SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade (Cycle III)
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

SMART IOT APPLICATIONS
III YEAR/ V SEMESTER

UNIT 3 –SMART INDUSTRIAL AND AGRICULTURAL APPLICATIONS

TOPIC-4   INTELLIGENT SHOPPING APPLICATIONS, SMART PRODUCT MANAGEMENT

Challenges in Traditional Retail Shopping

1 **Impersonal Experiences**

Lack of personalized shopping journeys.

2 **Inventory Woes**

Inaccurate stock levels and stockouts.

3 **Slow Checkout**

Time-consuming payment processes.

IoT-Powered Intelligent Shopping

Personalized Journeys

❑ Smart apps guide customers based on preferences.

Intelligent Suggestions
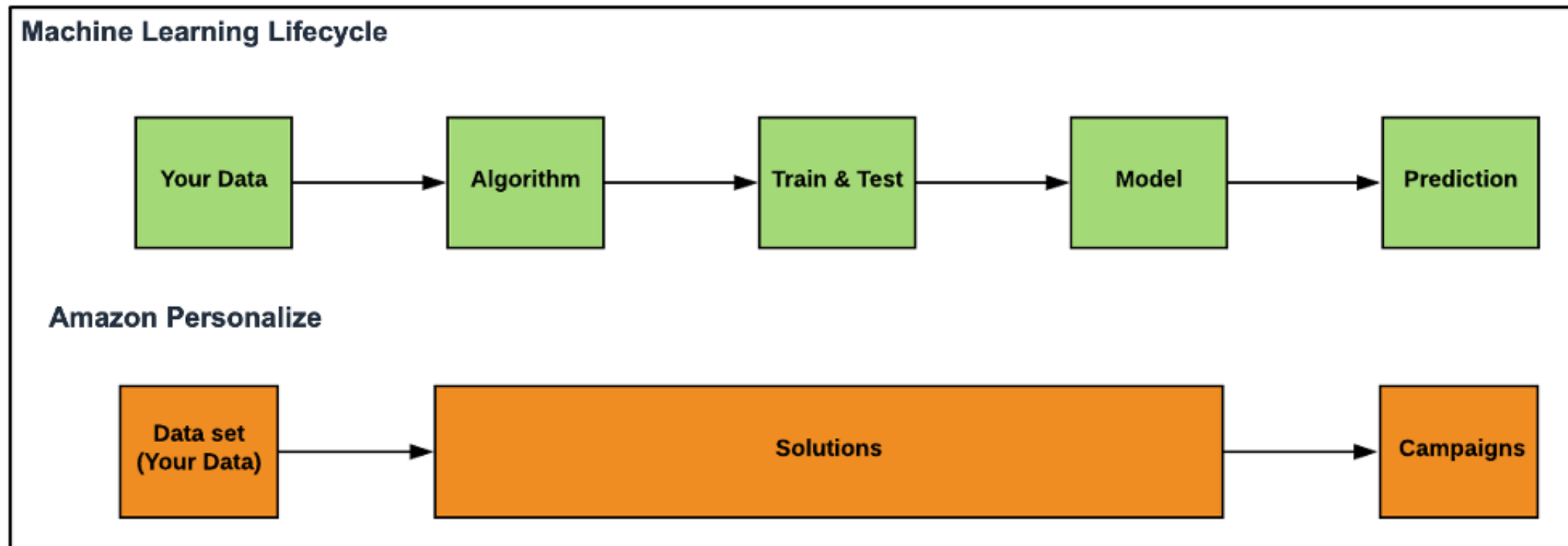
❑ Real-time product recommendations using behavioral data.

Machine Learning Lifecycle

Your Data → Algorithm → Train & Test → Model → Prediction

Amazon Personalize

Data set (Your Data) → Solutions → Campaigns

Image Reference https://d2908q01vomqb2.cloudfront.net/fc074d501302eb2b93e2554793fcaf50b3bf7291/2022/11/09/personalize-1.png

IoT Enhancing Intelligent Shopping

1 **Guided Navigation**

Smart carts lead customers to desired products.

2 **Real-time Recommendations**

Tailored suggestions based on user behavior.

3 **Contactless Checkout**

Seamless payment using IoT-enabled technologies.

