SIT210

EMBEDDED SYSTEM DEVELOPMENT

TASK: 8.1D

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**Q1:** Discuss the benefits of I2C serial communication.

Answer: I2C stands for Inter-integrated –circuit. It is a serial communication protocol used for modules and sensors. The speed of I2C is dependent by data speed, wire quality and external noise.

**The benefits of I2C communication are:**

1. **Low pin/signal count even with numerous devices on the bus:** I2C (Inter-Integrated Circuit) communication utilizes only two wires: one for data (SDA - Serial Data Line) and one for clock (SCL - Serial Clock Line).
2. **Flexible, as it supports multi-master and multi slave communication:** Multiple master devices can communicate with multiple slave devices on the same bus.
3. **Simple as it uses two bi-directional wires to establish communication among multiple devices:** the data line (SDA) and the clock line (SCL) are bi-directional, allowing for bidirectional communication between master and slave devices.
4. **Adaptable** as it can adapt to the needs of various slave devices: The protocol can be adapted to suit the specific requirements of each connected slave device. It supports a unique addressing scheme that allows multiple slave devices to together exist on the same bus.
5. It supports **multiple master:** With the help of I2C's multi-master capabilities, many master devices can interact and communicate with a single group of slave devices.

**Q2:** : Create a repository named SIT210\_Task8.1D\_RPi\_I2C on Github. Upload your code to the repository. Include the link to your repository here.

**Link to code:**

**Q3:** Put a video demonstrating your system working on Youtube. Your video should include a brief description of how your system works and how you have programmed it.

**Link to Video:**

<https://drive.google.com/drive/folders/1D3TvakhklHlNXxVmEOy9lGKqKgvcz1Je?usp=sharing>