**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belagavi- 590018, Karnataka**



PROJECT REPORT ON

**“CardioHealth”**

Submitted in partial fulfillment of the requirement for the award of degree

**BACHELOR OF ENGINEERING**

**IN**

**MEDICAL ELECTRONICS**

During the academic year 2018- 19

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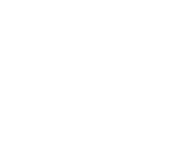
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**DEPARTMENT OF MEDICAL ELECTRONICS**

**DAYANANDA SAGAR COLLEGE OF ENGINEERING**

Shavige Malleshwara Hills , Kumaraswamy Layout ,Bengaluru - 560078

(An Autonomous Institution affiliated to VTU, Approved by AICTE &UGC, ISO 9001:2015 Certified)

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**CERTIFICATE**

This is to certify that the project work entitled **“CardioHealth”** is a bonafide work carried out by **Ms. DEEKSHA V (1DS15ML006), Ms. Fiha Afra (1DS15ML009), Ms. PRATHIBHA K P (1DS15ML023), Ms. SYED FIZA (1DS15ML032),** in the partial fulfillment for award of degree of **Bachelor of Engineering** in **Medical Electronics**, affiliated to **Visvesvaraya Technological University, Belagavi**during the academic year **2018-2019**.It is certified that all corrections/suggestionsindicated for internal assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirement in respect of project work prescribed for the Bachelor of Engineering degree.

Signature of Guide Signature of HOD Signature of Principal

[Prof. Sahana M. Kulkarni] [Dr. V. G. Sangam] [Dr. C. P. S. Prakash]

**EXTERNAL VIVA**

**Name of Examiners** **Signature with Date**

**Examiner 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Examiner 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**DECLARATION**

We **Deeksha V, Fiha Afra, Prathhibha K P, Syed Fiza**, hereby declare that this dissertation work entitled “**CardioHealth**” embodies report of our project work carried out under the guidance and supervision of **Prof. Sahana M. Kulkarni,** Assistant Professor, Departmentof Medical Electronics, Dayananda Sagar College of Engineering, Bengaluru.

This project work is submitted to **Visvesvaraya Technological University, Belagavi,Karnataka,** in partial fulfillment of requirements for the award of degree **Bachelor of Engineering** in **Medical Electronics** during the academic year **2018-2019**. Further, the matterembodied in the dissertation has not been submitted previously by anybody for the award of any degree or diploma to any other University.

Place: Bangalore

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**ABSTRACT**

Cardiovascular diseases are said to be the leading cause of increase in financial resources in the medical sector. A significant portion of the recovery process is the cardiovascular rehabilitation program. The large and ever increasing pressure on medical organizations around the world requires health care professionals to be prescribing home-based exercise rehabilitation treatments  to allow patients to carry out rehabilitation with constant monitoring with the added convenience of performing exercises at home.  Home-based exercise rehabilitation approaches have shown to be effectual and successful in treating conditions such as Cardiovascular Disease (CVD). Nonetheless, adhering to home-based exercise rehabilitation systems seems to remain low. Possible reasons for this are that since patients are not monitored by their respective representatives, they are not completely confident that they are performing the exercises properly or in a correct and accurate manner and that they do not receive feedback. This causes the patients to lose motivation.The proposed project CardioHealth, offers an interesting, gamified exercise rehabilitation platform that can help address the issue of adherence to these programmes.  CardioHealth aims to be a home-based rehabilitation system for patients under rehabilitation of cardiovascular diseases with a user-friendly interface and also a doctor-patient interaction system for doctors/physiotherapists to diagnose and examine patients without face-to-face interaction. CardioHealth utilizes the Kinect V2, a motion capturing device developed by Microsoft.The patients must perform exercises in front of the Kinect and results are sent straight to the patient's doctor/physiotherapist. This would help the patient in adhering to the prescribed exercise program as the records will be monitored by their respective medical professional. The gamified environment of the application also serves as motivation for patients to adhere to the prescribed exercise routine. CardioHealth system is designed to be  low cost, easy to use, capable to support new learning styles and to ensure to the best of its abilities to provide the patient with a smooth and more successful road to recovery.

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