

## UMKC HACKATHON 2015



### "NETWORK TOOL HANDLER" **(Ericsson Case Study #1)**

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## **Project Problem Statement:**

Ericsson has several network monitoring tools running in their office environment. And they are looking for one place to do maintenance and housekeeping for all the tools. For each tool they have 3 entities:

**1) Elements:** Each of our tools has a list of elements. These elements can vary by the tool. For simplicity, we would keep that element-tool has one-one mapping.

**2) KeyPerformanceIndicators:** Key performance indicators play a crucial part in determining status of element, which we are monitoring. Each tool will have several KPIs and they will have values from 0 to 100. KPIs can be less than or greater than which we should see in database.

**3) Schedule:** As performance of elements on tool can vary by the schedule. For example, in the night there would be low calls than the day. So, we should have a option of adding more than one schedule to the system. Please, make sure schedule entries should cover all 24 hours at all the time. And KPIs table should have similar entries like if we have 2 schedules then we should have 2 times repeated values in KPIs with different schedule ID's.

## **Requirement Specification:**

1) Web based interface for all the 3 entities where:

For each element typical activities includes: Adding new elements to the tools, disabling elements and editing the elements.

For each KPI typical activities includes: Adding new kpi's to the tools, disabling kpi's and editing the kpi's (do validation of 0 to 100).

For each schedule typical activities includes: Adding new schedules to the tools, disabling schedules and editing schedules (do validation of 24 hours).

2) A Web View where user can pass current time and it would return KPI values for elements by looking at 3 entities.

3) A history module through which the user can view the previous updates details.

## **Our Solution Design:**

As per our solution we created a dashboard with 6 modules as follows:

**1) Tool Management:** In this module, a user is able to add, edit or disable a tool.

**2) Element Management:** In this module, a user is able to add, edit or disable an element belonging to a particular tool.

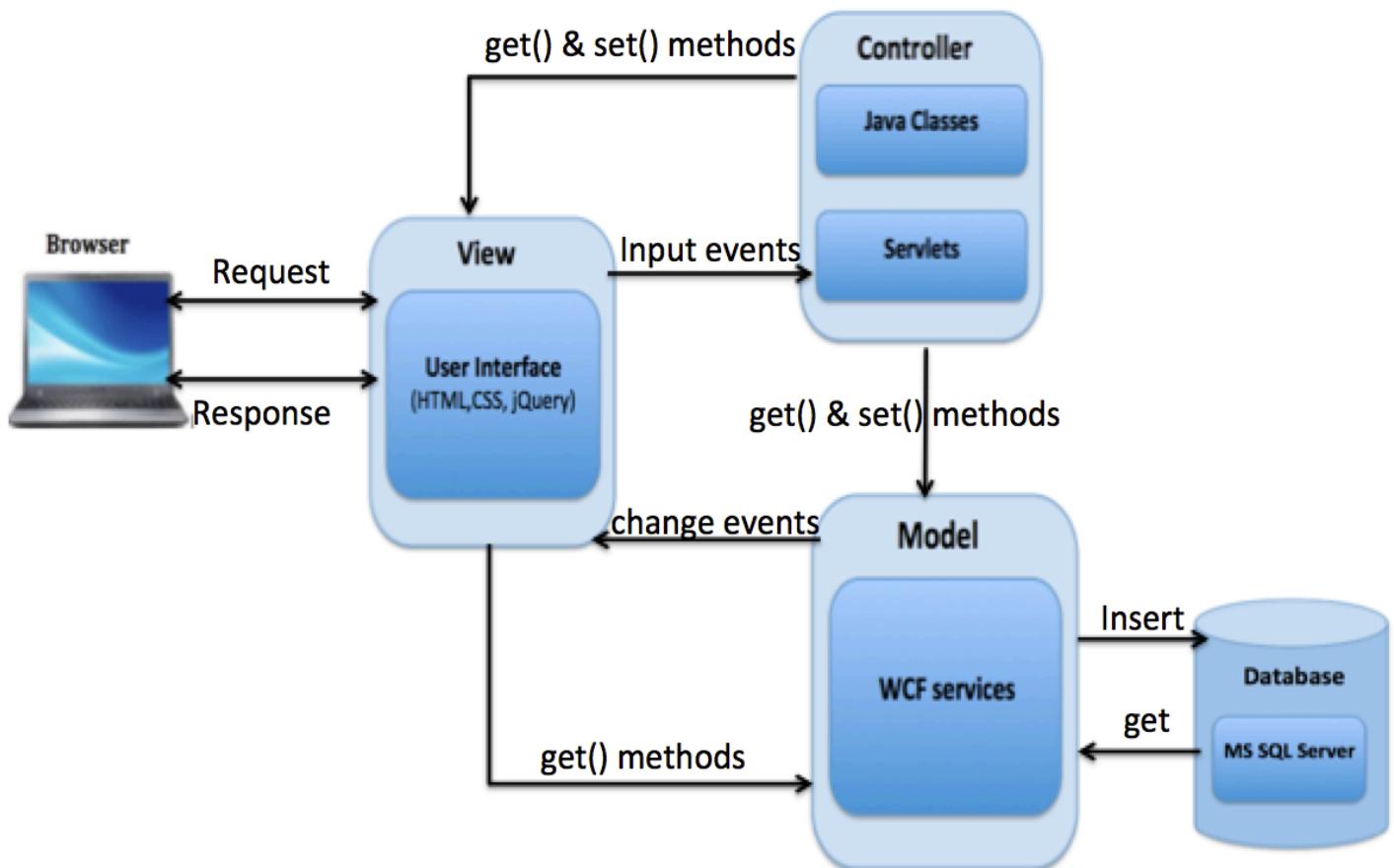
**3) KPI Management:** In this module, a user is able to add, edit or disable a KPI belonging to a particular tool while validating KPI values only from 0 to 100. If a user tries to add a KPI value, which is greater than 100 then system will throw an error.

