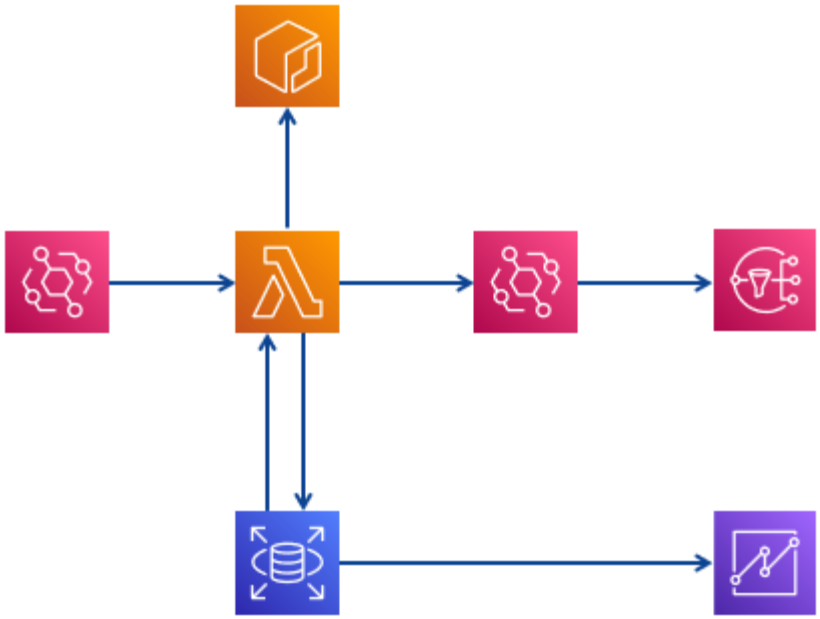
Predictive Maintenance Architecture Design



- Relational Database (RDS)
  - Two tables in database are required:
    1. Table to store sensor readings (1 reading per minute)
    2. Table to store reading along with prediction and prediction probability to visualize it in dashboard.

- Elastic container registry (ECR)
  - Store the code, model, and dependencies to run by lambda function.
  - The dependencies exceed 200 MB so it's necessary to run it through container.

- Simple Notification Service (SNS)
  - Sent a notification topic whenever a failure is detected.
  - Topic subscribers should be (Managers, Engineers, and technicians)

- Lambda Function
  - Has trigger event that triggers the function every 1 minute.
  - The function runs container code which does the following:
    1. Retrieve last sensor's reading.
    2. Make prediction on it.
    3. Insert the prediction in the database.
    4. Sends notification topic if prediction = "Failure"

- Quicksight
  - Visualize predictions in the form of interactive dashboard.

Notes about implementation:

- Lambda function should have the role to:
    1. Access SNS and send topic.

- RDS should allow access for:
    1. Lambda function: read and write.
    2. Quicksight: read only.