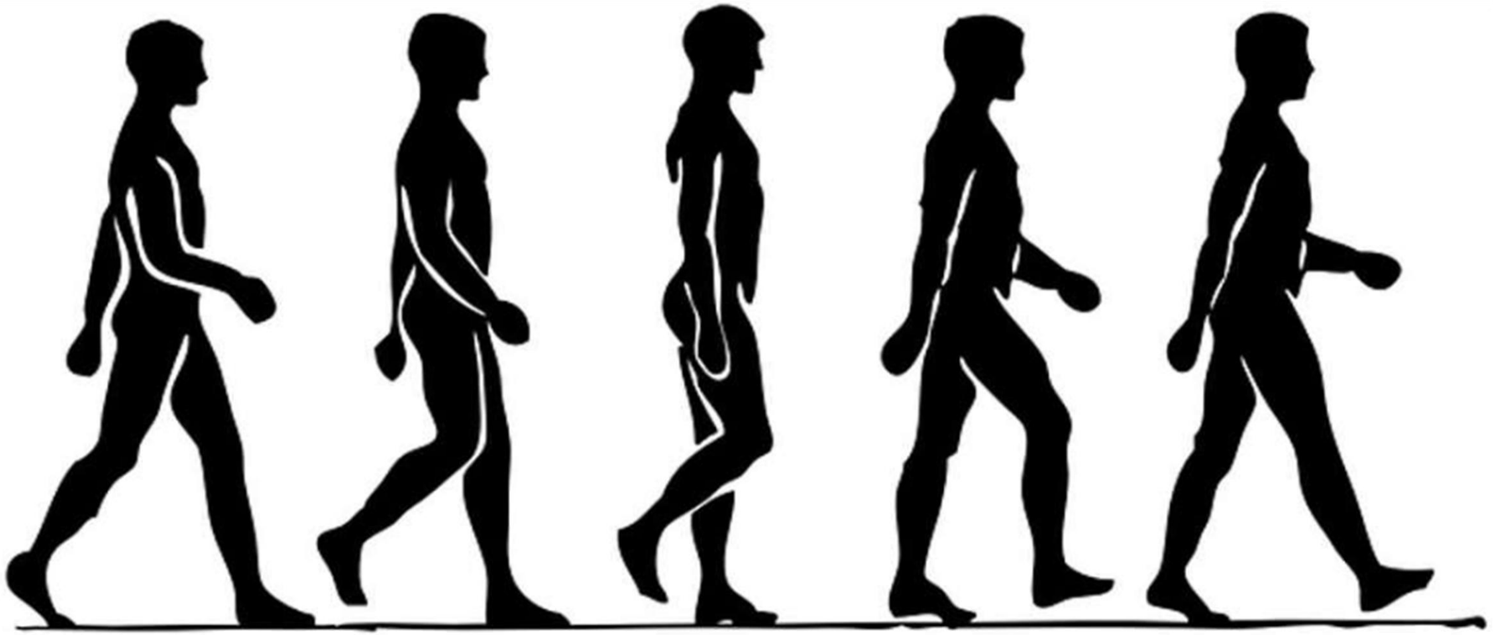
GAIT MONITORING SYSTEM



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01

Understanding The need

- **Gait Monitoring systems are needed in every field and here are some of these fields :**

  - Healthcare
  - Athletic Improvement
  - Research and Education
  - Rehabilitation Support
  - Movies & Games Industry

SOME APPLICATIONS:

PHYSICAL REHABILLATION

MOTION CAPTURE

ATHLETIC IMPROVEMENT

SOME APPLICATIONS:

