Raspberry Pi Based Digital Data Acquisition System.

Project presented by

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Abstract:

- The **voltage** and **current** to be measured is sensed using sensor.
- Using **ADC(**Analog to Digital Convertor),the sensed analog signal is converted to digital signal.
- The noise signal is filtered.
- Then the converted information is transferred through **wifi** or cable as a input to **Raspberry pi**.

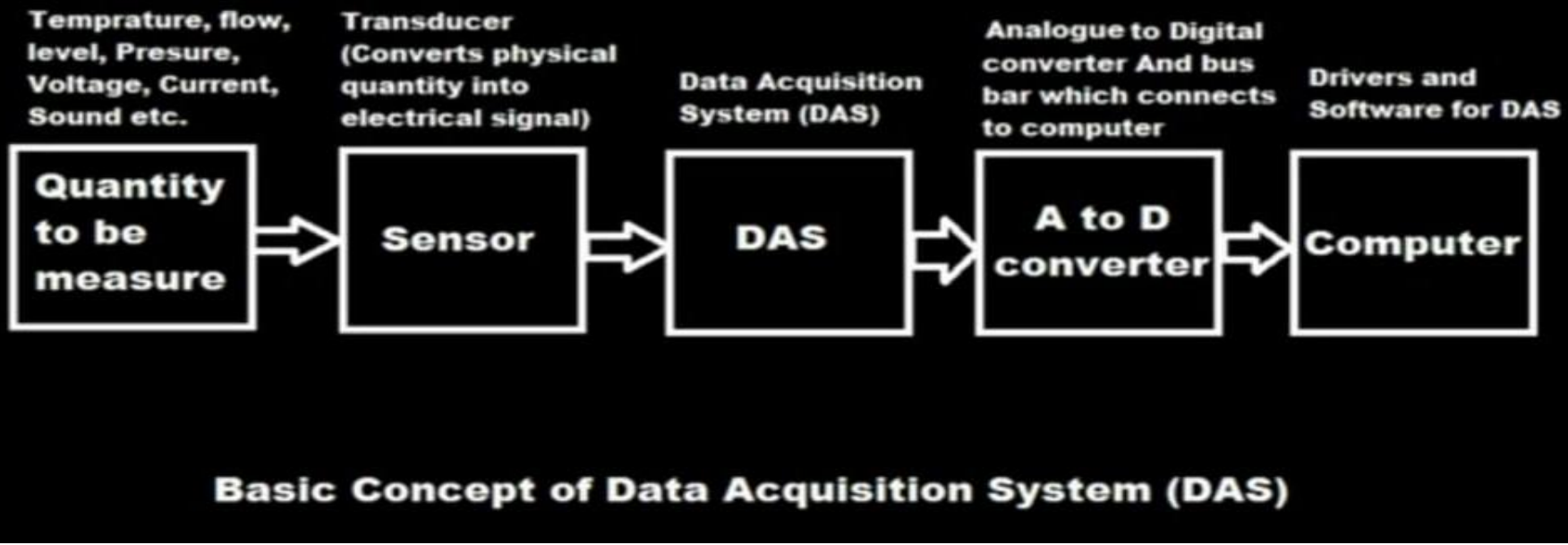
- Information is transferred from microprocessor to **Raspberry pi** through **SPI**(serial peripheral interface).
- Input is processed and displayed using **LCD** display based on criteria like **time** and **date** to the user by **GUI**(Graphical User Interface).

Description:

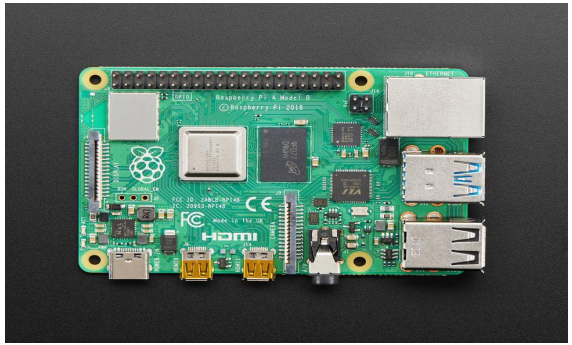
- **DAS**(Data Acquisition System) is a interface between a sensor and computer.
- The basic function of **DAS** is to convert Analogue signal from sensor to Digital via **ADC**(Analog To Digital converter) and fed to computer.
- **DAS** measures quantities it may be **Physical** or **Electrical** like temperature,flow,level,pressure,voltage,current,sound etc.

