Temperature & Humidity Sensor Box

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Project Description

For this project, the raspberry pi had to be used to create a building's heat and humidity profile. This was to be done by using sensors to collect temperature and humidity data and then saving it to a local database. A robust, attention-free, easily deployable system had be created that integrates data from different sources and allows a non-technical user to access the building data at any specified time. A website had to be created to save the data from multiple pi's to a remote server that authorized persons could log into. The pi's had to be stored inside of a 3D printed box, and the data from the pi's had to go into an sqlite3 database. From the database, the data had to be transferred into a website, where the three group members can log onto with different login information. A graph for the individual data profile and stacked curves for the cumulative view needed to be made.

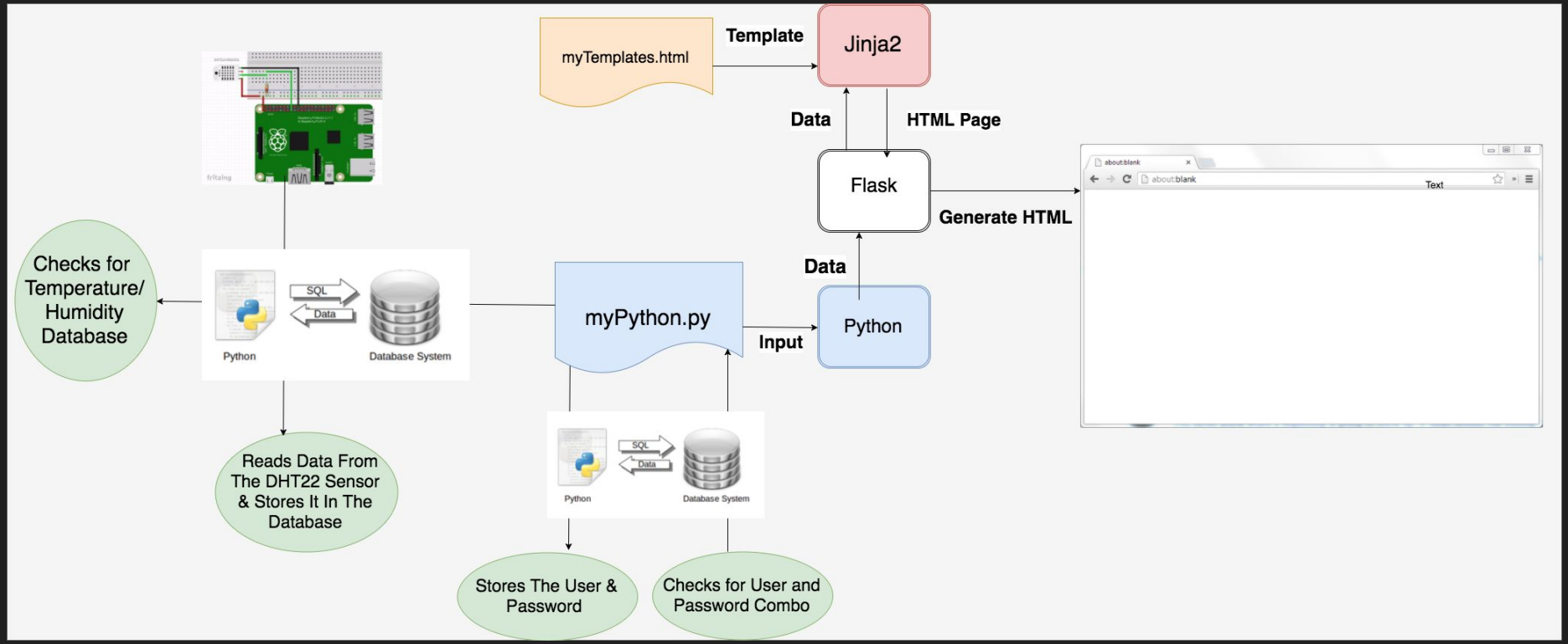
Project Goals

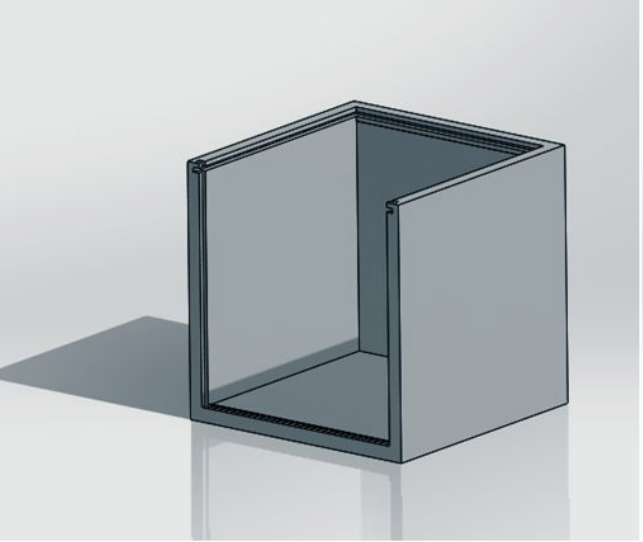
- The pi’s should be inside a box and be easy to use
- The data from the raspberry pi’s should go onto a database
- The website should be able to access the database in order to get data
- The website should be able to receive data from multiple pi’s
- The website should only be accessed by authorized users
- New users should be able to create a username and password to access the website
- The raspberry pi’s should automatically sync data recorded to the website created
- The user should be able to search for temperature and humidity data by date
- The website should automatically create individual data profile graph based on searched data

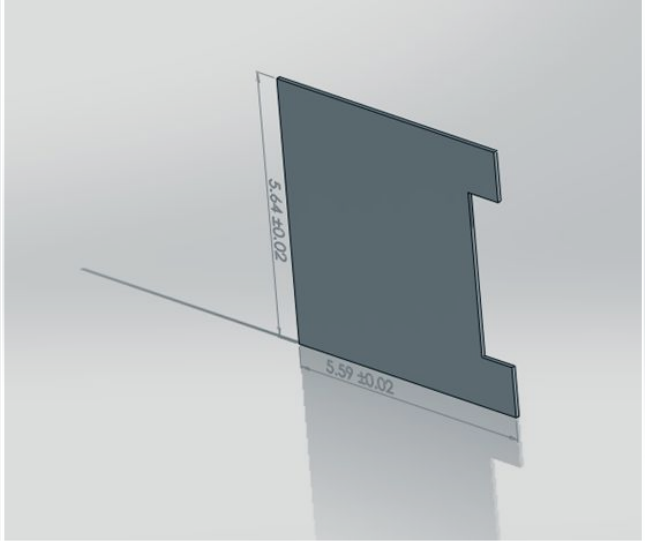
Component Break Up

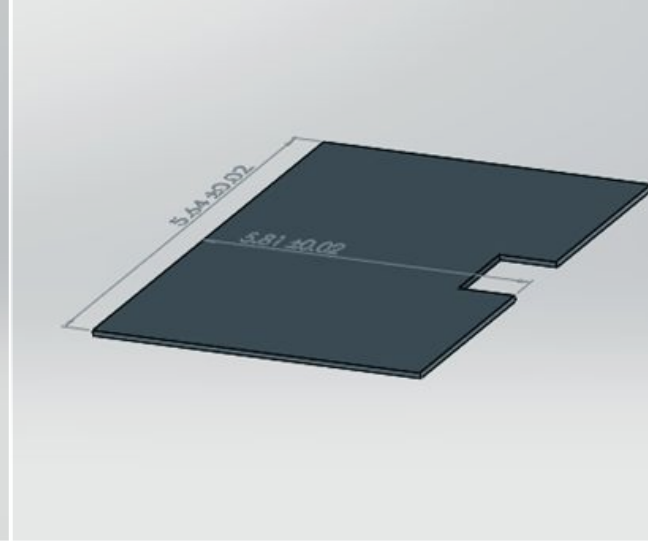
- Collecting data
- Data to database
- Login/create user
- Database to website
- Data to graph
- 3D printed box

