

CSE563: Internals of Application Servers

Spring Semester 2021

Lecture Notes and Class Quiz

Instructor: **Ramesh Loganathan**

Class Topic: **Project Discussion**

Date: **08/03/2021**

Summary:

This Lecture covered the application artifacts and application flow using the Cooling Efficiency solution.

Sensor types:

1. Temperature Sensor
2. Motion Sensor
3. Energy Consumption Sensor
4. Humidity Sensor, etc.

Controller types:

1. Fan Speed Controller
2. AC Temp Controller, etc.

Algorithm Interface template:

1. Name of the algorithm
2. Sensors (8 inputs)
 - a. Fan 1
 - b. Fan 2
 - c. AC 1
 - d. Temp 1
 - e. Motion 1
 - f. Energy consumption 1
 - g. Humidity 1
 - h. People detection sensor 1
3. Controller (3 controls)
 - a. Fan 1 controller
 - b. Fan 2 controller
 - c. AC1 controller
4. Notification
 - a. High Temp Alert
5. Scripts File Names (algorithm logic)
6. Sensor Types details

Cooling_Algo():

1. Read from AC 1 sensor
2. Control temp of AC 1
3. Notify
4. Repeat step 1 until some exit condition.

All the codes(scripts) and config.xml are combined into **one zip or tar file** for deployment.

Application Flow:**A. Develop**

Application Developer will create application scripts. It will make the config.xml file which tells the platform how to use that application and what are the different types of sensors will be there, and other necessary things needed to run the application.

B. Deploy

- a. Application Structure logic exists and then it goes into the repository.
- b. Check whether the files our Platform can understand or not
- c. Config.xml exists and in formatted in the way that platform expect or not
- d. Is script file (code) exist or not
- e. After we validate all this and then, we check whether sensor types exist in the platform or not.

C. Configure

- a. Scheduling
- b. Sensor binding
- c. Configure according to location

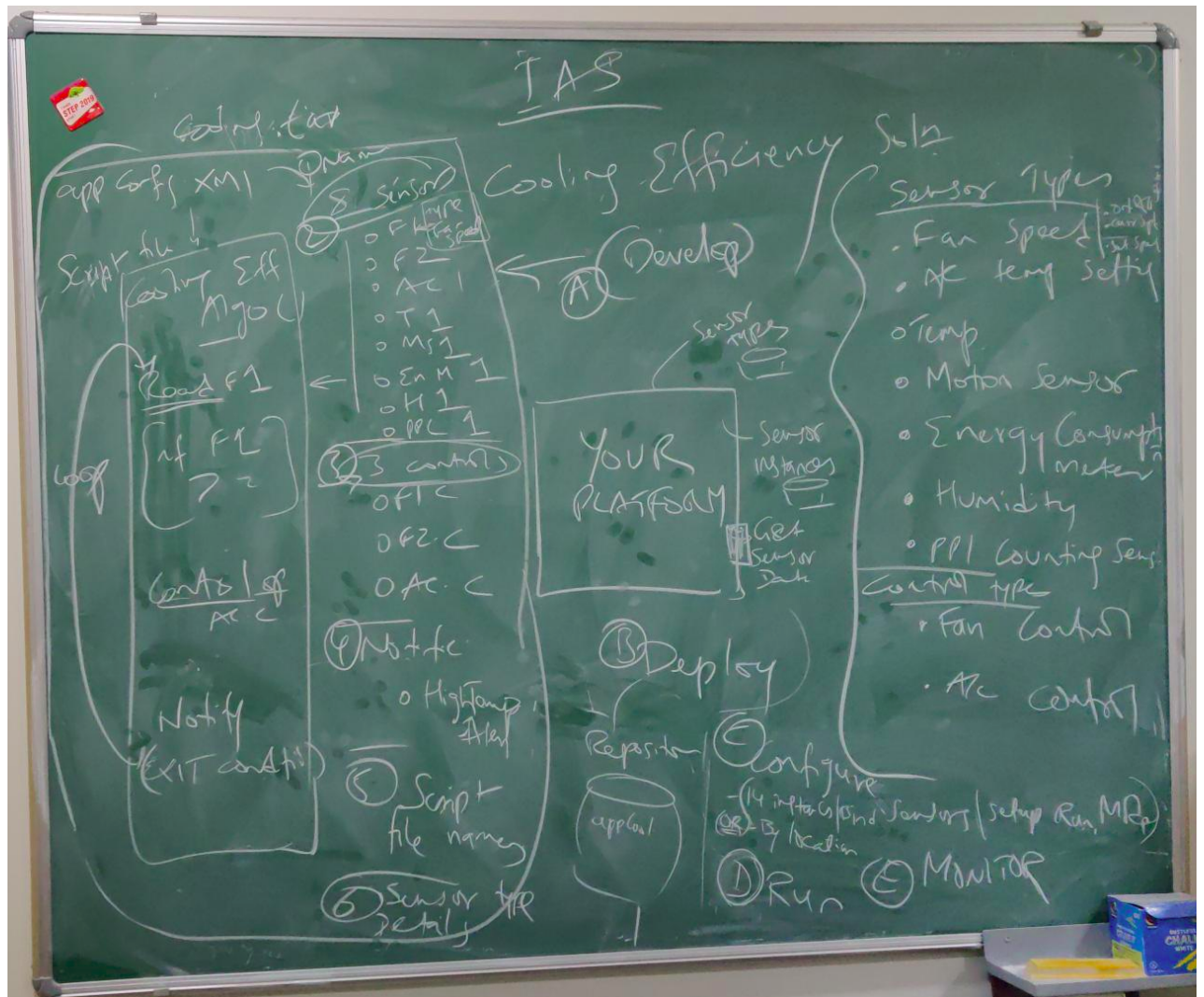
Eg: create 14 instances and then, application is binded with these sensor instances and we setup the run mode.

Run modes:

1. Run it continuously
2. Run it on scheduled time
3. Run it on demand

D. Run**E. Monitor**

Board Snapshot:



Class Quiz 3Qs:

Question 1: Define 3 applications that can be built on your platform. Purpose, Sensor types, algorithms/processing needed with interfaces.

Question 2: Give a schematic diagram of the **Big picture** of your application development model.

Question 3: Describe the key elements of it.

Question 4: What are the various roles of users that come into play in my platform?

Question 5: List the key steps in the whole application development process.

Submission Format:

1. The quiz answers can be hand-written or typed.
2. Submit it as Roll_Number.pdf.