

Project Design Phase-I
Proposed Solution Template

Date	26 October 2022
Team ID	PNT2022TMID52101
Project Name	News Tracker Application
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	<p>Despite the worldwide physical closing of educational institutions due to the pandemic of COVID-19 in the spring of 2020, the learning process was not interrupted. Learning management systems and digital tools for online collaboration ensured a safe distance and continuity of educational activities. However, the rapid transition to remote learning in electronic environment has created a number of</p> <p>challenges in higher education. In order to derive long-term benefits from the changes in the way of teaching</p> <p>and examining, the paper explores the possibilities of IoT technology for continuous monitoring and flexible management of the learning process. The proposed framework for IoT application in educational activities will facilitate the adaptation of studying process at universities to the new circumstances.</p>

2.	Idea / Solution description	IoT is a network of physical entities (video cameras, wearables, office equipment, domestic appliances, vehicles, buildings and so on) with embedded sensors, software and executive mechanisms. These are connected to the Internet in order to collect and exchange data amongst themselves. According to this definition, IoT is a technology capable of changing the economic and social processes and eliminating the need for human intervention.
3.	Novelty / Uniqueness	The main purpose of using IoT in education is creating an environment that supports knowledge acquisition in a new, natural and efficient manner consistent with the learners' needs and expectations. IoT in education has many advantages, which include: 1) creating interactive smart classrooms and smart labs; 2) realizing personalized interactive models of education where students are proactively engaged in the learning process; 3) stimulating learners' creativity; 4) real-time reporting of the students' cognitive activities.
4.	Social Impact / Customer Satisfaction	Colleges and universities can benefit from IoT systems as they do from traditional systems (in building automation, energy management, building and space access, environmental control for research experiments, and safety) for the members of the community and visitors [8], [9], [10].
5.	Business Model (Revenue Model)	The proposed IoT framework manages educational process during remote learning in an electronic environment. It administers both teaching (during lectures, seminars and laboratory classes), and examination processes. The input data are provided by a set of IoT sensors (web camera, microphone, wearable devices) for each student. The system registers and collects realtime streaming data. Data transmission from sensor to receiver like computer or smartphone is realized through wire or wireless technology (Bluetooth, Zigbee, Cognitive Radio Network or other). IoT hub connects the students' devices with task-specific software for data storage and

		processing in Cloud Storage. Collected data are analyzed in real-time by using Stream Analytics and Machine Learning (ML) algorithms in the Cloud. The lecturer receives the results on his dashboard and reacts promptly, changing his pedagogical approach (for teaching or examination).
6.	Scalability of the Solution	The IoT enables lecturers to boost operational efficiency in online learning environment. IoT can support classroom instruction by improving learning settings, methods and techniques, enhancing learning resources, raising management efficiency, and saving management costs. The resources available for learning on devices, like e-books, are more engaging and interactive. However, there is a constant need for new technologies in educational activities, for instance, high-speed wireless networks with the bandwidth for streaming audio and video lessons, and learning analytics [11], [12].