Engineer's Cradle

PRESENTS

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PUNE REGION- I

Solve real-world problems on an
endless canvas of invention

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MAKING IDEAS HAPPEN ...

PROJECT PPT GUIDELINES :

- Team name : Tech smasher

- Member name : Himali Dodiya

- Summary of project:

- My project name is **5G enabled remote patient monitoring(RPM) device**. It refers ton use of 5G technology to remotely monitor patient's health status and vital signs in real time . With the high speed and low latency of 5G networks healthcare providers can gather data more efficiently,enabling better and faster decision making.This technology can revolutionize healthcare by allowing patients to care from the comfort of their home.

PROBLEM :

❖ **Limited access to Healthcare:**

Patients with chronic conditions may struggle to access regular healthcare services due to travel limitations. This can result in delayed diagnoses and worsened health outcomes.

❖ **Quality of life impact:**

Patients with chronic conditions may experience reduced quality of life due to limited mobility and independence associated with frequent health care visits.

❖ **Risk of disease spread:**

Patients with contagious illnesses may inadvertently spread infections by visiting health care facilities for monitioring appointments.

SOLUTION:

❖ **Real-time Data Transmission:**

5G's high speed enables real time transmission of patient data,including vital signs,symptoms allowing healthcare providers to monitor patients continuously.

❖ **Improved Accessibility:**

With 5G,remote patient monitoring becomes more accessible ,even in rural or underserved areas where traditional internet connectivity may be limited.

❖**Scalability:**

5G infrastructure can support a large number of conneted devices simultaneously,making it suitable for scaling remote patient monitoring progams .

PRODUCT: REMOTE PATIENT MONITORING DEVICE

PRODUCT WORKING:

- Remote patient monitoring (RPM) device is a healthcare delivery method that uses technology to monitor patients outside of traditional healthcare settings. It involves the use of devices to collect patient data, such as vital signs, and transmit it securely to healthcare providers for review and analysis. This allows for continuous monitoring of patients' health status and early detection of any changes or abnormalities, enabling timely interventions and improved patient outcomes.

TIMING:

Technological Advancements: The current landscape offers unprecedented technological advancements, especially in areas like 5G connectivity, wearable sensors, and AI-driven analytics. Leveraging these innovations allows us to create more sophisticated and efficient remote patient monitoring devices, enhancing their effectiveness and usability.

Rise of Chronic Diseases: The prevalence of chronic diseases such as diabetes, hypertension, and heart disease is increasing globally. Remote patient monitoring devices help manage these conditions by providing timely interventions and reducing the need for frequent in-person visits.

TARGET CUSTOMERS:

- **Elderly Patient with Chronic Conditions:**

  - Profile: Elderly individuals living alone or with minimal caregiver support, managing chronic conditions like hypertension, diabetes, or heart disease.

  - Persona: "Grace," an 75-year-old retiree with hypertension and diabetes. She prefers simple, easy-to-use devices that seamlessly integrate into her daily routine. Grace values independence but may need occasional assistance from family members or caregivers.

- **Tech-Savvy Young Professional**:

 - Profile: Young professionals with busy lifestyles who prioritize convenience and connectivity, managing conditions like stress, sleep disorders, or fitness goals.

 - Persona: "Alex," a 30-year-old working professional who leads an active lifestyle. Alex relies on remote patient monitoring (RPM) to track fitness metrics, sleep patterns, and stress levels. He values data-driven insights and enjoys sharing his progress on social media platforms.

COST ANALYSIS:

- **1. Assets** - Hardware components (sensors, microcontrollers, communication modules, etc.) - Manufacturing equipment (if producing in-house) - Testing equipment (for quality control)

- **2. Equipment** - Computers/laptops for development and testing - Prototyping tools (3D printers, soldering stations, etc.) - Laboratory equipment for testing and validation

- **3. Manpower** - Engineers (hardware, software, firmware) - Designers (UI/UX) - Project managers - Quality assurance/testing specialists - Regulatory compliance experts

- **4. Software** - Development tools (IDEs, compilers, simulation software) - Licensing fees for software libraries or frameworks - Operating system licenses - Cloud services for data storage and analysis

- **5. Miscellaneous** - Regulatory approval costs (FDA, CE marking, etc.) - Intellectual property protection fees (patents, trademarks) - Marketing and promotional expenses - Overhead costs (office space, utilities, insurance)