**Software Requirements**

**Rasbian OS**

**Raspbian is a Debian-based computer operating system for Raspberry Pi. Since 2015 it has been officially provided by the Raspberry Pi Foundation as the primary operating system for the family of Raspberry Pi single-board computers. Raspbian was created by Mike Thompson and Peter Green as an independent project. The initial build was completed in June 2014 The operating system is still under active development. Raspbian is highly optimized for the Raspberry Pi line's low-performance CPUs.**

**Python(2.7)**

**Python is a widely used high-level programming language for general-purpose programming, created by Guido van Rossum and first released in 1991. An interpreted language, Python has a design philosophy that emphasizes code readability and a syntax that allows programmers to express concepts in fewer lines of code than might be used in languages such as C++ or Java. The language provides constructs intended to enable**

**writing clear programs on both a small and large scale.**

**Python IDLE**

**the following features: coded in 100% pure Python, using the tkinter GUI toolkit cross-platform: works mostly the same on Windows, Unix, and Mac OS X Python shell window (interactive interpreter) with colorizing of code input, output, and error messages multi-window text editor with multiple undo, Python colorizing, smart indent, call tips, auto completion, and other features search within any window, replace within editor windows, and search through multiple files (grep) debugger with persistent breakpoints, stepping, and viewing of global and local namespaces configuration, browsers, and other dialogs**

**3.1.3 Cloud**

**Cloud enables storing and accessing data and programs over the Internet instead of your computer's hard drive. ThingSpeak allows you to aggregate, visualize and analyze live data streams in the clouda s shown in fig 3.1. Some of the key capabilities of  
ThingSpeak include the ability to:**

**Easily configure devices to send data to ThingSpeak using popular IoT protoc ols. Visualize sensor data in real-time. Aggregate data on-demand from third-party sources. Use the power of MATLAB to make sense of IoT data.**

**Run your IoT analytics automatically based on schedules or events.**

**Prototype and build IoT systems without setting up servers or developing web Software.**

**3.1.4 Spreadsheets:**

**A spreadsheet is an interactive computer application for organization, analysis and storage of data in tabular form. Spreadsheets are developed as computerized simulations of paper accounting worksheets. The program operates on data entered in cells of a table. Each cell may contain either numeric or text data, or the results of formulas that automatically calculate and display a value based on the contents of other cells. A spreadsheet may also refer to one such electronic document. Spreadsheet users can adjust any stored value and observe the effects on calculated values. This makes the spreadsheet useful for "what-if" analysis since many cases can be rapidly investigated without manual recalculation.**