**4) Schedule Management:** In this module, a user is able to add, edit or disable a schedule belonging to a particular tool while validating the sum of the entire schedule's to be 24 hours. If a user tries to add a schedule through which the total schedule addition becomes greater than 24 then system will throw an error.

**5) History Management:** **In this module**, a user is able to view the previous 10 updates details like Updated time, Updated By.

6) Current KPI Module: **In this module**, a user can pass current time and it would return KPI values for elements by looking at 3 entities.

## **System Architecture:**



## **Technologies Used:**

- 1) User Interface:** HTML, CSS, and JQuery
- 2) Request/Response:** Servlets and JSP
- 3) Language:** Java
- 4) Rest Services:** WCF Services
- 5) Database:** MS SQL Server

## **Implementation:**

### **1) Login Page:**



The image shows a screenshot of a web application for the UMKC Hackathon 2015. At the top, the text "UMKC HACKATHON 2015" is displayed in large white letters against a black background. Below this is a photograph of a large, stone, multi-story building with arched windows and a red-tiled roof, identified as the University of Missouri-Kansas City (UMKC) campus. In front of the building, there is a green lawn and several people walking or standing. The main form area has a dark gray background. At the top of the form, the text "ENTER LOGIN DETAILS" is centered in white. Below this, there are two input fields: "Login:" followed by a yellow button containing the text "UMKC", and "Password:" followed by a yellow button containing the text "....". At the bottom of the form is a blue "Submit" button.

## **2) Dashboard Page:**

Dashboard

Home   Tool Management   Element Management   KPI Management   Schedule Management   History Management

The dashboard page features a dark background with a grid of six management modules arranged in two rows of three. Each module includes an icon and a label below it.

- Tool Management:** Icon shows two white figures pushing large red gears. Label: Tool Management.
- Element Management:** Icon shows three colorful 3D figures interacting with a 3D bar chart. Label: Element Management.
- KPI Management:** Icon shows a large red button with the word "KPI" in white. Label: KPI Management.
- Schedule Management:** Icon shows a red clock face with a green arrow pointing to approximately 10:10. Label: Schedule Management.
- History Management:** Icon shows a stack of four books with the word "HISTORY" visible on the bottom book. Label: History Management.
- CurrentTimeKPI:** Icon shows a clock face with the text "IT'S ABOUT TIME" overlaid in red. Label: CurrentTimeKPI.