

Project Team	
	Yellow Lineup
	Blue Lineup
-	MANAGERS
-	STAFF SUPPORT

The slide features a light blue background with a dark blue header bar at the top. The title 'Project Objectives' is centered in white font. Below the title is a large, bold, black text block. To the left of the main content is a vertical green sidebar. At the top of the sidebar, the word 'Key Achievement' is written in white. Below it, the word 'Problem' is written in white, followed by a large, bold, black 'Statement'. The main text block discusses the development of a learning management system for vocational training, emphasizing its role in improving learning outcomes for adult learners.

- The diagram illustrates a technology stack with three main layers. The top layer, labeled 'Technology Stack', contains a purple gear icon and the text 'Technology Stack'. The middle layer, labeled 'Programming Languages', contains a blue plus sign icon and the text 'Python'. The bottom layer, labeled 'Development Platforms', contains a green cloud icon and the text 'Cloudflare'.

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graph TD; A[Technology Stack] --- B[Programming Languages]; B --- C[Python]; C --- D[Development Platforms]; D --- E[Cloudflare]
```

- | Category | Sub-Category | Description |
|-------------|------------------|------------------------|
| Mathematics | Algebra | Linear Equations |
| Mathematics | Geometry | Pythagorean Theorem |
| Mathematics | Calculus | Integration Techniques |
| Science | Biology | Cell Structure |
| Science | Chemistry | Molecular Structure |
| Science | Physics | Newton's Laws |
| Technology | Computer Science | Algorithmic Thinking |
| Technology | Robotics | Autonomous Systems |
| Technology | Data Processing | Machine Learning |
| History | World History | Renaissance Period |
| History | American History | Colonial Period |
| History | European History | Industrial Revolution |

The image shows a presentation slide with a white background. In the top-left corner, there is a large green circular icon with a white 'S' shape inside it. To its right, the words 'Dataset' and 'Structure' are written in a large, bold, dark gray sans-serif font, stacked vertically. At the bottom of the slide, there is a dark blue horizontal bar. On the left side of this bar, there is a small yellow square icon. To the right of the square, the text 'Dataset Structure' is repeated in a smaller, lighter gray font. The overall layout is clean and professional.

- **Design based on ~~existing~~ needs**
- Personalizing
- **Design for the user**
- **Each requirement applied**

Model Architecture

Transfer Learning with MobileNets

Model Phases

- Pre-trained architecture
- Input output interface
- Customized for mobile deployment
- Mobile learning system
- Backend

Custom Layers

- Global Average Pooling
- Feature dimensionality reduction

Core Layer

- Feature extraction
- Pooling

Output Layer (softmax)

- Classification probability

Training Configuration

- Loss Function
- Categorical Crossentropy

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Implementation Methodology

 -  **1. Core Components & Processes**
 - Organizational chart and its functional architecture, reporting lines, responsibilities, implemented budget.
 - Proprietary system integration with existing core functions, as well as operational efficiency.

 -  **2. Model Architecture Design**
 - Implemented functional hierarchy.
 - Approach using generalist Modeler (e.g. UML, simplified notation).

- **Deployment Planning:** Early involvement in detailed planning, including requirements gathering, system design, and deployment strategy.
 - **Implementation Monitoring:** Detailed tracking of performance metrics, including validation tests, stakeholder feedback, regular analysis, implementation status, validation for required improvements.
 - **Deployment Preparation:** Optimized readiness for rollouts, including deployment-ready versions, automated testing and monitoring.

- A slide titled "Key Features & Capabilities" featuring a blue circular icon with a white starburst pattern. The slide lists several features: "Advanced Detection", "High-precision classification", "Robust feature extraction", and "Multi-class learning". Below this is a green circular icon with a white starburst pattern. The slide lists two more features: "Real-time Processing" and "Flexible feature selection".

- | Cloud Native Application | Microservices | Containerization | Serverless |
|--------------------------|---|--|--|
| Architecture | Multiple functional components with fine-grained partitioning | Single application with microservices architecture | Single function with event-driven architecture |
| Deployment | Multiple microservices deployed independently | Single container image deployed as a whole | Single function deployed as a service |
| Scaling | Horizontal scaling of individual microservices | Scaling of the entire application | Automatic scaling based on event triggers |
| Monitoring | Multiple monitoring tools for individual microservices | Centralized monitoring of the entire application | Monitoring of individual functions |
| Deployment Automation | Continuous deployment of individual microservices | Automated deployment of the entire application | Serverless deployment and execution |
| Integration | Complex integration between multiple microservices | Integration of multiple containers | Simple integration of individual functions |

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- **High Availability**
Cross-region failover distribution with automatic failover detection.
 - **Autoscaling Ready**
Smooth integration with automated scaling and provisioning algorithms.
 - **Scalability**
Easy expansion to handle multiple parallel requests and volumes.

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- | Advanced Categories | |
|---|--|
| Scalable multi-tier architecture | Focuses on building systems that can handle increasing amounts of data and users without becoming unresponsive or failing. |
|  Edge deployment | Places computation closer to the user, reducing latency and improving performance. |
|  ML Integration | Integrates machine learning models directly into applications to enable real-time decision-making and personalization. |
|  Blockchain | Utilizes decentralized ledger technology to ensure transparency, security, and immutability in transaction processing. |

- # Conclusion

The Smart Sorting project successfully demonstrates the practical application of deep learning and transfer learning technologies in

- Implementing an efficient classification system, this project achieves high accuracy in distinguishing between fresh and rotten fruits and vegetables.



High-Performance
Image Classification Accuracy



- The image is a collage of several distinct elements. At the top left is a green globe with a grid pattern. To its right is a blue sphere with a textured surface. Below the green globe is a white globe with a grid pattern. In the center is a blue stylized tree or plant. At the bottom right is a blue ribbon banner with the word "ProjectImpact" written on it in white. The background is a light grey.

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- Resources:
 - Technical References:
 - Thales ePassport Documentation for the Centralized Trusted Place (partner and API reference)
 - MasterCard Trusted Places Page for Business Classrooms, New Business Solutions Applications
 - Check-in: Central Platform - Centralized development environment
 - Client Transition Learning Guide - Development Environment Transition

- The Agile Data Strategy - The 10 Essential Components for Success
 - **Agile Data Strategy: What Every Data Manager, Data Architect, and Data Scientist Needs to Know**
 - **Agile Data Strategy: Practical Techniques for Data Governance, Data Quality, and Data Engineering**

Download Sliding Scale® Project Documentation
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