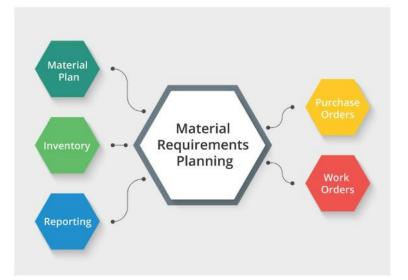
### MATERIAL REQUIREMENT PLANNING

**Material Requirement Planning (MRP)** is a production planning and inventory control system used to manage manufacturing processes. It ensures that materials and components are available for production at the right time while maintaining minimal inventory levels.



## **Objectives of MRP:**

- 1. Ensure materials and components are available for production.
- 2. Maintain the lowest possible inventory levels.
- 3. Plan manufacturing, delivery schedules, and purchasing activities.

### Key Components of MRP:

- 1. Master Production Schedule (MPS) Specifies what is to be produced and when.
- 2. Bill of Materials (BOM) Lists the components and materials required for production.
- 3. Inventory Records Tracks the availability of raw materials and components.

### **MRP Process Steps:**

- 1. Identify demand based on MPS.
- 2. Determine required materials using BOM.
- 3. Check inventory status.
- 4. Calculate net material requirements.

- 5. Generate purchase and production orders.
- 6. Monitor and update plans as needed.

# Benefits of MRP:

- Reduces inventory costs.
- Improves production efficiency.
- Minimizes stock-outs and delays.
- Enhances customer satisfaction by ensuring timely delivery.