Last edited by **Christopher Habib** just now

Test SW Developer Challenge

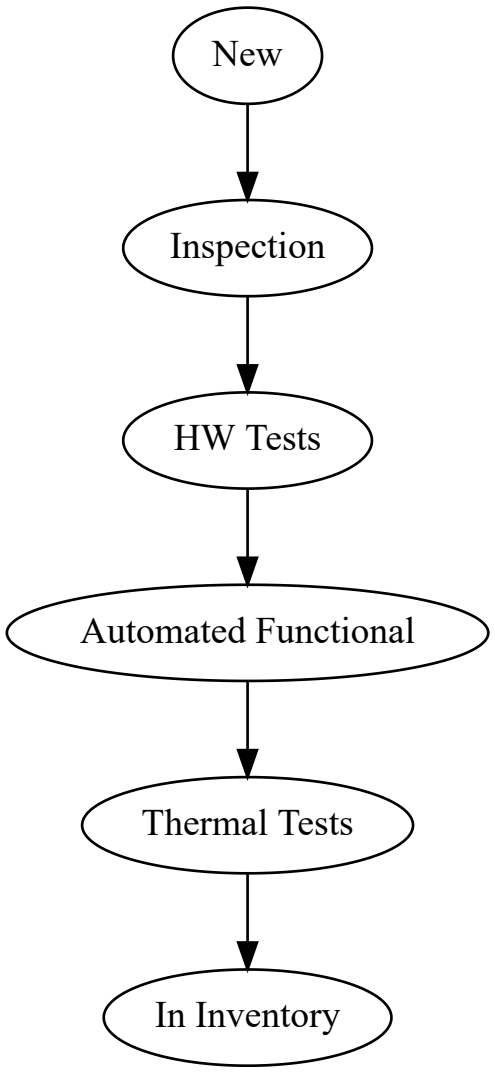
Question 1

Synopsis

Xiphos would like a way to track its inventory through the test flow, and develop a tool to assign boards in inventory to customer orders.

Xiphos uses a database to track it's inventory and the current test stage of each unit produced. To simplify this example, we'll consider 2 units; the DUT (Device Under Test) and DUT-DB (DUT-Daughterboard). The current inventory snapshot is shown in `test_data.csv`.

Each DUT can move between test states without constraints. DUT's and DUT-DB's that have yet to be tested are classified as "New". Then they must follow our test flow by going through inspection, HW Tests, functional tests, and thermal tests before being placed in Inventory.



Once in inventory, DUT's and DUT-DB's can be assigned to a customer order called assemblies. Each assembly can have up to 1 DUT and 1 DUT-DB. A current snapshot of customer orders is shown in `customer_data.csv`.

Each DUT and DUT-DB has the following fields:

- Serial Number: string
- Logic Version: string
- Board Config (Flight Model, Engineering Model, Lab Unit) string

Each Assembly has the following fields:

- Assembly Name: string
- Customer Name: string
- Delivery Date: date
- DUT Serial Number: string
- DUT-DB Serial Number: string

Deliverables

- Final product is to develop a web interface to display inventory
  - There's no requirement on the visual components of this challenge
  - Goal is to complete through Step 4.
- Must be implemented in Python
- Deliver project in a git repository

- Git history will be analyzed
- Provide a readme or other form of documentation to run code

dummy data required

- test_data.csv
- customer_data.csv

Step 1: Display sample data

- Read data from `test_data.csv` and `customer_data.csv`
- Display on a webpage
- The output could look something like this:

Inventory Tracker

New	Inspection	HW Tests	Auto Tests	Thermal Tests	Inventory
DUT-0098 DUT-0099	DUT-1000 DUT-1001	DUT-1003	DUT-1004 DUT-1005	DUT-1006 DUT-1007 DUT-1008	DUT-1009 DUT-1010 DUT-1011

Step 2: Edit data between states

For example, `DUT-xxxx` goes from `Inspection` to `HW Test`. The changes should be displayed on the webpage and exported back to the csv.

Inventory Tracker

New	Inspection	HW Tests	Auto Tests	Thermal Tests	Inventory
DUT-0098 DUT-0099	~~DUT-1001~~	DUT-1003 DUT-1001	DUT-1004 DUT-1005	DUT-1006 DUT-1007 DUT-1008	DUT-1009 DUT-1010 DUT-1011

Step 3: Create new entries

Using the webpage, create new DUT and DUT-DB units, and export data to csv

Step 4: Associate units in Inventory to a customer Assembly and display on webpage

- Customer orders are either "Delivered", "In Progress", or "New"
- Each customer order contains Desired Units (either 1 DUT and/or 1 DUT-DB), Board Config (Engineering Model or Flight Model). Lab Units cannot be assigned to customer assemblies
- Use the units in Inventory and associate to DUT/DUT-DB serial numbers to customer assemblies
- Identify when we'll run out of stock for DUT and DUT-DB

Step 5: Using Step 2, test engineers have completed thermal tests on 10x DUT's (choose any 10). These units can now be moved to Inventory

- Now when do we run out of stock?