- **DAS** hardware is microcontroller and combination of **ADC**,**DAC** and **multiplexers** ,**RAM**(Random Access Memory) etc.
- For supporting DAS there is **driver software** in computer.

Basic DAS WorkFlow :

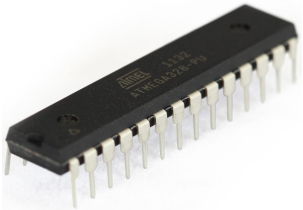


Components :

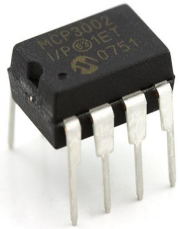


Raspberrypi

Display

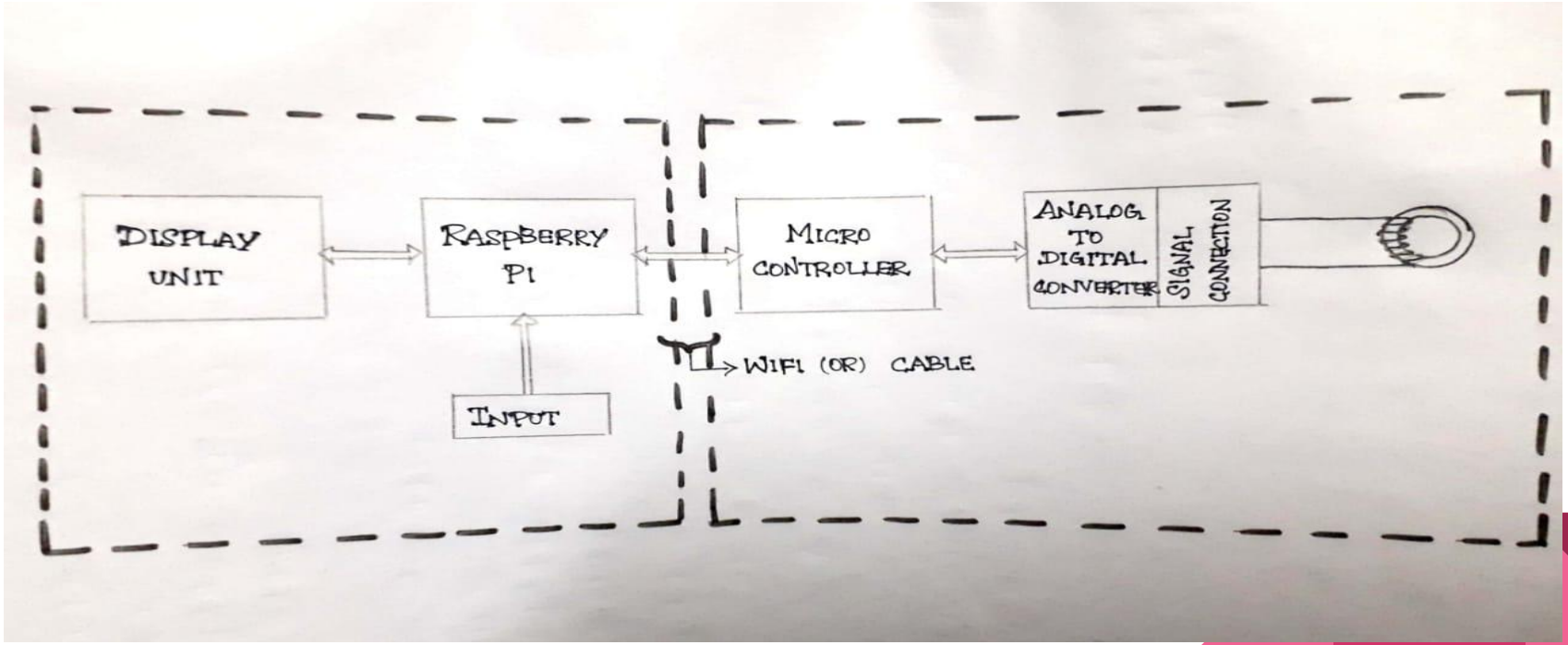


Atmega
Microcontroller

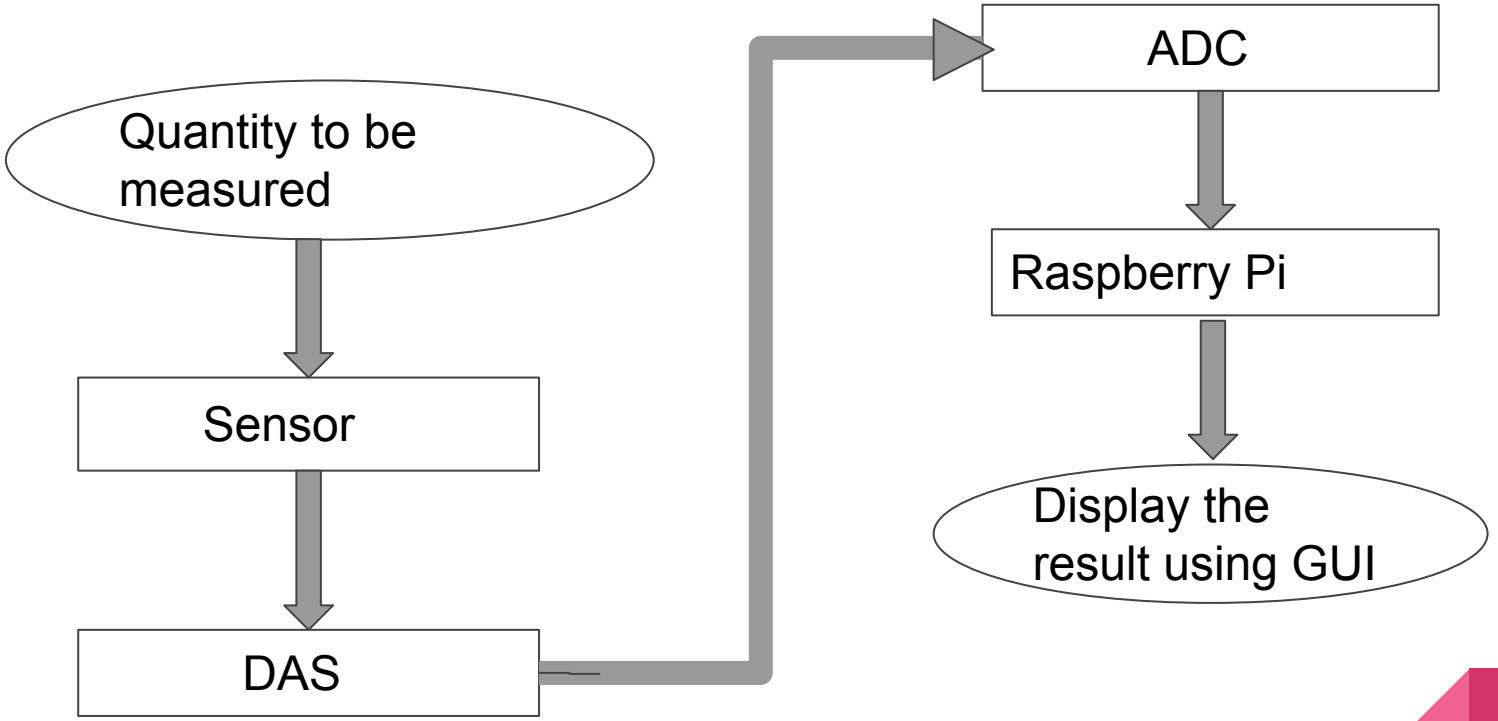


ADC
MCP3002

Schematic Diagram :



Workflow:


Quantity to be measured
Sensor
DAS
ADC
Raspberry Pi
Display the result using GUI

Any Queries:


Thank
you !!