**PikaVision Test Plan**

**Project Overview**

We are creating a Python-based YOLO vision detection program to identify specific object categories.

**Test Goals**

1. Ensure the program detects all categories accurately.
2. Verify the system works under normal and challenging conditions.
3. Identify risks and potential issues.

**Risks**

1. **Missed Detections**: The program fails to identify one or more categories.  
   **Solution**: Test each category with a balanced dataset.
2. **False Results**: Detects objects incorrectly or misses valid ones.  
   **Solution**: Use more training data and adjust the model.
3. **Poor Performance**: Slows down or crashes on larger images.  
   **Solution**: Test on various hardware and optimize the model.

**Test Cases**

| **Test** | **Scenario** | **Expected Result** |
| --- | --- | --- |
| 1 | Detect each category | All categories are detected. |
| 2 | Overlapping objects | Both objects are correctly detected. |

**Acceptance Criteria**

* The program correctly detects all categories with good accuracy.
* It works reliably in real-world conditions.