**Homework 3**

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1. Assumptions:
   1. **In sensor-data it is assumed that after given interval of time sensor will read a value.**Sensors can malfunction i.e. not necessarily sensors will read a value after certain given period, in projects 1-3 there is no functionality to check if the sensor is malfunctioning
   2. **All the sensors will be in given sensor-type.**There is no functionality to check whether the sensor is in one of the given sensor types.
   3. **No missing values.**No functionality to validate if there are any missing values except from values in sensor-data.

Inconsistencies:

1. **Requirements do not specify to check if the sensor is valid** (function addSensorData())

If a new sensor-data is added in the sensor-data database, there is no functionality check if the sensor is valid sensor i.e. available in sensor database

1. **Requirements do not specify to check if the sensor-type is valid** (function addSensors())  
   If a new sensor is added in the sensor database, there is no functionality check if the sensor has a valid sensor-type i.e. available in sensor-type database
2. Reference: <https://www.quora.com/Why-dont-payment-gateway-pages-support-Back-Button-Refresh>
   1. **The operations are not idempotent** i.e. clicking button more than once or refreshing the page can cause same process to happen more than once for the same session   
      E.g. in a payment gateway if pay button is clicked more than once then it is possible that user is charged more than once for a product .
   2. **Making use of “requests status”.** 
      1. Considering case of payment gateway, when the “pay-button” is clicked it will make a request (e.g. POST request) to the server and until the payment is successful, we can have the **“post request status”** as **“pending”** for that particular **sessionID**.
      2. If we check the request status every time a pay button is clicked,   
         Make a request only when status is empty/not busy and stop a request when status is in pending state with appropriate response message to the user stating “initiated transaction is under process”
   3. Select Boxes:
      1. In the HTML forms, if given multiple **options are many** i.e. user will need to keep scrolling the form to select the option e.g. list of all the countries in the world and user needs to select one of the them, then we should use select boxes. So user will not need to scroll through the web-page
   4. Radio Buttons:
      1. In the HTML forms, given a multiple choice of options, if users’ needs to **select just one** of the options then we need to use radio buttons
   5. Checkboxes:
      1. In the HTML forms, given a multiple choice of options, if users’ needs to **select just one** **or more** of the options then we need to use checkboxes
3. A
   1. Tr
   2. Tr
   3. False, it is not necessary, but it is common practice to have js in the head section
   4. True, if the CSS file is not same for all the HTML pages and should be reloaded with every different HTML page, then it is a good idea to have both CSS and HTML in same file. It decreases the page load time as all the required code is in same file.
   5. True