**Objective:** To provide exact location accuracy using BLE (Bluetooth Low Energy) in indoor environments by eliminating multipath effects.

**Problem Statement:** RSS values easily affected by NLOS (Non Line Of Sight) issues i.e., multipath fading. Due to this effect, it might provide poor location accuracy.

**Specific Tasks to be accomplished:**

1. **Data Collection**: BLE dataset [1] was created by Western Michigan University by using 13 ibeacons.
2. **Data Preprocessing:**
3. **Data Cleaning:** Task should be done as the dataset had missing values.
4. **DBSCAN Algorithm [2]:** It is one of density-based methods to discover the clusters with arbitrary shape and also eliminate outliers effectively.

**Parameters:**

1. **Eps**
2. **MinPts**

**Timeline:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AIM** | **September 2st - 6th** | **September 9th – 13th** | **September 16th – 20th** | **September 23rd – 27th** |
| **Data Collection and preprocessing** |  |  |  |  |
| **Feature Extraction** |  |  |  |  |
| **Proof of Concept** |  |  |  |  |
| **Additional Work** | **Setting up the laboratory.** | **Reading the BLE dataset and preprocess in Scala language.** | **Need to formulate the hypothesis.** | **Try to program DBSCAN algorithm after the preprocessing step.** |

**References:**

**[1]** M. Mohammadi and A. Al-Fuqaha, “Enabling Cognitive Smart Cities Using Big Data and Machine Learning: Approaches and Challenges,” *IEEE Communications Magazine*, vol. 56, no. 2, pp. 94–101, 2018.

**[2]** Y. Zhang, D. Li, and Y. Wang, “An Indoor Passive Positioning Method Using CSI Fingerprint Based on Adaboost,” *IEEE Sensors Journal*, vol. 19, no. 14, pp. 5792–5800, 2019.