**Objective**: Develop a robust system to automatically extract and summarize nutritional information from images of food product labels. The approach taken can leverage OCR, end-to-end deep learning, template matching, or image segmentation techniques, depending on the suitability and performance of each method.

This scope of work outlines the key steps and deliverables required to develop a proof-of-concept system for extracting nutritional information from images of food product labels. The estimated time frame is intended to provide a realistic timeline for completing the PoC, considering the complexity and iterative nature of the development process.

**Tasks**:

1. **Data Collection**:
   * Collect a diverse dataset of high-quality images of nutritional labels from various food products.
   * Manually annotate the images with correct nutritional information, including serving size, calories, protein, carbohydrates, and fats.
2. **Preprocessing**:
   * Enhance image quality through techniques such as resizing, denoising, and contrast adjustment.
   * Prepare the dataset for training, validation, and testing.
3. **Model Training and Development**:
   * Develop and train an end-to-end model that directly predicts nutritional information from images.
4. **Model Evaluation and Improvement**:
   * Validate the developed models on a separate validation dataset to ensure accuracy and generalization.
   * Fine-tune the models based on validation results, potentially involving adjustments to preprocessing steps, model architecture, and training data.
5. **Deployment**:
   * Integrate the trained model(s) into a light weight model that can be used for on device with very fast processing wether on device or through API.
   * Set up a pipeline for continuous learning, allowing the system to improve over time by incorporating new data and retraining models periodically.
6. **Documentation and Reporting**:
   * Document the data collection process, model architectures, training procedures, evaluation metrics, and deployment steps.
   * Provide a comprehensive report detailing the system's performance, limitations, and recommendations for future improvements.

**Deliverables**:

* A dataset of annotated nutritional label images.
* A trained model (or models) capable of accurately extracting nutritional information from images.
* A deployed application/service for real-time nutritional information extraction.
* Comprehensive documentation and performance report.

**Estimated Time for Proof of Concept (PoC)**:

* **Data Collection and Annotation**
* **Preprocessing**
* **Model Training and Development**
* **Model Evaluation and Fine-Tuning**
* **Deployment and Integration**
* **Documentation and Reporting**