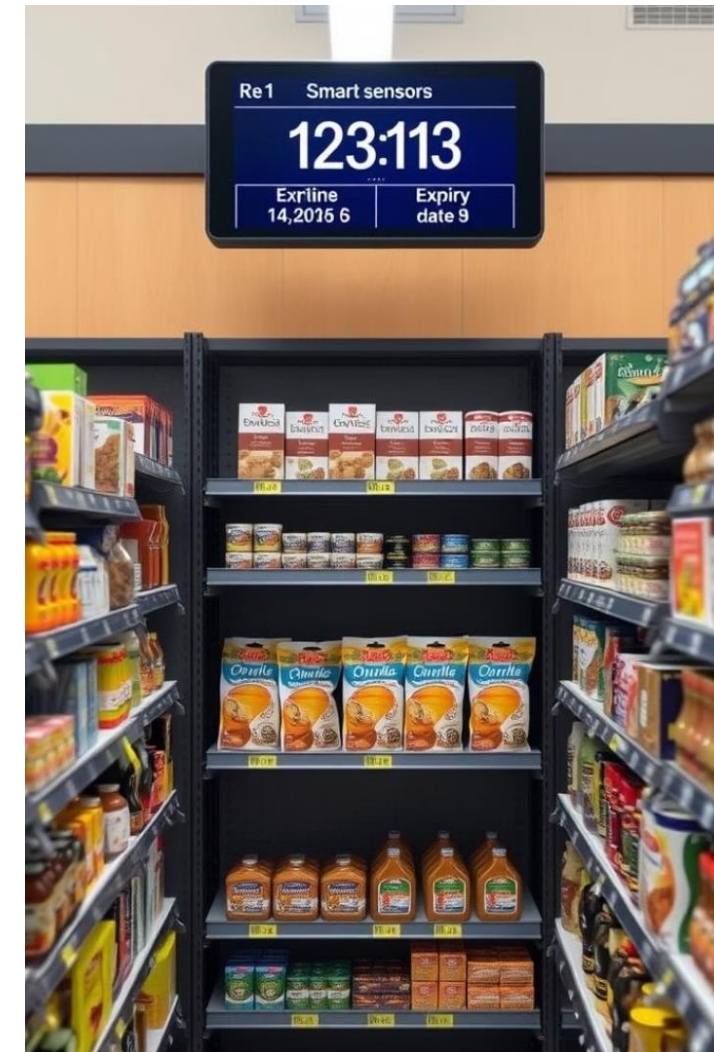# Smart Product Management with IoT

Inventory Visibility

Automated monitoring of stock levels and expiry.

Proactive Restocking

Sensors trigger notifications for shelf replenishment.

Data-Driven Insights

Dashboards provide real-time product movement analytics.

IoT Devices for Smart Retail

RFID Tracking

Item-level visibility from warehouse to shelf.

Smart Shelves
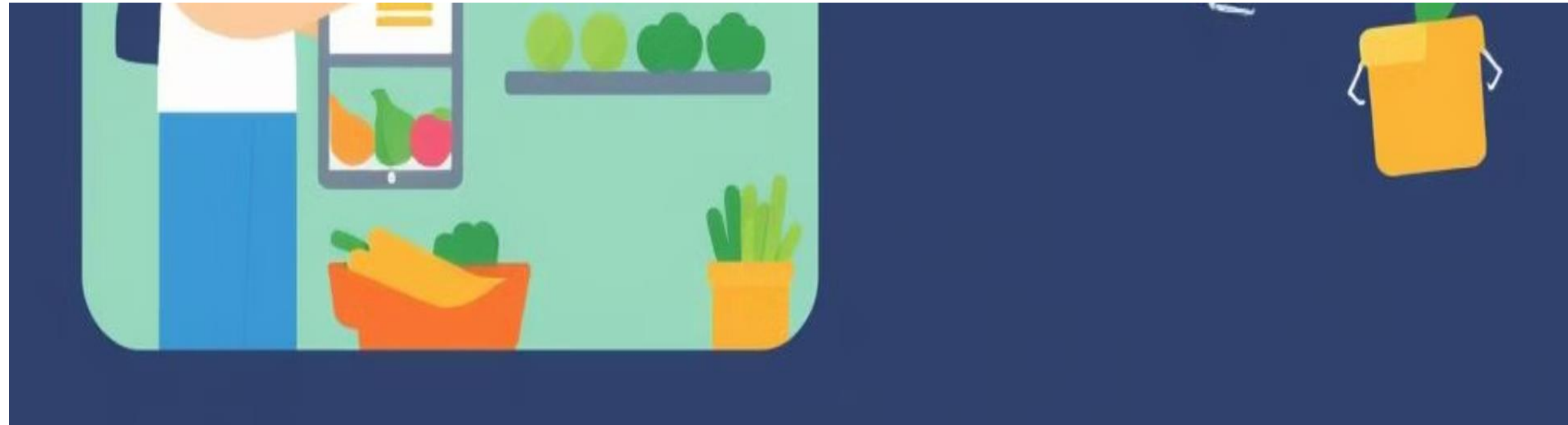
Automated stock level monitoring and alerts.

Management Dashboard

Real-time inventory data and sales analytics.

Benefits of Intelligent Shopping

1 **Personalized Experiences**

Data-driven insights for tailored recommendations.

2 **Faster Checkout**

Contactless payments and streamlined processes.

3 **Increased Engagement**

Location-based promotions and contextual offers.

Benefits of Smart Product Management

Inventory Accuracy

Real-time stock visibility and reduced stockouts.