PHYSICAL REHABILLATION

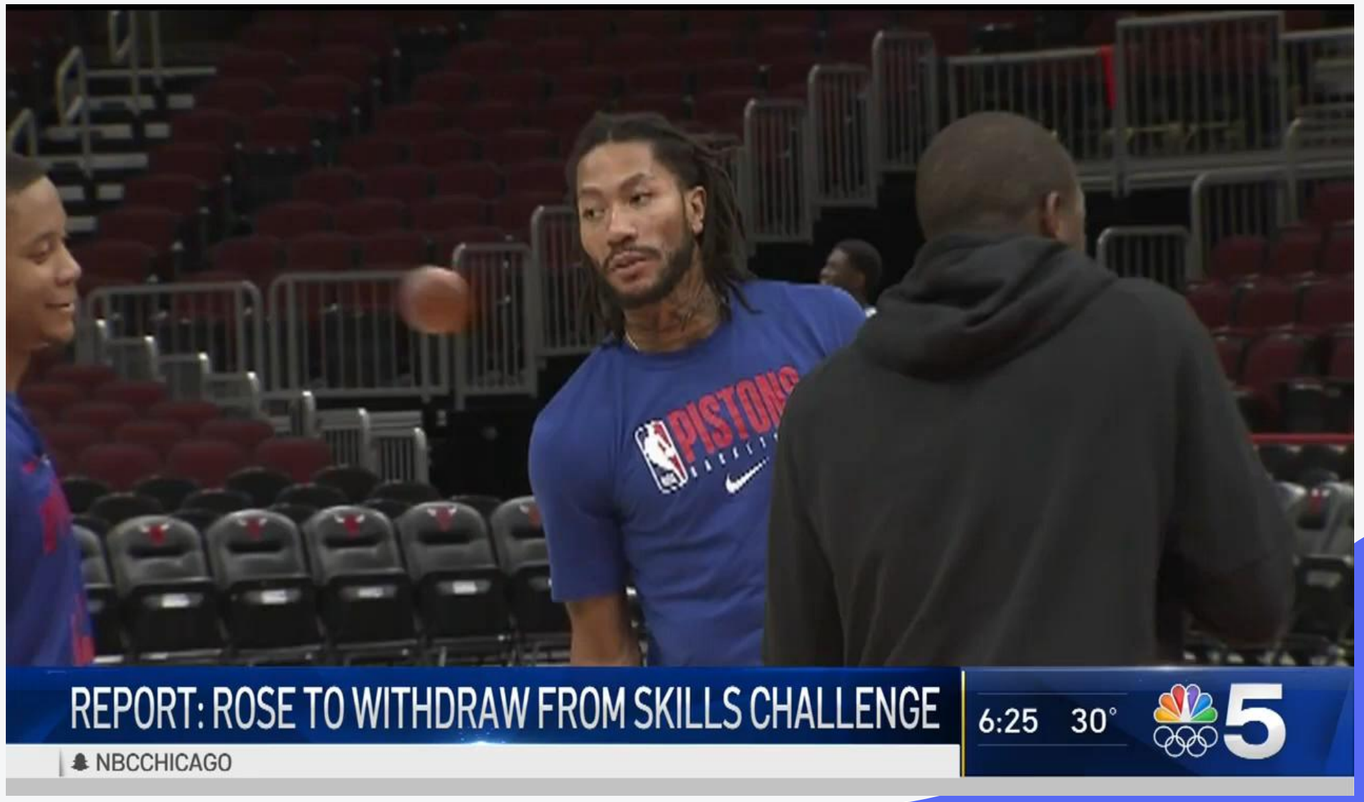
UNIVERSITY OF DELAWARE

SOME APPLICATIONS:

MOTION CAPTURE

SOME APPLICATIONS:

ATHLETIC IMPROVEMENT



02

FEATURES AND FUNCTIONALITY

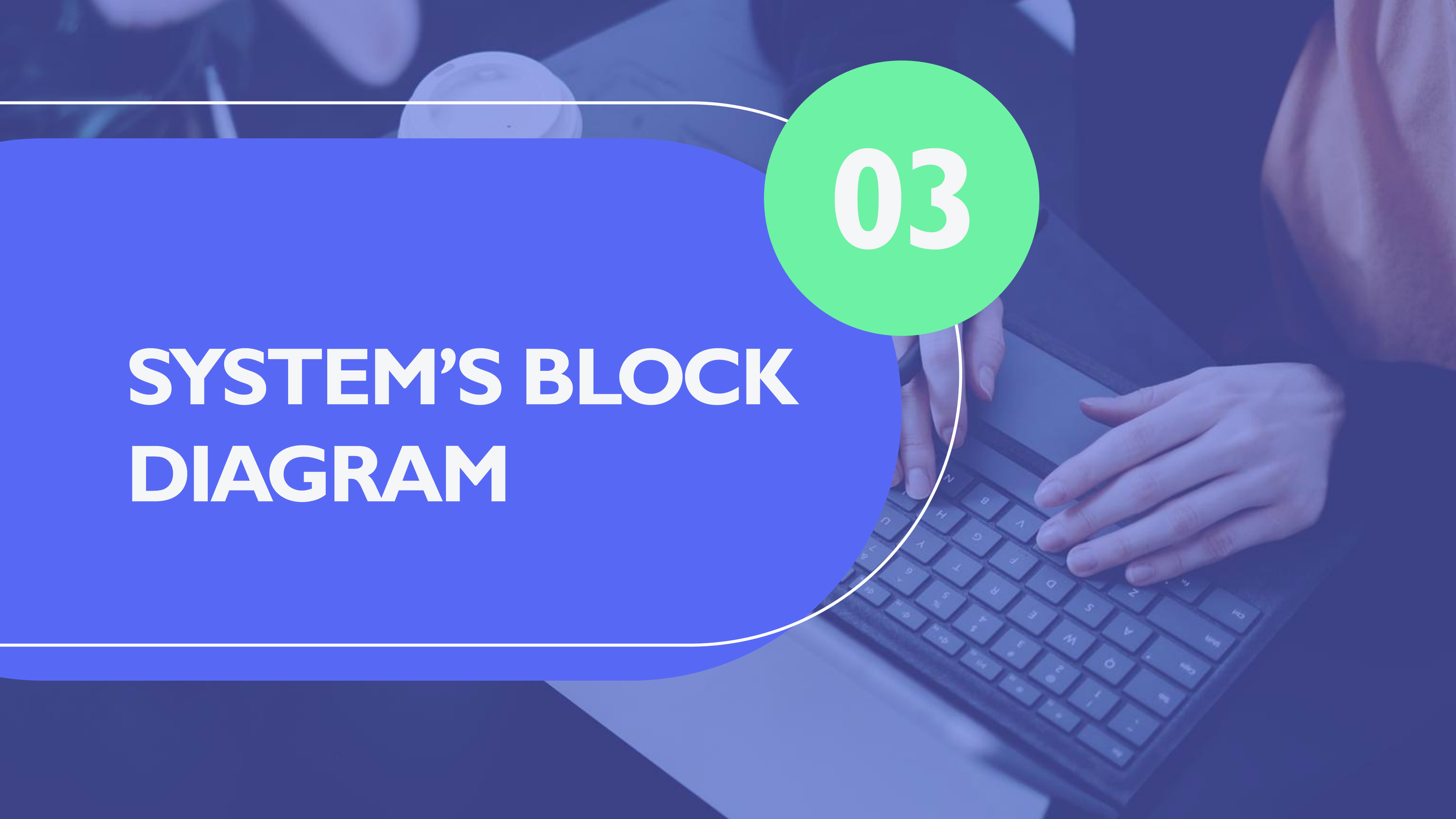
FEATURES OF OUR SYSTEM:

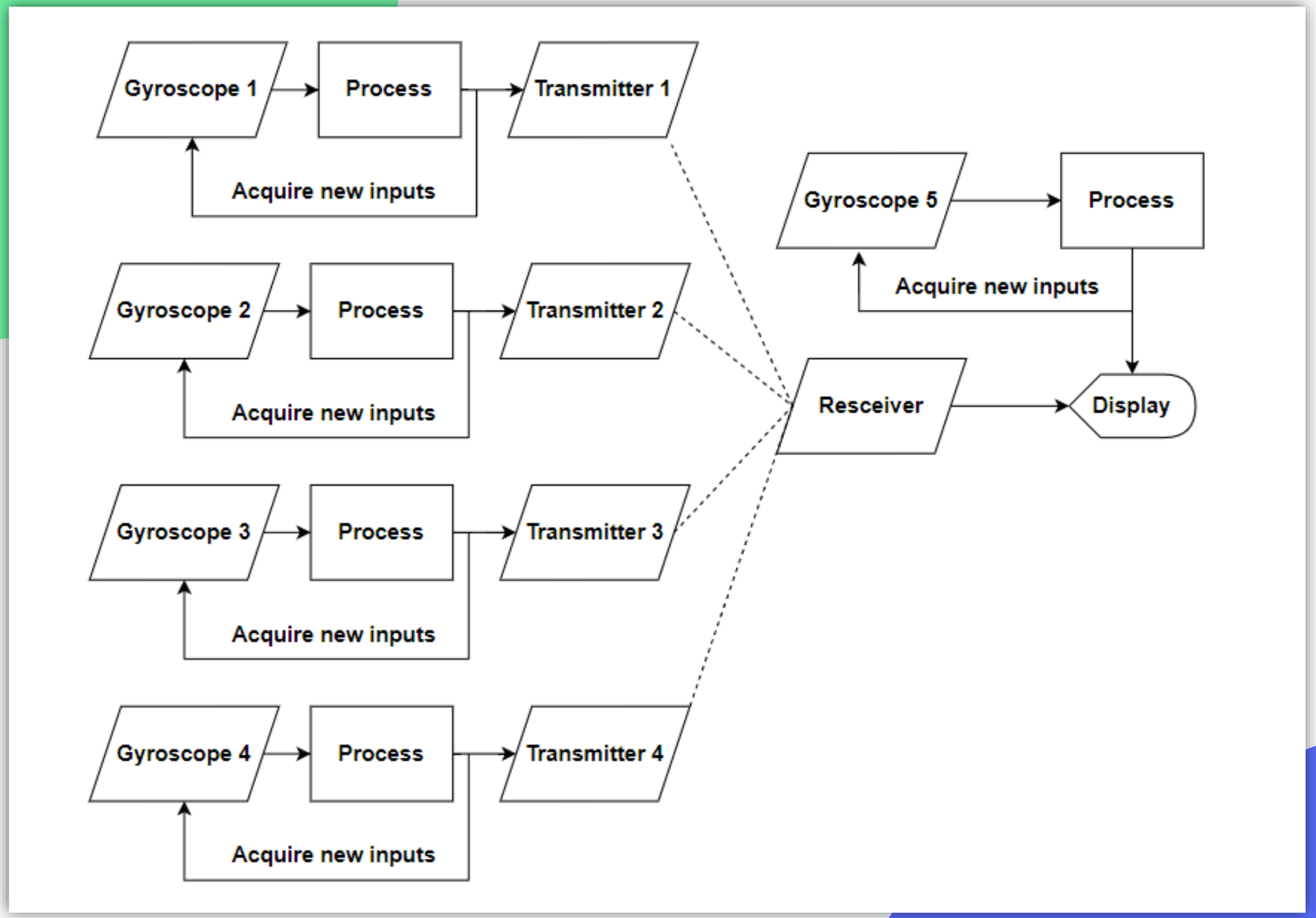
- Has high sensitivity
- Our system is cheap in price compared to the big labs
- Small in size
- Consumes less power

