INSTITUTE OF AERONAUTICAL ENGINEERING

**(Autonomous)**

Dundigal, Hyderabad - 500 043

**ExEED- Project Based Learning**

1. **Student Details**

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| --- | --- | --- | --- |
| **Name of the Student** | **Roll Number** | **Branch** | **Mobile Number** |
| S. HARI KRISHNA | 20951A0457 | ECE | 7036961769 |
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1. **Title of the Innovation or Prototype**

HEART RATE, SPO2, TEMPERATURE MEASUREMENT USING ARDUINO

1. **Define the problem and its relevance to today's market / society / industry need**

**Medical field has experienced a huge growth since past few years. Technical advancement is a key point. The growth in healthcare science and technology has made patient care far superior and more reliable in most cases by providing new machines (such as MRIs), medicines, and treatments that save lives and improve the chance of recovery for many. Despite of this situation, some specific cases require rapid working than the present. In search of attracting market towards products, many fields lost their scope in making their products efficient and speed.**

1. **Describe the Solution / Proposed / Developed**

**In that case, out prototype fills the void. Our prototype can measure Human Heart rate, Spo2, Body temperature. It will assess the readings, makes predictions based on multiple recordings and provide regular feedback based on the assessment. It is a complete model used mainly by COPD affected people, respiratory problems, emergency purposes etc. KKKKKKKKKKKKKKKKKKKKKKK**

1. **Explain the uniqueness and distinctive features of the product / process / service solution**

**This product has a better working mechanism than the present. At present, oximeters, smart watches work on photoplethysmography and it require more time in producing accurate results. It has many drawbacks but no technology leads it at present. Our product has a better program and can provide more accurate and rapid results than those present in the market.**

1. **How your proposed / developed (product / process / service) solution is different from similar kind of product by the competitors if any .**

**We found that there isn’t any product right now working based on the technology we used in our product. Our product is made of inbuilt Arduino UNO module and MAX30102 sensor. The sensor we used functions effectively in measuring the conditions mentioned.**

1. **Utility: Highlight the utility/value proposition (key benefits) aspects of the solution/innovation\***

**This product doesn’t need any fragile maintenance resulting in regular and friendly usage by customers. It comes as a patch that can be attached to body and can get continuous readings and predictions. Hence, we can take better care based on the results.**

1. **Scalability: Highlight the market potential aspects of the Solution/Innovation (Potential Market Size, segmentation and Target users/customers etc.)**

**Medical field do require equipment like this so as to maintain qualified emergency services in hospitals. Due to lack of rapid services in remote areas, this product can be accessible to people in a wide range. People effected with COPD diseases can live their routine life and also can take better care based on product results.**

1. **Economic Sustainability: Highlight commercialization/business application aspects of the solution (how it is going to economic profitable and viable)**

**This product can be cost effective and worth the working. Potential markets that are indulged in making products like these can have a better business. It is quite different than others with same functioning in a business perspective. Pointing to its rapid working, this product can have wide range of usage by consumers.**

1. **Environmental Sustainability: Highlight environmental friendliness aspects and related benefit of the solution/innovation**

**This product doesn’t cause any radiation into atmosphere and completely safe wearing on human body. This product can be easily dismantled if any damage caused. Though it contains plastic, while manufacturing it can be replaced with fiber in making its body. More efficient ways can be discovered in making it biodegradable.**

1. **Details of Prototype**

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| --- | --- |
| **Components** | * **Arduino UNO** * **MAX30102** * **128x32 OLED display** * **BUZZER** |
| **Budget** | **1700/-** |
| **Images of prototype** |  |
| **Video Link** |  |

**Signature of the PBL faculty In-charge**

