**One – Aggregate-formulas**

Hello and welcome. I’m Rohan and in this tutorial, I'll talk you through how to create Formula Configuration in ITANTA’s Formula Builder.

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1. The first thing we are going to do is open the Itanta Formula Builder tab.
2. Here, we can see the list of already configured formulas on left side.
3. To create a new formula click on Add new formula button on top.
4. Once you click on Add you’ll be redirected to new screen where we need to provide basic configurations for the formula.
5. Let’s give formula a name, result collection where we need to store the calculated results along with start interval configuration in terms of day and starting hour and minutes. This is the time from which onwards we’ll start calculating results for the formula.
6. And last let’s give the logging frequency in seconds.
7. Logging frequency 1 means it’s a Absolute data logging where the formula will be calculated on each document while frequency greater than 1 means aggregate data logging where formula is calculated over the aggregated result for the interval.
8. In this formula of OEE we need every 5 minutes results, hence let’s give frequency as 300secs.

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* This is our configurations page for the formula
* First let’s add a new tag by clicking on add button in left.
* Once tag is added in top right side , we’ll click on it to configure it.
* Once clicked on saved tag, you can see it in configurating tag section.
* Now let’s select the data-source
* Once the data-source is selected we can see it’s tag in below left section.
* Now let’s create a actual formula
* First we want to calculate total products formed in the interval
* Let’s give this tag name as PodCount and let’s give the sort time column as Date\_Time from the data-source.
* So lets drag TOTAL\_COUNT tag and drop it in dropzone along with aggregator last.
* And let’s also drag subtraction from operators section and drop it in dropzone.
* Now let’s subtract this from TOTAL\_COUNT’s first value in the interval.
* As you’re dragging and dropping tags , aggregators and operators on the above right side, you can see the live time changing hierarchy of the formula.
* Once all the configurations for the tag are given, click on save tag button to save the tag.
* You can again click on this saved tag and edit anytime.

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* Similarly let’s create new tag for rejection in the interval
* For that let’s add a tag, click on it to configure and start dragging and dropping required tags and aggregators.
* By using same philosophy we can construct formula for total avail time and total Loss in the interval.

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* Lastly we need one more tag value i.e.. Ideal cycle time for the product
* Let’s add it as the first value of ideal cycle Tag

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* We’re done with the aggregated tags, so let’s save the final tag and also save the formulas.
* Once the formulas are saved you’ll see a message saving formula saved successfully and you’re good to go
* Thank you

**Two – Absolute-formulas**

Earlier we saw the configurations for aggregation based data logging , now let’s have a walkthrough absolute data logging.

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* Again let’s open formula builder
* You can see our previous formula here.
* Let’s add new formula
* Lets’s give similar basic configuration we gave as last time, but this time let’s give logging frequency as 1 i.e.. absolute data logging.
* Meaning we’ll apply formula on every document and write it’s results to given result collection.

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* This is our configurations page for the formula exactly similar to the previously shown
* Now let’s create tag and let’s start configurating it.
* Let’s select data source.
* First we want to quality which is total product formed subtracted by the rejection and the overall result is divided by the total products formed.
* For this let’s use bracket support and construct the formula by drag-drop of tags and operators.
* We’ve selected the data source which is result collection formed by our last formula , hence you can directly reuse the tags calculated by our last formula here.
* Here in the absolute data logging aggregators are not allowed as the formula is getting calculated on each document.
* Once the formula is valid you’ll be able to see it’s tree view as well.
* Now let’s save the tag for quality and let’s calculte avialability.
* Once availability tag is configured we’ll save the tag and go formula Performance calculations.

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* Once we are done with Quality , Availability and Performance ; Let’s add our final tag i.e.. OEE which is quality times availibility times performance
* Here you can use the tags which are configured right now by us.
* Once the formulas are configured let’s save them by clicking on save formula button and the calculations will start immediately according to the configured formulas.
* Let’s move to dashboard to see the tree view of formula i.e.. OEE.
* Thank you

**Three - Dashboards**

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* Once all the formulas are configured let’s move to ITANTA to see the results and insights of the calculated data.
* Here first we’ll plot a table on the raw data collection.
* You can see the actual data over here

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* Now let’s plot a new dashboard on calculated data source.
* First let’s plot a table on the calculated OEE formulas.
* Here you can see the reuslts of the calculated data.
* You can define your shifts in Itanta, apply different filters and analyze the data the way you want.
* Thank you and Enjoy

Thank you for your time.