Implementation

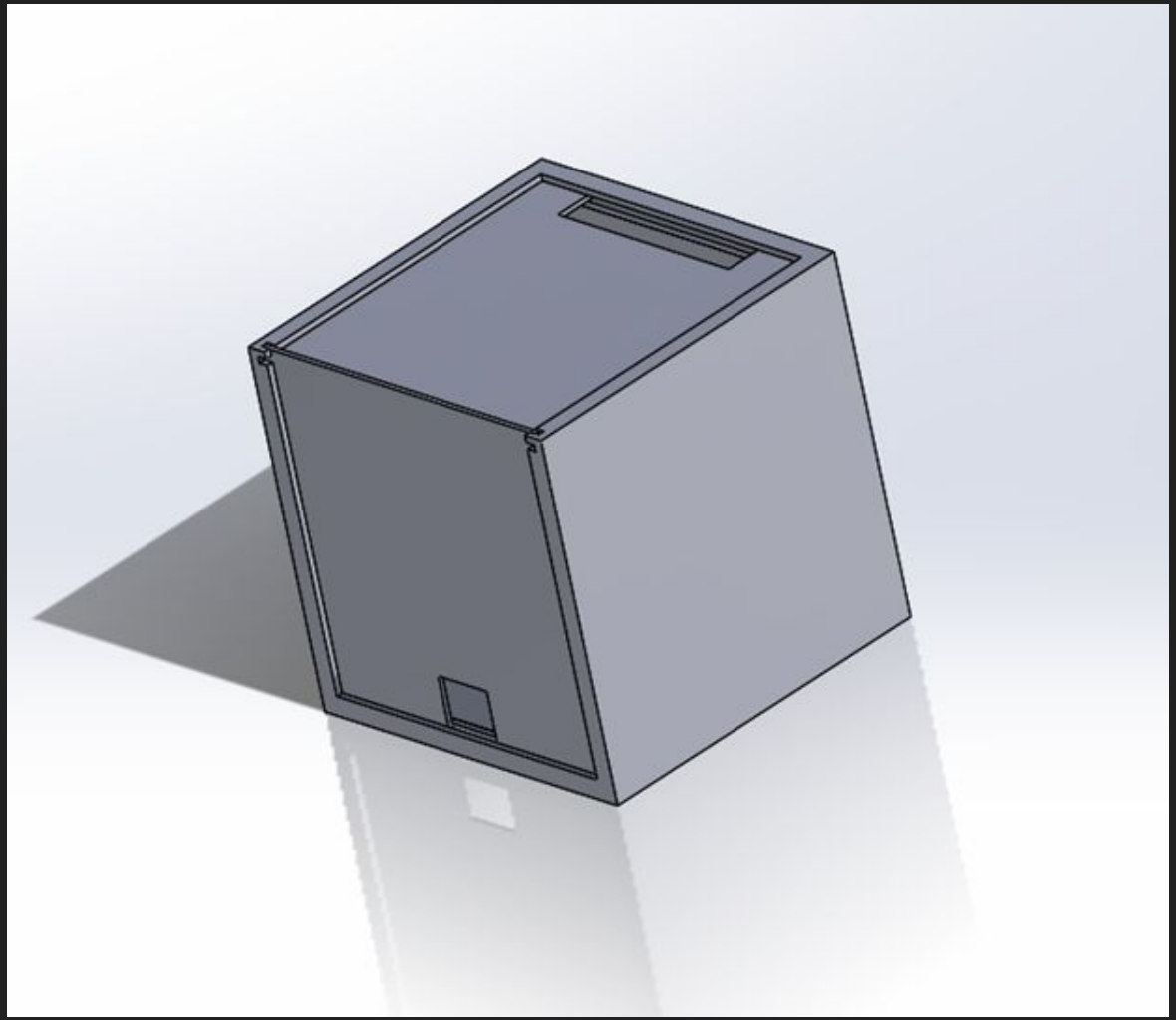








3D Printed Box



Challenges

- “Create user” on website
- Automatic graph of data on website

Learning Outcomes

- Group work
- Time management
- Using Raspberry Pi
- Python, html, CSS, Flask

Questions?