In the second part of this project, you will set up an *alarm* rule chain to send information about data above a certain threshold to Firebase. The data you will use is live *streaming* from the MQTT protocol you set up in [Project 24.1: Project 1 Part 1](https://classroom.emeritus.org/courses/10605/assignments/246367). You will begin by setting up the *alarm* rule chain. Next, you will connect the *alarm* rule chain to your Realtime database in Firebase. Finally, you will connect the Root Rule Chain to the *alarm* rule chain and verify that the data is correctly sent to Firebase.

This project will build on what you did in Project 24.1. Therefore, complete all of the steps of Project 24.1 before attempting Project 24.2.

**To complete this project, follow these steps:**

1. Navigate to Firebase. In the module24Project Realtime database, create a new field titled alarms and initialize the corresponding field to zero.  
   Provide a screenshot to show that you created the alarm field inside your Realtime database and initialized it to zero.
2. Navigate to the ThingsBoard home page. Create a new rule chain titled “CreateAndClear*Alarms*” by following the steps shown in [Mini-Lesson 24.5](https://classroom.emeritus.org/courses/10605/pages/mini-lesson-24-dot-5-setting-up-alarms-in-thingsboard-30-00).  
   Provide a screenshot to show that you created the CreateAndClear*Alarms* rule chain with all of the necessary components.
3. Create another rule chain and name it “TempToFirebase”.  
   Provide a screenshot to show that you created the TempToFirebase rule chain with all of the necessary components.
4. Open the TempToFirebase rule chain. Add a “rest API call” *node* and name it “TempToFirebase”. Replace the default link with the following link:  
   https://module24project-default-rtdb.firebaseio.com/temperature.json  
   Select “Add” to add the TempToFirebase *node* to your Rule Engine. Connect the Input and TempToFirebase *nodes*.  
   Provide two screenshots. The first screenshot should show that you added the TempToFirebase *node* to your Rule Engine correctly. The second screenshot should show that you connected the Input and TempToFirebase *nodes*.
5. Create another rule chain and name it “*Alarm*ToFirebase”.  
   Provide a screenshot to show that you created the *Alarm*ToFirebase rule chain with all of the necessary components.
6. Open the *Alarm*ToFirebase rule chain. Add a “rest API call” *node* and name it “*Alarm*ToFirebase”. Replace the default link with the following link:  
   https://module24project-default-rtdb.firebaseio.com/alarm.json  
   Select “Add” to add the *Alarm*ToFirebase *node* to your Rule Engine. Connect the Input and *Alarm*ToFirebase *nodes*.  
   Provide two screenshots. The first screenshot should show that you added the *Alarm*ToFirebase *node* to your Rule Engine correctly. The second screenshot should show that you connected the Input and *Alarm*ToFirebase *nodes*.
7. Open the CreateAndClear*Alarms* rule chain that you created in Step 2. Add a “rule chain” *node*. Title this *node* “*Alarm*ToFirebase” and select *Alarm*ToFirebase as the rule chain. Select “Add” to add the *Alarm*ToFirebase *node* to your Rule Engine.  
   Provide a screenshot to show that you added the *Alarm*ToFirebase *node* to your Rule Engine correctly.
8. Connect the Create*Alarm* and *Alarm*ToFirebase *nodes.* Add “Created” as the link label.  
   Provide a screenshot to show that you connected the Create*Alarm* and *Alarm*ToFirebase *nodes* with a Created link label.
9. Add another “rule chain” *node* to the CreateAndClear*Alarms* rule chain. Title this *node* “TempToFirebase” and select TempToFirebase as the rule chain. Select “Add” to add the TempToFirebase *node* to your Rule Engine.  
   Provide a screenshot to show that you added the TempToFirebase *node* to your Rule Engine correctly.
10. Connect the MaxTemp and TempToFirebase *nodes.* Add “True” as the link label.  
    Provide a screenshot to show that you connected the MaxTemp and *Alarm*ToFirebase *nodes* with a True link label.
11. Open the Root Rule Chain in ThingsBoard. Add a “rule chain” *node*. Name it “CreateAndClear*Alarm*” and select CreateAndClear*Alarm* as the rule chain. Select “Add” to add the CreateAndClear*Alarm* *node* to your Rule Engine.  
    Provide a screenshot to show that you added the CreateAndClear*Alarm* *node* to your Rule Engine correctly.
12. Connect the SaveTimeseries and CreateAndClear*Alarm nodes.* Add “Success” as the link label.  
    Provide a screenshot to show that you connected the SaveTimeseries and CreateAndClear*Alarm nodes* with a Success link label.
13. Navigate to Firebase and open the alarm and temperature fields.  
    Provide two screenshots. The first screenshot should show that the alarm field is populated with the live *streaming* data from the CreateAndClear*Alarm* rule chain. The second screenshot should show that the temperature field is populated with temperature and humidity data.

**Submission Instructions:**

Your submission for this project should be a Word document that includes the following screenshots, each labeled for the step that the screenshot represents:

1. Provide a screenshot to show that you created the alarm field inside your Realtime database and initialized it to zero.
2. Provide a screenshot to show that you created the CreateAndClear*Alarms* rule chain with all of the necessary components.
3. Provide a screenshot to show that you created the TempToFirebase rule chain with all of the necessary components.
4. Provide two screenshots. The first screenshot should show that you added the TempToFirebase *node* to your Rule Engine correctly. The second screenshot should show that you connected the Input and TempToFirebase *nodes*.
5. Provide a screenshot to show that you created the *Alarm*ToFirebase rule chain with all of the necessary components.
6. Provide two screenshots. The first screenshot should show that you added the *Alarm*ToFirebase *node* to your Rule Engine correctly. The second screenshot should show that you connected the Input and *Alarm*ToFirebase *nodes*.
7. Provide a screenshot to show that you added the *Alarm*ToFirebase *node* to your Rule Engine correctly.
8. Provide a screenshot to show that you connected the Create*Alarm* and *Alarm*ToFirebase *nodes* with a Created link label.
9. Provide a screenshot to show that you added the TempToFirebase *node* to your Rule Engine correctly.
10. Provide a screenshot to show that you connected the MaxTemp and *Alarm*ToFirebase *nodes* with a True link label.
11. Provide a screenshot to show that you added the CreateAndClear*Alarm* *node* to your Rule Engine correctly.
12. Provide a screenshot to show that you connected the SaveTimeseries and CreateAndClear*Alarm nodes* with a Success link label.
13. Provide two screenshots. The first screenshot should show that the alarm field is being populated with the live *streaming* data from the CreateAndClear*Alarm* rule chain. The second screenshot should show that the temperature field is being populated with temperature and humidity data.