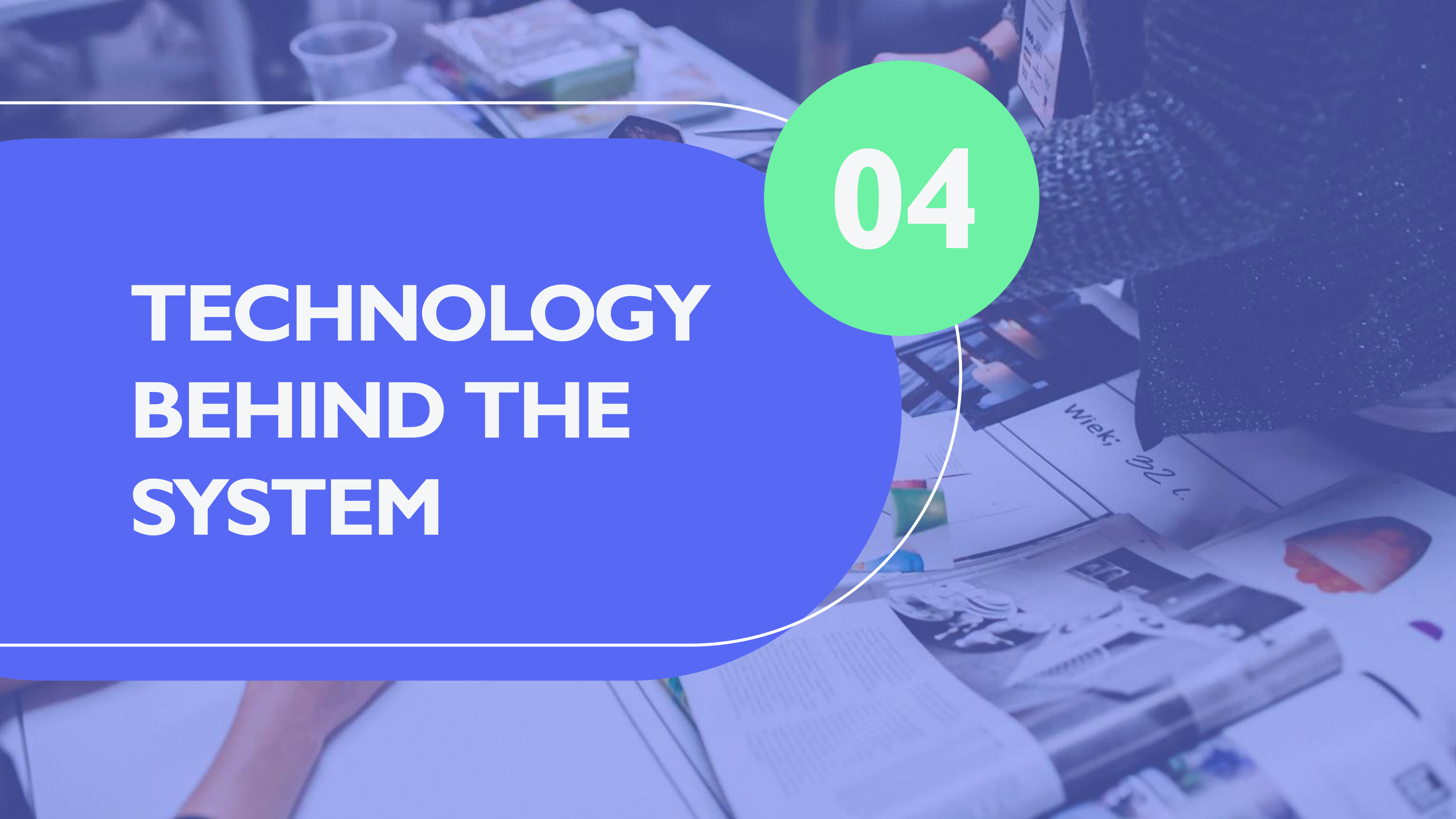
OUR SYSTEM USES ITS RESOURCES EFFECIENTLY TO PROVIDE THE REQUIRED READINGS

03

SYSTEM'S BLOCK DIAGRAM




Gyroscope 1
Process
Transmitter 1
Acquire new inputs
Gyroscope 2
Process
Transmitter 2
Acquire new inputs
Gyroscope 3
Process
Transmitter 3
Acquire new inputs
Gyroscope 4
Process
Transmitter 4
Acquire new inputs
Gyroscope 5
Process
Acquire new inputs
Resceiver
Display

