

# Machine Learning – Short Notes

Machine Learning (ML) is a subset of Artificial Intelligence (AI) that allows systems to learn from data and improve performance without being explicitly programmed.

## Main Types of Machine Learning:

1. **Supervised Learning:** Model learns from labeled data. Examples: Linear Regression, Logistic Regression, Decision Tree.
2. **Unsupervised Learning:** Model learns from unlabeled data. Examples: K-Means Clustering, PCA.
3. **Reinforcement Learning:** Model learns using rewards and penalties. Example: Game-playing agents.

## Basic ML Workflow:

1. Collect Data → 2. Preprocess Data → 3. Train Model → 4. Test Model → 5. Deploy Model

### Common ML Terms:

- Feature: Input variable
- Label: Output variable
- Model: Algorithm that learns patterns
- Training: Teaching model with data
- Prediction: Model output