the image to performing the command is smooth.
5. Device should have the capability to perform certain action based on the recognised gesture.

4.2 Non-Functional Requirements

- **Performance:**

Given the high computational requirements of proof-of-work, performance is crucial for good user experience. Since the computational requirements increase as more blocks are added to the blockchain, high performance ensures a seamless user experience even as the platform grows to have a global scale.

- **Scalability:**

The security of the blockchain increases exponentially with an increase in gatekeepers, therefore the platform must scale smoothly. Scalability not only ensures security but also improves profitability. The platform is a fixed cost liability and therefore an increase in scale translates to improved revenues.

- **Security:**

Owing to the confidential nature of the transactions on the platform, extreme care must be taken to ensure security. The platform will inevitably be used by corporations to manage assets potentially worth millions of dollars. In order to retain user trust, security has to be ensured during the network transfer phase. This is done using cryptographic measures and protocols. The user also has the choice of self-hosting the encrypted file on any cloud service of choice.

- **Usability:**

The platform is designed to be as broadly appealing as possible. Therefore, usability for the target community which might involve technically laymen is of utmost importance. The user-friendly GUI is designed to be as inviting as possible. No prior expertise is expected or necessary.

- **Transparency:**

One of the primary goals of the project is to mitigate the possibility of fraud through obfuscation. To that end ensuring complete transparency of behaviour is vital. All stages of operation are discrete and clear messages regarding the progress and status must be intimated to the user.

- **Data integrity:**

The files being handled are of high value. The transaction also involves the

exchange of significant remuneration and therefore integrity of data has to be maintained at all costs.

4.3 Hardware Requirements:

- Laptop with webcam running on Windows OS

4.4 Software Requirements:

- Anaconda or Minianconda 3.0 and above
- OpenCV 4.0.1
- Amazon Web Services