**Title: Detailed Discussion of a System Architecture Using IoT Device.**

The Internet of Things (IoT) is a new paradigm that makes it possible for electrical gadgets and sensors to communicate with one another through the internet to make our lives easier. IoT uses the internet and smart devices to offer creative answers to problems faced by businesses, governments, and both public and private sectors throughout the world.

Nowadays, everyone in the modern society is highly concerned about their health. Regardless of age, individuals today are experiencing a growing variety of health issues. So Finding a cure as soon as possible can be aided by early diagnosis of health problems, which can also improve life quality.

Medical sensors are used in healthcare applications to track patients' health condition and send their data to the hospital servers for further processing using Iot. The data has to travel form patient location to hospital server and from the hospital server, the data can be accessed by the doctors at remote location.

Wireless Medical Sensor Networks (MSNs) have become essential components for delivering real-time and widespread remote patient monitoring.

The sensors are deployed in the human body to monitor the parameters like temperature, heart rate, blood pressure and so on.

Zigbee is a wireless technology developed as an open global market connectivity standard to address the unique needs of low-cost,

low-power wireless IoT data networks. Zigbee is used to link smart devices like lights, plugs, and smart locks to a home network.

The server receives the values that the sensors read, and the physicians may view this data there.

Conclusion:

Recent advances in IoT have caught the attention of researchers and developers all around the world. IoT developers and researchers are collaborating to expand the technology on a wide scale and help society as much as possible. IoT helps healthcare providers to be more vigilant and proactive in their interactions with patients. Data received from IoT devices can assist physicians in determining the appropriate treatment method for patients and achieving the desired outcomes.

**Title: Video Presentation of Introduction of Parts and Functions of Raspberry Pi as an IoT Device.**

The Raspberry Pi is a tiny, low-cost single-board computer the size of a credit card that enables individuals of various backgrounds and levels of competence to experiment with and learn to compute. It is an improved motherboard developed in the United Kingdom by the Raspberry Pi foundation, which is now generally regarded as a developing component of computer technology.

Parts

1. Central Processing Unit (CPU)

Every computer has a Central Processing Unit, and so does the Raspberry Pi. It is the computer’s brain and carries out instructions using logical and mathematical operations.

2. HDMI port

Raspberry Pi board has an HDMI or High Definition Multimedia Interface port that allows the device to have video options of the output from the computer displayed.

3. Graphic Processing Unit (GPU)

Its primary purpose is to accelerate the speed of image calculations.

4. Memory (RAM)

Random Access Memory is a core part of a computer’s processing system. It is where real-time information is stored for easy access. The initial Raspberry Pi had 256MB RAM. Over the years, developers gradually and significantly improved the size. The model with the maximum capacity presently is the Raspberry Pi 4 with 8GB RAM space.

5. Ethernet port

The Ethernet port is a connectivity hardware feature available on B models of Raspberry Pi. The Ethernet port enables wired internet access to the minicomputer.

6. SD card slot

Unlike conventional PCs, it does not come with a hard drive, nor does it come with a memory card. The Raspberry Pi board has a Secure Digital card or SD card slot where users must insert SD cards for the computer to function.

7. General Purpose Input and Output (GPIO) pins

These are upward projecting pins in a cluster on one side of the board. The oldest models of the Raspberry Pi had 26 pins, but most have 40 GPIO pins. GPIO pins are used to interact with other electronic circuits.

8. LEDs

These are a group of five light-emitting die-odes. They signal the user on the present status of the Raspberry Pi unit.

* **PWR (Red):**This function solely to indicate power status. When the unit is on, it emits a red light and only goes off when the unit is switched off.
* **ACT (Green):**This flashes to indicate any form of SD card activity.
* **LNK (Orange):**LNK LED gives off an orange light to signify that active Ethernet connectivity has been established.
* **100 (Orange):**This light comes on during Ethernet connection when the data speed reaches 100Mbps.
* **FDX (Orange):**FDX light also comes during Ethernet connection. It shows that the connection is a full-duplex.

9. USB ports

Universal service bus (USB) ports are a principal part of Raspberry Pi. They allow the computer to connect to a keyboard, mouse, hard drives, etc.

10. Power source

Raspberry Pi has a power source connector that typically uses a 5V micro-USB power cable.

Benefits

* Low cost (~35$)/P 1,995
* Raspberry Pi is a better solution if you want to save your electricity consumption. It does not consume more than 5W of power so it will be good enough for you.
* Many interfaces (HDMI, multiple USB, Ethernet, onboard Wi-Fi and Bluetooth, many GPIOs, USB powered, etc.)
* Supports Linux, Python (making it easy to build applications)