



PRESIDENCY UNIVERSITY

Private University Estd. in Karnataka State by Act No. 41 of 2013

Itgalpura, Rajankunte, Yelahanka, Bengaluru – 560064



School of Engineering

Department of Computer Science and Engineering

EDUCATION AND AWARENESS – EFFECTIVE USE OF TECHNOLOGY FOR DISSEMINATION OF ANTI-DOPING INFORMATION

A PROJECT REPORT

Submitted By

Dikshith S - 20231CSE3027

R V Babitha - 20221CSE0188

Arati Manakyal - 20221CSE0578

Under the guidance of,

Assistant Professor Ms. Nithya B.A

BACHELOR OF TECHNOLOGY

IN

**COMPUTER SCIENCE AND ENGINEERING
PRESIDENCY UNIVERSITY BENGALURU
DECEMBER 2025**



Department of Computer Science and Engineering

BONAFIDE CERTIFICATE

Certified that this project titled "EDUCATION & AWARENESS- EFFECTIVE USE OF TENCHNOLOGY FOR DISSEMINATION OF ANTI-DOPING INFORMATION " is a bonafide work of "Dikshith S (20231CSE3027), R V Babitha (20221CSE0188), Arati Manakyal (20221CSE0578)", who have successfully carried out the project work and submitted the report for partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology in Computer Science and Engineering** during 2025-26.

N. Nithya
21/12/2025
Ms. Nithya B.A
Project Guide
Presidency
University School of
Computer Science
and Engineering

Mr. Muthuraju
21/12/25
Mr. Muthuraju
Program Project
Coordinator PSCS
Presidency University

Dr. Sampath A K
21/12/25
Dr. Sampath A K
Dr. Geetha A
School Project
Coordinators PSCS
Presidency Univeristy

Dr. Blessed Prince
21/12/25
Dr. Blessed Prince
P Head of the
Department Presidency
University School of
Computer Science and
Engineering

Dr. Shakkeera L
21/12/25
Dr. Shakkeera L
Associate Dean
PSCS
Presidency University

Dr. Duraipandian N
21/12/25
Dr. Duraipandian N
Dean
PSCS & PSIS
Presidency University

Examiners

Sl. no.	Name	Signature	Date
1	<i>Dr. Duraipandian N</i>	<i>P. J.</i>	21/12/2025
2	<i>Dr. Harishkumar, K.</i>	<i>H.S.</i>	21/12/2025

DECLARATION

We the students of final year B.Tech in Computer Science and Engineering at Presidency University, Bengaluru, named Dikshith S, R V Babitha, Arati Manakyal hereby declare that the project titled "Education & Awareness- Effective use of Technology for Dissemination of Anti- Doping Information" has been independently carried out by us and submitted in partial fulfillment for the award of the degree of Bachelor of Technology in Computer Science and Engineering during the academic year of 2025-26. Further, the matter embodied in the project has not been submitted previously by anybody for the award of any Degree or Diploma to any other institution.

Dikshith S - 20231CSE3027

R V Babitha - 20221CSE0188

Arati Manakyal - 20221CSE0578



PLACE: BENGALURU

DATE: December 2025 - 02

ACKNOWLEDGEMENT

For completing this project work, We/I have received the support and the guidance from many people whom I would like to mention with deep sense of gratitude and indebtedness. We extend our gratitude to our beloved **Chancellor, Vice Chancellor, Pro-Vice Chancellor, and Registrar** for their support and encouragement in completion of the project.

I would like to sincerely thank my internal guide Ms. Nithya B, **Assistant Professor**, Department of Computer Science and Engineering, Presidency University, for her moral support, motivation, timely guidance and encouragement provided to us during the period of our project work.

I am also thankful to **Dr. S Pravinth Raja, Professor, Head of the Department of Computer Science and Engineering**, Presidency University, for his mentorship and encouragement.

We express our cordial thanks to **Dr. Duraipandian N** Dean, **Dr. Shakkeera L** Associate Dean, School of Engineering and entire of Presidency University for providing the required facilities and intellectually stimulating environment that aided in the completion of my project work.

We are grateful to Dr. Sampath A K and Dr. Geetha A., Project Coordinators, Department of Computer Science and Engineering, for facilitating research activities and timely assessments.

We are also grateful to Teaching and Non-Teaching staff of Department of Computer Science and Engineering and also staff from other departments who have extended their valuable help and cooperation.

Dikshith S

R V Babitha

Arati Manakyal

Abstract

The integrity of sports relies heavily on fair play, ethical behavior, and the prevention of performance-enhancing drug misuse. In recent years, doping incidents have increased globally, highlighting the urgent need for effective education and awareness programs. Traditional methods of delivering anti-doping information—such as seminars, printed materials, and in-person workshops—often fail to reach a wider and diverse audience. With the rapid growth of digital technologies, there is a significant opportunity to enhance the reach, accessibility, and impact of anti-doping awareness initiatives.

