



2021 Virtual HBCU-UP/CREST PI-PD Meeting



# Targeted Infusion Project: Infusing Innovative IoT Technologies into the Computer Science Curriculum at Prairie View A&M University

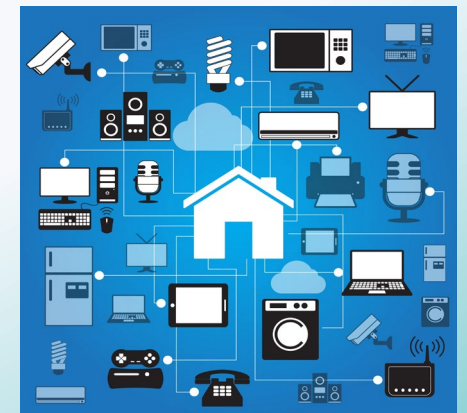
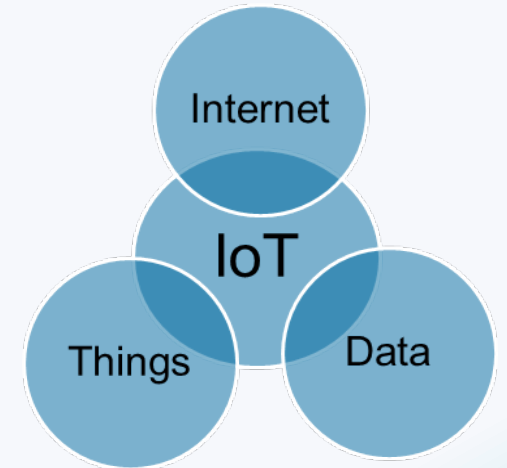
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All findings and opinions are those of the authors, not necessarily of the funding agency or AAAS.

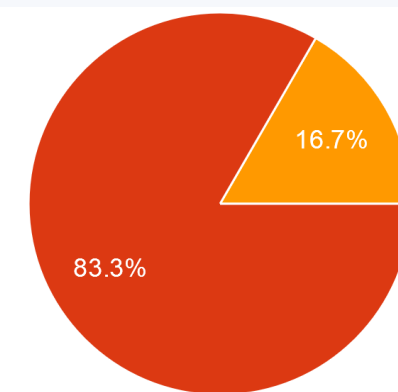
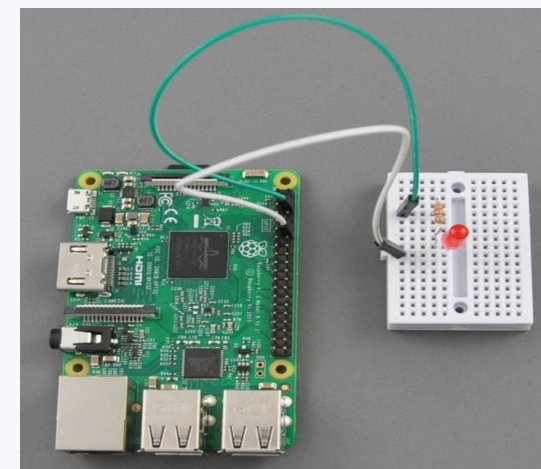
# Project Overview

- The overarching goal of this project is to increase the learning and research capabilities at HBCUs in Internet of Things (IoT) and Data Science.
- This TIP project has four main objectives:
  1. Develop innovative IoT learning modules and a new IoT course
  2. Build an IoT Innovation Lab at PVAMU
  3. Develop an IoT ecosystem that encapsulates a high-performance big data platform
  4. Foster the educational outreach to the HBCU community by participating in various educational and extension activities at PVAMU



# Best Practices/Successes

- Developed 10 IoT learning modules, including 6 IoT lab experiments. [Click here to access them.](#)
- Integrated the developed IoT modules into 3 courses in Fall 2020
- The pre- and post-surveys showed that students are highly interested in learning more about IoT technologies
- The PI will teach an IoT course in Spring 2021 as a special topic
- A new IoT course proposal is submitted to the University Academic Council (UAC) for review and approval
- Purchased several IoT devices for the IoT innovation lab
- Two undergraduates were recruited by the project in Fall 2020
- The students have been working with the PIs to develop the IoT ecosystem and other innovative IoT experiments



- I have decided I will work in the IoT workforce
- Interested in exploring career options in the IoT field
- IoT is not for me

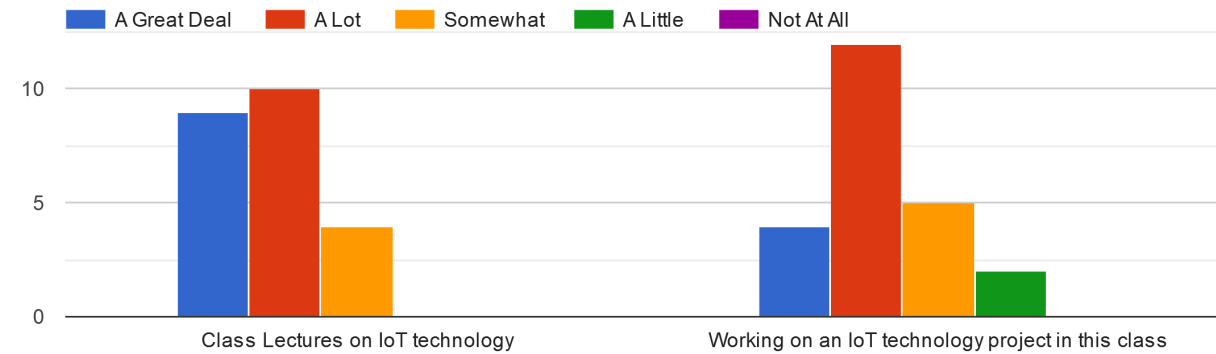
# Implications

- Students are trained with real-world IoT applications and strengthened their hands-on skills



- The IoT modules increased students' understanding of IoT technology in computing, as indicated by surveys.

Use the scale to indicate how much each of the following activities added to your understanding of IoT technology in computing.



# Identified Gap(s) for Future Collaboration or Enhancement

## COVID-19 limits face-to-face activities

- We delivered the IoT online modules
- Setting up the IoT lab is delayed
- Students could not replicate some advanced IoT experiments due to the online delivery of the IoT modules
- Student workers have to work remotely

## Actions to address these gaps

- Provide video recordings of the lab experiments to help students to replicate it.
- Purchased several IoT devices which are used by student remotely
- Schedule weekly meeting with student workers to get updates on their research progress