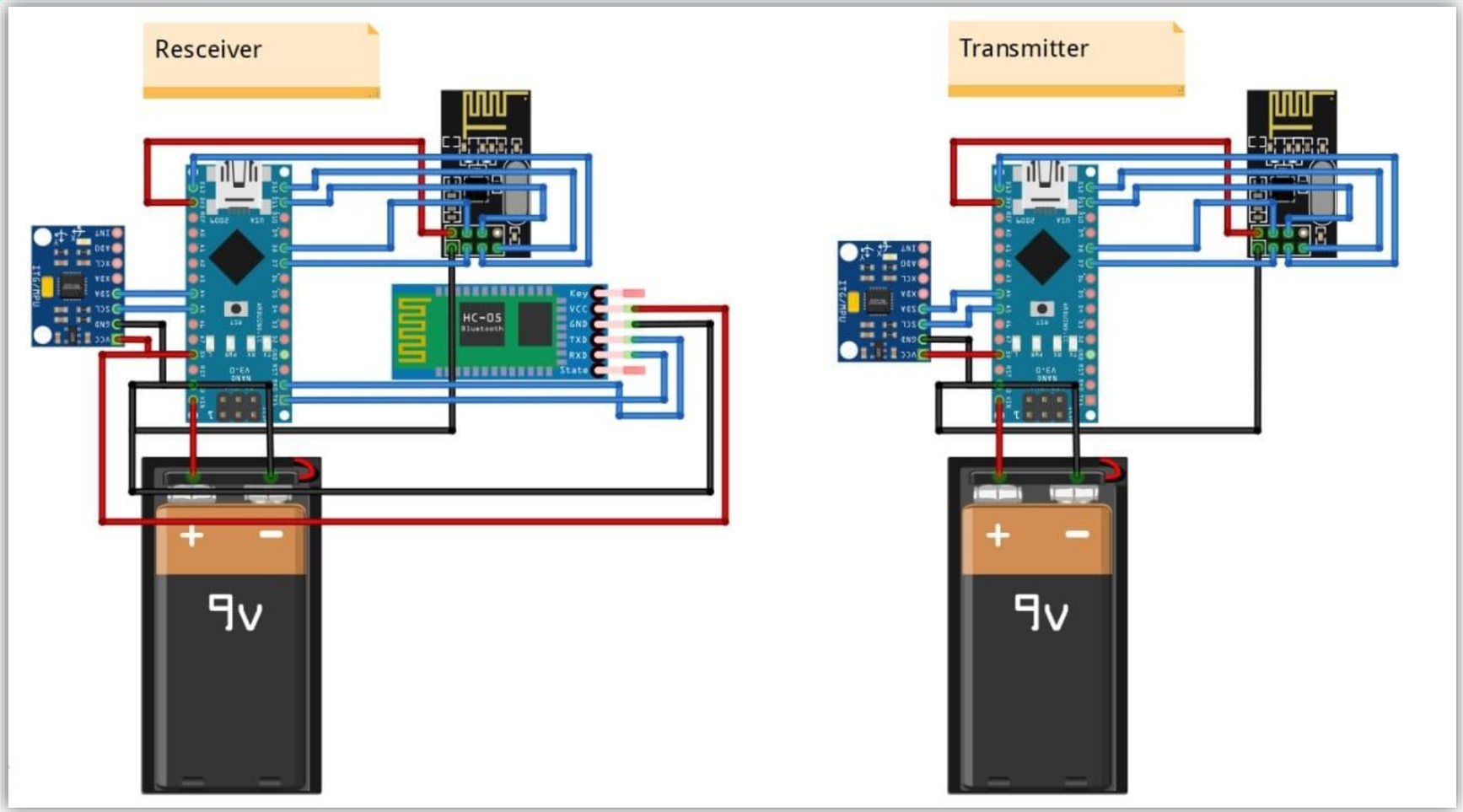


04

TECHNOLOGY BEHIND THE SYSTEM

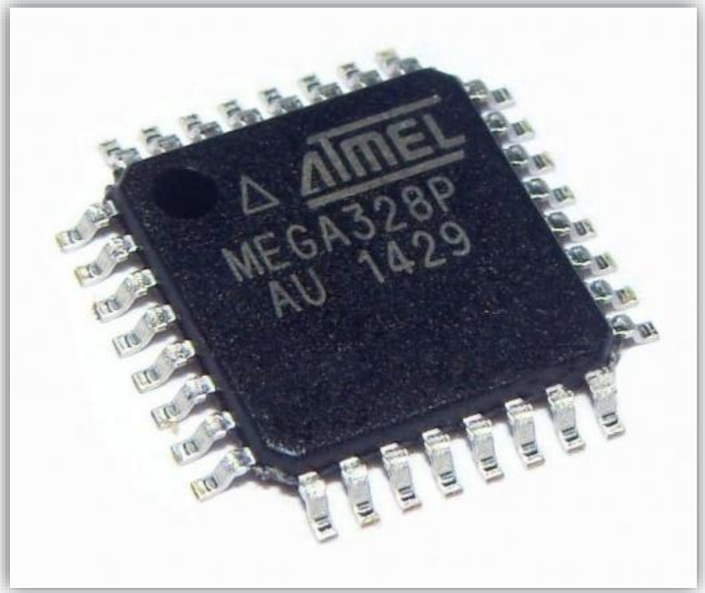
HARDWARE

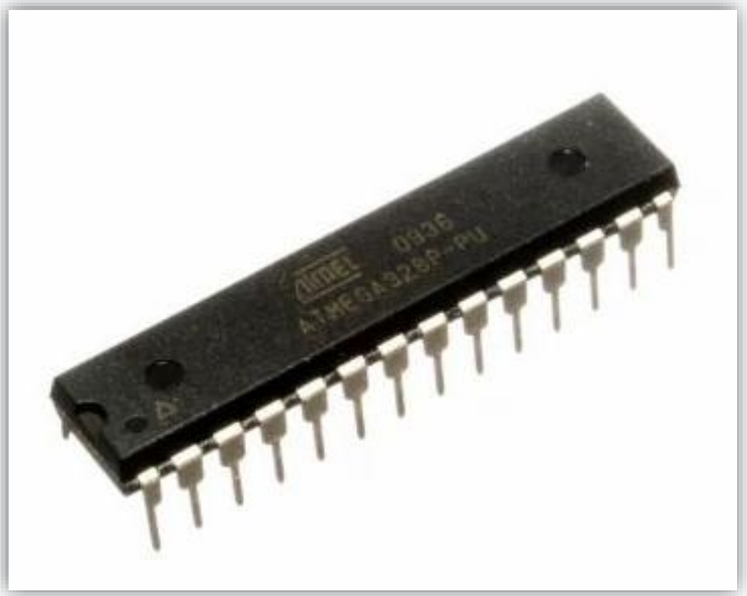
OVERVIEW


Resceiver
Transmitter
HC-05
Bluetooth
Key
VCC
GND
TXD
RXD
State
9v
9v

AVR ATmega32

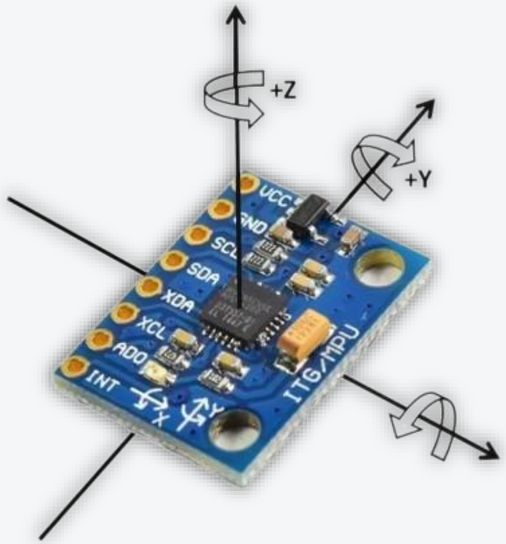
The controller embedded in the Arduino board which is compatible with SPI and I2C communication protocols