This project explores the use of modern technological tools to disseminate anti-doping information in an efficient and user-friendly manner. The approach includes using digital platforms such as mobile applications, web portals, e-learning modules, and social media channels to educate athletes, students, coaches, and the public. Interactive features like videos, infographics, quizzes, and chatbots were designed to simplify complex information and improve user engagement. The project framework emphasizes accessibility, timely updates, and consistent messaging to ensure users receive accurate and reliable data regarding banned substances, testing procedures, health risks, and ethical sporting practices.

The results of the project demonstrate that technology-based dissemination significantly improves awareness levels compared to traditional methods. Users found digital tools more engaging, convenient, and easy to understand. The study concludes that integrating technology into anti-doping education can greatly enhance the effectiveness of awareness programs and contribute to promoting clean, fair, and responsible sporting environments.

Table of Content

Sl. No.	Title	Page No.
	Declaration	III
	Acknowledgement	IV
	Abstract	V
	List of Figures	VIII
	List of Tables	IX
	Abbreviations	X
1.	Introduction 1.1 Background 1.2 Statistics of Project 1.3 Prior Existing Technologies 1.4 Proposed Approach 1.5 Objectives 1.6 SDGs (Sustainable Development Goals) 1.7 Overview of Project Report	1-4
2.	Literature review	5-9
3.	Methodology	10-16
4.	Project management 4.1 Project timeline 4.2 Risk analysis 4.3 Project budget	17-21
5.	Analysis and Design 5.1 Requirements 5.2 Block Diagram 5.3 System Flow Chart 5.4 Choosing devices 5.5 Designing units 5.6 Standards 5.7 Mapping with IoTWF reference model layers 5.8 Domain model specification	22-30

	5.9 Communication model 5.10 IoT deployment level 5.11 Functional view 5.12 Mapping IoT deployment level with functional view 5.13 Operational view 5.14 Other Design	31-33
6.	Hardware, Software and Simulation 6.1 Hardware 6.2 Software development tools 6.3 Software code 6.4 Simulation	34-37
7.	Evaluation and Results 7.1 Test points 7.2 Test plan 7.3 Test result 7.4 Insights	38-41
8.	Social, Legal, Ethical, Sustainability and Safety Aspects 8.1 Social aspects 8.2 Legal aspects 8.3 Ethical aspects 8.4 Sustainability aspects 8.5 Safety aspects	42-44
9.	Conclusion	45-46
	References	47-48
	Appendix	49-54

List of Figures

Figure No.	Caption	Page No.
1.1	Overview of Anti-Doping Awareness Gap	2
1.2	Structure of Digital Anti-Doping Education System	4
2.1	Anti-Doping Education Framework (Literature)	5
2.2	Technology-Enabled Learning Model	6
3.1	Proposed Methodology Framework	10
3.2	Phases of the Research Method	11
4.1	Project Timeline (Gantt Chart)	18
4.2	Risk Assessment Matrix	19
4.3	Project Budget Distribution	20
5.1	System Requirement Model	23
5.2	Block Diagram of Proposed Awareness System	24
5.3	System Flowchart	25
5.4	Device Selection Overview	26
5.5	Design Unit Interaction Diagram	28
5.6	Standards Mapping Framework	29
5.7	IoTWF Layer Mapping Model	29
5.8	Domain Model Specification	30
5.9	Communication Model Diagram	31
5.1	IoT Deployment Level Classification	31
5.11	Functional View of the System	32
5.12	Mapping Functional View to IoT Deployment	33
5.13	Operational View Diagram	33
7.1	Test Points Overview Diagram	38
7.2	Test Plan Flowchart	39
7.3	Test Result – Pass/Fail Chart	40
7.4	Insights & Performance Improvement Diagram	41

List of Tables

Table ID	Table Caption	Page No.
Table 2.1	Summary of Literature Reviews	5
Table 4.2	Project Planning Timeline	18
Table 4.3	Project Budget	20
Table 7.2	Test Plan	39

List of Abbreviations

Abbreviation	Full Form
AI	Artificial Intelligence
ATP	Anti-Doping Testing Procedures
CSS	Cascading Style Sheets
DOM	Document Object Model
E-Learning	Electronic Learning
HCI	Human–Computer Interaction
HTML	Hypertext Markup Language
ICT	Information and Communication Technology
IEEE	Institute of Electrical and Electronics Engineers
IoT	Internet of Things
ISE	International Standard for Education (WADA)
JS	JavaScript
NADA	National Anti-Doping Agency
SDG	Sustainable Development Goal
TDP	Test Distribution Plan
TUE	Therapeutic Use Exemption

UI	User Interface
UN	United Nations
UX	User Experience
WADA	World Anti-Doping Agency