

Alert System Test Data Challenge

Story

Send an alert when Soft Cap Limit has been breached.

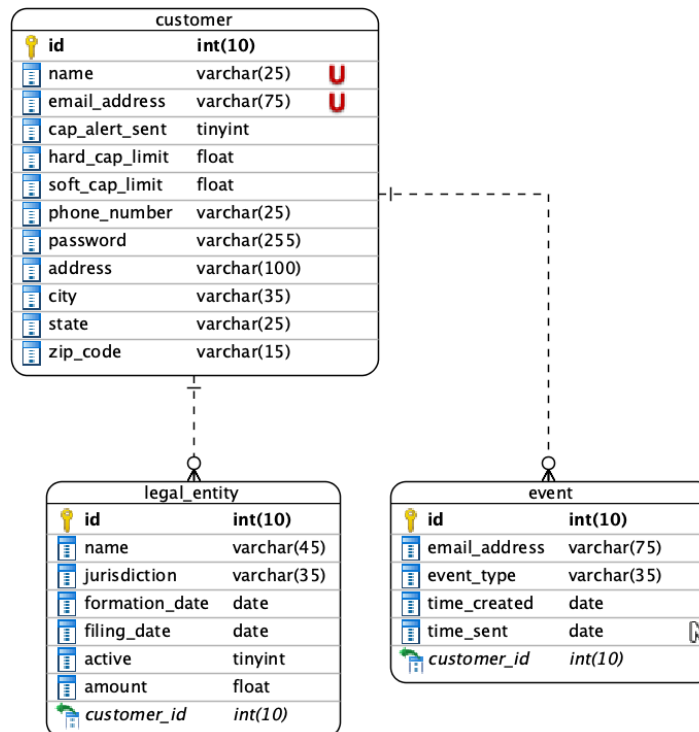
Summary

When a new legal entity is created within a given customer, the system will check whether the number of active entities is less than or equal to 90% of the specified soft cap limit. If the number of active entities is greater than 90% and an email trigger event has not been sent, an email event will be triggered.

Actors

- customer - database table containing customer information
- legal_entity - database table containing new entities associated within a given customer
- event - event database table containing an email event within a given customer
- Stored Procedure - contains business logic to trigger an event
- GenRocket - dynamically populates the customer and legal_entity tables with synthetic test data and calls the Stored Procedure
- Tester - the person or testing tool that runs a test and checks the events table after the test is completed

ER Diagram of Affected Tables



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Chapter 1- All Entities are Inactive

Test that an event is not triggered because all entities are inactive.

- Tester clears customer, legal_entity and event tables
- GenRocket loops 1 time on the customer Domain
 - inserts data
 - id = 100000
 - name = someName
 - emailAddress = someName@example.com
 - hardCapLimit = 200,000
 - softCapLimit = 100,000
 - capAlertSent = False
- GenRocket loops 3 times on legal_entity Domain
- inserts data
 - Id = 1
 - customerId = 100000
 - active = False
 - amount = 50,000
- GenRocket calls Stored Procedure
 - passes data
 - customerId = 100000
- Tester asserts that a row does not exist in event for customerId = 100000
- Tester asserts that the customer.capAlertSent = False

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Chapter 2 - Active Entities do not Surpass Soft Cap Limit

Test that an event is not triggered because all active Entities do not surpass soft cap limit.

- Tester clears customer, legal_entity and event tables
- GenRocket loops 1 time on the customer Domain
 - inserts data
 - id = 100000
 - name = someName
 - emailAddress = someName@example.com
 - hardCapLimit = 200,000
 - softCapLimit = 100,000
 - capAlertSent = False
- GenRocket loops 3 times on legal_entity Domain
 - inserts data
 - id = 1
 - customerId = 100000
 - active = True
 - amount = 30,000
- GenRocket calls Stored Procedure
 - passes data
 - customerId = 100000
- Tester asserts that a row does not exist in event for customerId = 100000
- Tester asserts that the customer.capAlertSent = False

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Chapter 3 - Soft Cap Limit Surpassed and event Not Triggered

Test that an event is triggered when the sum of all active Entities surpass the soft cap limit and an email event has not been triggered.

- Tester clears customer, legal_entity and event tables
- GenRocket loops 1 time on the customer Domain
 - inserts data
 - id = 100000
 - name = someName
 - emailAddress = someName@example.com
 - hardCapLimit = 200,000
 - softCapLimit = 100,000
 - capAlertSent = False
- GenRocket loops 11 times on legal_entity Domain
- inserts data
 - Id = 1
 - customerId = 100000
 - IF legal_entity.id <= 5 THEN
 - active = false
 - amount = 10,000
 - OR legal_entity.id > 5 AND legal_entity.id <= 10 THEN
 - active = True
 - amount = 20,000
 - Else
 - active = True
 - amount = 1
- GenRocket calls Stored Procedure
 - passes data
 - customerId = 100000
- Tester asserts that a row does exist in event for customerId = 100000
- Tester asserts that the customer.capAlertSent = True

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Stored Procedure - SmallCapLimitAlert

This SmallCapLimitAlert stored procedure contains the business logic to be tested.

```
CREATE PROCEDURE smallCapLimitAlert(IN p_customer_id BIGINT)
BEGIN
  DECLARE v_percentage FLOAT;
  DECLARE v_total_amount FLOAT;
  DECLARE v_email_address VARCHAR(75);
  DECLARE v_soft_cap_limit FLOAT;
  DECLARE v_cap_alert_sent BOOLEAN;

  -- get customer information
  SELECT soft_cap_limit,
         cap_alert_sent,
         email_address
  INTO v_soft_cap_limit,
       v_cap_alert_sent,
       v_email_address
  FROM customer
  WHERE id = p_customer_id;

  -- check if alert has already been sent
  IF v_cap_alert_sent = FALSE THEN
    -- get total amount of active entities
    SELECT SUM(amount)
    INTO v_total_amount
    FROM legal_entity
    WHERE customer_id = p_customer_id
    AND active = TRUE;
```

```
    -- calculate the percentage
    SET v_percentage = (v_total_amount / v_soft_cap_limit) * 100;

    -- check is percentage is greater than 90 percent
    IF v_percentage > 90 THEN
      -- create an event alert
      INSERT INTO event (
        event_type,
        email_address,
        time_created,
        customer_id
      ) VALUES (
        'SOFT_CAP_LIMIT_ALERT',
        v_email_address,
        NOW(),
        p_customer_id
      );

      -- set the customers' cap_alert_sent to TRUE
      UPDATE customer
      SET cap_alert_sent = TRUE
      WHERE id = p_customer_id;
    END IF;
  END IF;
END;
```