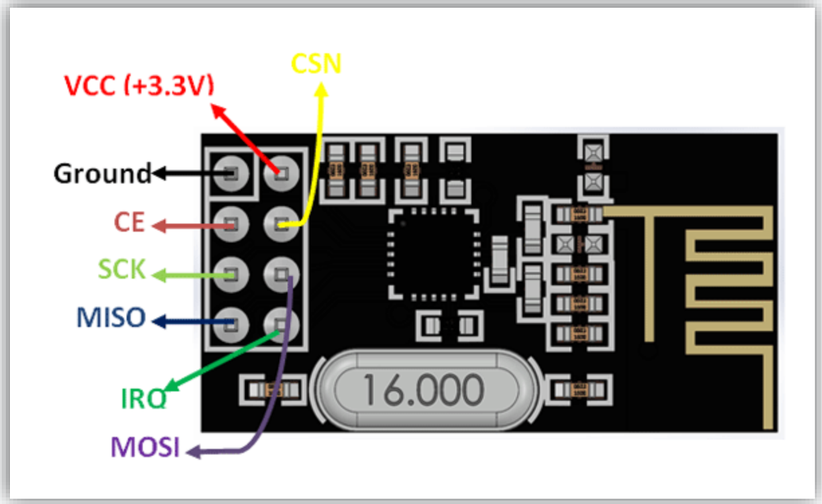
MPU 6050

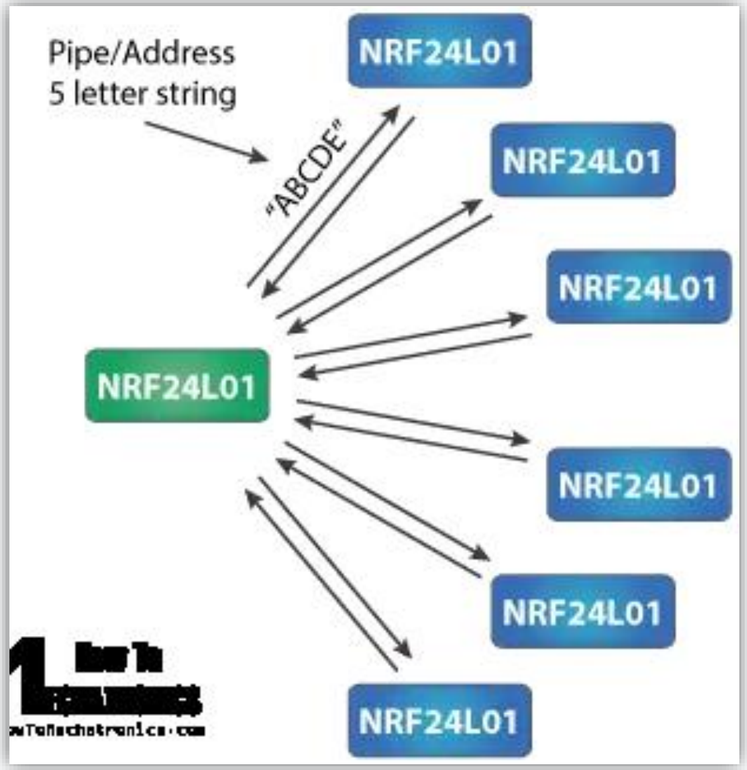
3-axis gyroscope and a 3-axis accelerometer that uses I2C communication protocol. the world’s first Motion Tracking device designed for the low power, low cost, and high-performance requirements



NRF24L01

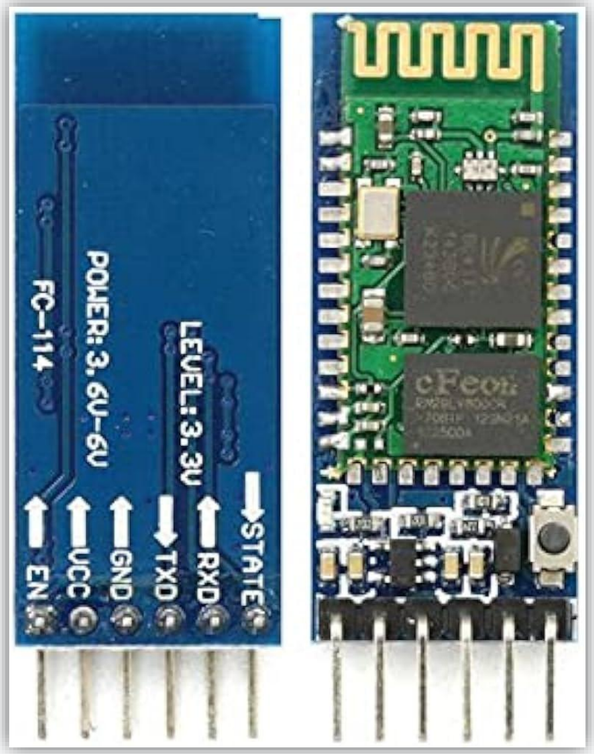
A transceiver used to send readings from all joints into one controller and uses SPI communication protocol, It uses the 2.4 GHz band and can operate with baud rates from 250 kbps up to 2 Mbps. If used in open space and with lower baud rate its range can reach up to 100 meters





