Object Oriented Programming

Class BSCS-8AB

Assignment No. 2

Deadline: April 5th, 2019

The IoT technology is widely adopted worldwide where sensors are used to monitor the environment. SensorTag is a USA based company which manufactures sensors for various industries. A sensor is a device that detects and responds to some type of input from the physical environment. The specific input could be light, heat, motion, moisture etc. The company designs the following:

- For automotive industry they designed a sensor which generates temperature, rpm and fuel-status.
- For agriculture industry they designed to monitor humidity-level, temperature, soil-condition, and water-level.
- For Data Center related sensors, they included humidity-level, temperature, light-detector and object detector.

Now, they are interested to design an Application Programming Interface (API) to manage the various values (data) generated by each sensor. Your responsibility is to design the API by working on:

- Identify all potential classes along with their attributes <**should be part of design document**>.
- Apply Inheritance and polymorphism rules, refine identified classes and convert into **is-a** relationship. You must mention that which attribute belongs to which class. Only name of classes and relationship between them will not be considered. <**should be part of design document**>.
- Implement your designed classes using OOP concepts in java.
- Write a small test application in Java to check all the functionalities.

You need to identify all the classes, attributes, functionality/methods provided by the sensors and then implement those classes. This will include reading and exploring about sensors also. Design document includes the UML class diagram.

Bonus: Design and implement an interface to access the core features of the API.

Submission: Please create zip file of design document, all source files (java file) and name it <YOURNAME_REGNO>.zip and upload on LMS before the deadline. The deadline will not be extended. Plagiarism in assignments will lead to zero marks.