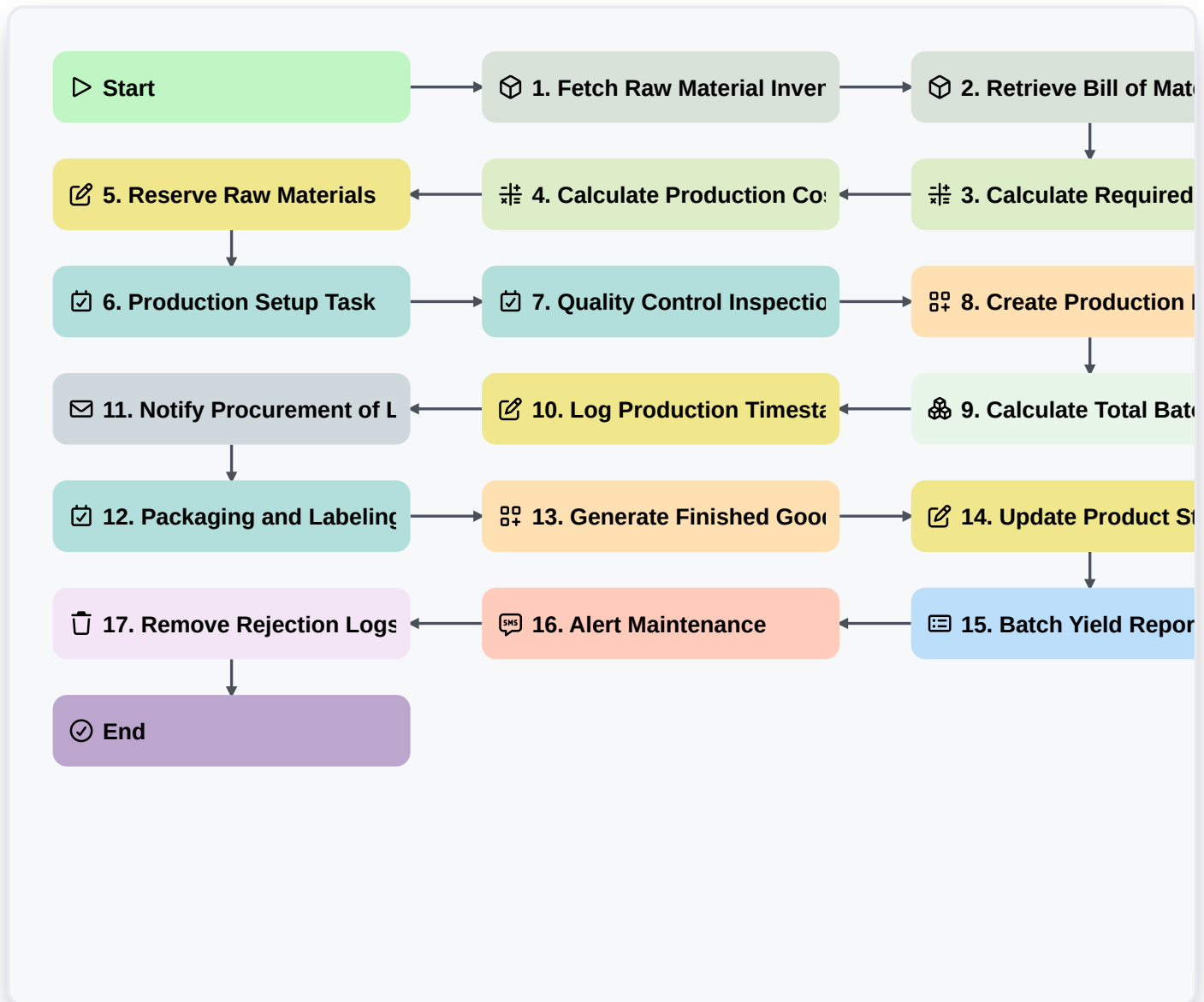


# Batch Production And Manufacturing Execution



## ▷ Start

Start of the Workflow/Process.

## 📦 1. Fetch Raw Material Inventory

Retrieve current stock levels for all required ingredients/materials from the Inventory Data Model.

## 📦 2. Retrieve Bill of Materials (BOM)

Fetch the specific recipe and component requirements for the selected product batch.

## 🔢 3. Calculate Required Material Quantity

Multiply the batch size by the unit requirement per the BOM to determine total material needed.

## 🔢 4. Calculate Production Cost Estimate

Sum the cost of all raw materials and projected labor hours for the batch.

## 📝 5. Reserve Raw Materials

Update the Inventory Data Model to change status from 'Available' to 'Reserved' for the batch.

## 📝 6. Production Setup Task

Assign a task to the Floor Supervisor to prepare machinery and workstations.



### **7. Quality Control Inspection**

Create a task for the QC Analyst to perform mid-process sampling.

### **8. Create Production Batch Record**

Initialize a new entry in the Batch Execution Data Model with a unique Batch ID.

### **9. Calculate Total Batch Weight**

Sum the weights of all individual component entries added during the mixing stage.

### **10. Log Production Timestamp**

Update the Batch Record with the actual start/end times of the manufacturing process.

### **11. Notify Procurement of Low Stock**

Send an email to the Purchasing Department if material reservation drops stock below the reorder point.

### **12. Packaging and Labeling**

Assign a task to the Packaging Team to wrap and label the finished goods.

### **13. Generate Finished Goods Entry**

Create a new entry in the Finished Goods Data Model once the batch is complete.

### **14. Update Product Status to 'Ready for Distribution'**

Change the status of the finished batch in the Product Data Model.

### **15. Batch Yield Report**

Generate a report comparing the theoretical yield (from BOM) vs. the actual yield recorded.

### **16. Alert Maintenance**

Send an SMS to the Maintenance Engineer if a machine error is logged during the process.

### **17. Remove Rejection Logs**

Remove temporary error entries from the work-in-progress buffer after they have been processed into the final report.

### **End**

End of the Workflow/Process.