**How to Create a Watch Face Using Tag Expressions**

Creating a custom watch face is a fun and creative process, especially with Samsung’s **Watch Face Studio**. One of its most useful features is **Tag Expressions**, which allows you to make watch faces dynamic and interactive.

In this guide, I’ll show you how to use Tag Expressions to create a simple analog watch face that includes a battery level display that changes color based on the battery percentage. This is based on a project I worked on.

**What Are Tag Expressions?**

Tag Expressions let you use smartwatch data, like battery percentage or time, to change the behavior or appearance of elements on the watch face. They use tags, which are placeholders for data.

Some useful tags are:

* [BATT\_PER]: Battery percentage
* [HR]: Current hour in 12-hour format
* [STEP\_CNT]: Step count

This means if the battery is 20% or lower, the color will be red (#FF0000). Otherwise, it will be white (#FFFFFF).

**Steps to Create the Watch Face**

**Step 1: Set Up Watch Face Studio**

1. Download **Watch Face Studio** from [Samsung Developer Tools](https://developer.samsung.com/watch-face-studio/).
2. Open the tool and create a new project.
3. Choose the **Analog Watch Face** template.

**Step 2: Add Basic Watch Elements**

1. **Add Watch Hands**:
   * Use **Add Component > Hand** to add hour, minute, and second hands.
   * Position and style them to fit your design.
2. **Add Hour Markers**:
   * Use **Add Component > Index** to add hour markers around the watch face.

**Step 3: Display the Battery Level**

1. **Add a Text Component**:
   * Go to **Add Component > Text**.
   * Place it on the watch face where you want the battery percentage to appear.
2. **Set the Text Content**:
   * In the **Properties Panel**, set the text to [BATT\_PER] to display the battery percentage dynamically.

**Step 4: Change Battery Color with Tag Expressions**

1. **Open the Text Color Settings**:
   * Select the text component showing the battery level.
   * In the **Properties Panel**, find the **Text Color** option.
2. **Add a Tag Expression**:
   * Click the Tag Expression icon (it looks like a tag symbol).
   * Use this expression:
   * [BATT\_PER] <= 20 ? #FF0000 : #FFFFFF
     + If the battery level is 20% or lower, the text will turn red.
     + Otherwise, it stays white.
3. **Test It**:
   * We can Use the **Preview Mode** to check how the text color changes with different battery levels.

**Step 5: Finalize and Export**

1. **Preview my Watch Face**:
   * Have to check the design and functionality in the preview.
   * Simulate different battery levels to ensure the color change works.
2. **Export the Watch Face**:
   * Then have to go to **File > Build** and export the project as a .gwd file.
   * Transfer it to a smartwatch for testing.

**More Ways to Use Tag Expressions**

Here are other examples of what you can do with Tag Expressions:

1. **Daily Step Goal Tracker**:
   * Show progress with colors:
   * [STEP\_CNT] >= 10000 ? GREEN : GRAY
2. **Switch Themes Based on Time**:
   * Change the background for day and night:
   * [HR\_24] >= 18 || [HR\_24] < 6 ? #000000 : #FFFFFF

**Conclusion**

Tag Expressions significantly enhance the interactivity and intelligence of watch faces. They are straightforward to use and add considerable value to watch face designs by enabling real-time changes based on data inputs. Whether it is changing colors, switching themes, or tracking progress, the possibilities with Tag Expressions are vast and varied.

By following this comprehensive guide, designers can unlock the potential of Tag Expressions to create truly remarkable and dynamic watch faces. For more inspiration and ideas, the Samsung Developer Blog is an excellent resource. Experiment, innovate, and see what extraordinary designs you can create with Tag Expressions.