Supply Chain Optimization

Data-driven insights for better inventory planning.

Operational Efficiency

Automated replenishment and reduced manual effort.
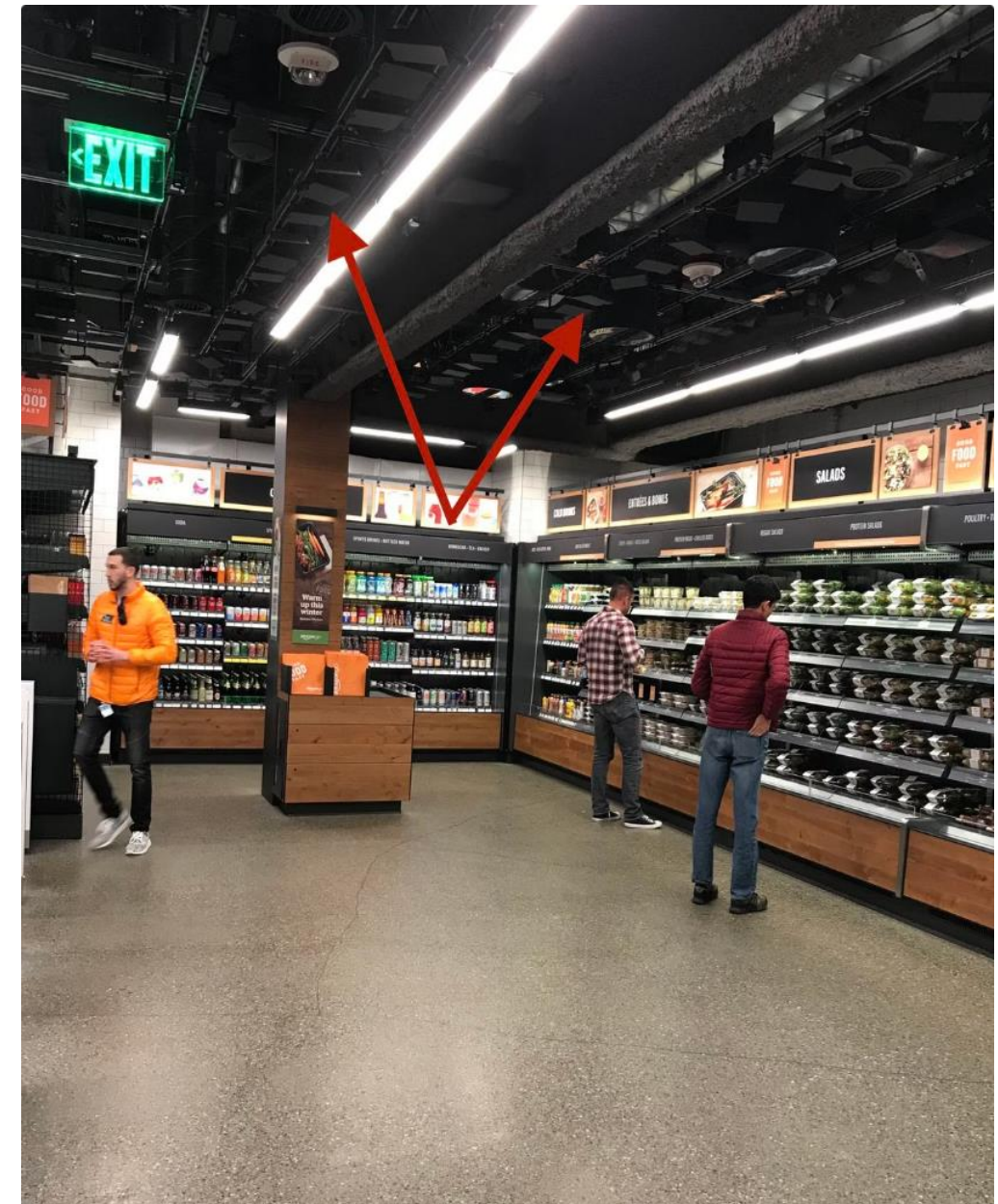
Real-World IoT in Retail

Amazon Go

Checkout-free shopping experiences powered by IoT.

Walmart's IoT Initiatives

Shelf inventory management and customer engagement apps.

Challenges and Future Trends

1

Implementation Costs

Significant investments in IoT infrastructure.

2

Data Security & Privacy

Addressing customer concerns around data usage.

3

Future Innovations

AI, AR, and autonomous delivery integrations.

Assessment

1. Explain how IoT technology enhances the shopping experience for customers in retail environments.

2. What role do IoT devices, such as RFID tags and smart shelves, play in smart product management?

3. Discuss the benefits of implementing intelligent shopping applications for retailers.

4. Identify and describe the challenges retailers may face when integrating IoT technologies into their shopping applications and product management systems.

5. How can data collected from intelligent shopping applications and smart product management systems be utilized to improve retail operations?

THANK YOU