HC-05

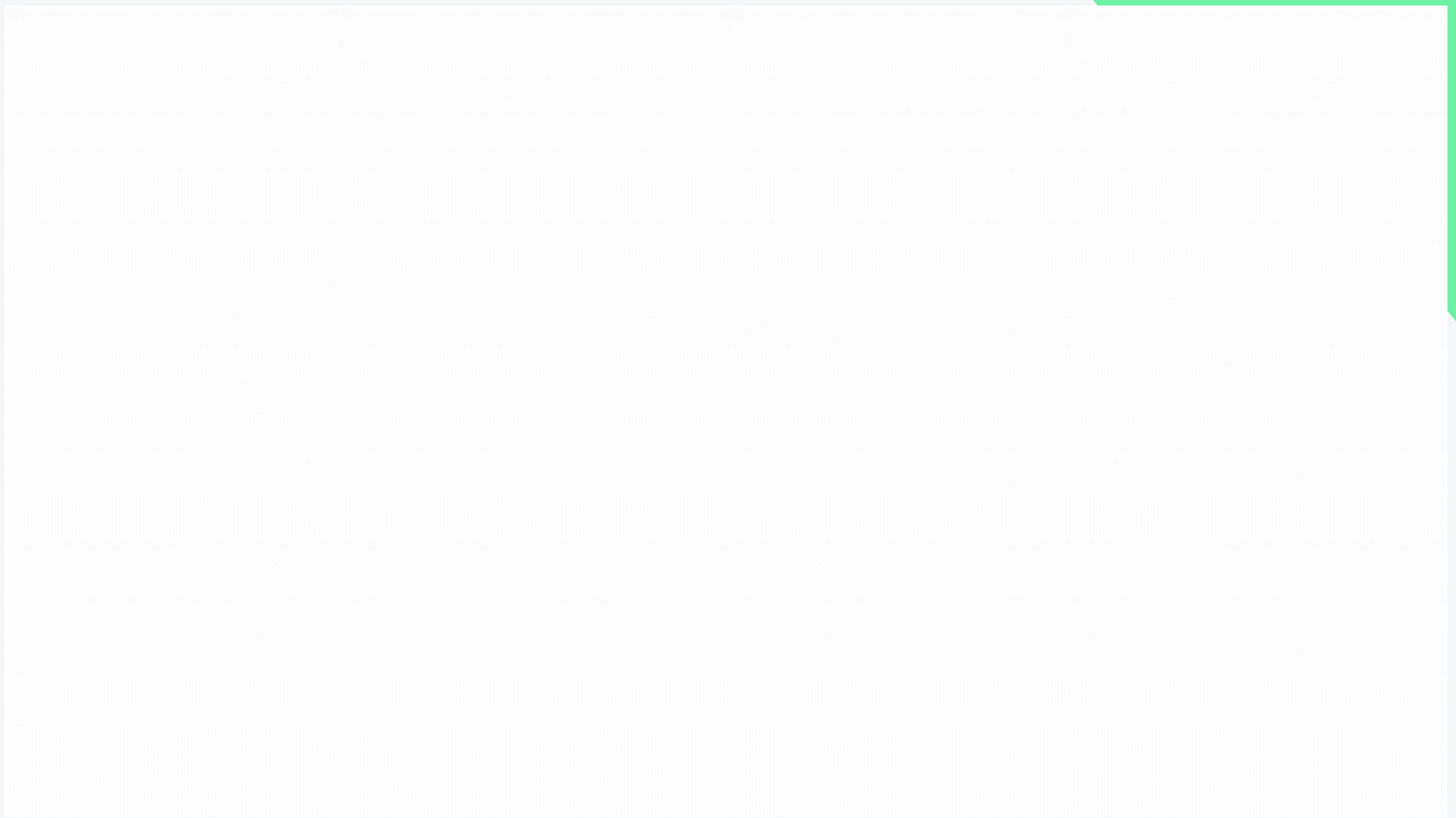
Bluetooth module used to send all readings from the master controller to the serial connected device and uses UART communication protocol and has a range of 10 m



05

INSPIRATION

We aim to reach a project near to “IMU Motion Capture”. Our idea is to recreate this project and send the information to the pc mobile phone or any serial connected device and display it on screen .



THANK YOU

CSE567

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