Ingredient Vision Recipe Finder
MVP Test Plan

Purpose

Validate that the end-to-end flow **(Image Upload → Ingredient Detection → Recipe Matching)** is reliable, reasonable, and demo-safe under realistic conditions.

1 Image Upload & Input Validation

TC-1: Valid Image Upload

Input: Clear JPG/PNG of ingredients

- Image uploads successfully
- No errors
- Backend receives file
- Processing begins immediately

Demo Critical

TC-2: Unsupported File Type

Input: PDF / TXT / HEIC

- User-friendly error message
- No backend crash
- No processing attempt

TC-3: Large Image File

Input: High-resolution image (>10MB)

- Upload succeeds or fails gracefully
- No timeout
- Clear feedback if rejected

TC-4: Empty Submission

Input: Submit without selecting image

- Frontend prevents submission
- Clear prompt to upload an image

2 Vision Model Ingredient Detection

TC-5: Clear Ingredient Layout

Input: Clean ingredient image (e.g., steak taco setup)

- Correct ingredient detection
- $\geq 80\%$ accuracy
- No hallucinated ingredients

TC-6: Partial Ingredients Visible

Input: Only 2–3 visible ingredients

- Detect visible items only
- No forced guessing
- Recipes still returned

TC-7: Overcrowded Image

Input: Many ingredients in one frame

- Majority of main ingredients detected
- Low-confidence ingredients filtered or flagged

TC-8: Blurry Image

Input: Slightly blurry photo

- Partial detection
- Graceful degradation
- No nonsensical output

3 Ingredient Normalization

TC-9: Synonym Handling

Input: "bell peppers", "capsicum"

- Normalized to a canonical ingredient
- No duplicates

TC-10: Raw vs Prepared Foods

Input: "raw chicken", "chicken breast"

- Normalized to "chicken breast"
- Clean ingredient list

TC-11: Noise Removal

Input: "plate", "bowl", "countertop"

- Non-food items removed
- Final list contains only edible ingredients

4 User Ingredient Confirmation (UX)

TC-12: User Removes Ingredient

- Ingredient removed from final list
- Recipe results update accordingly

TC-13: User Adds Ingredient

- Ingredient included in recipe query
- Results improve or change logically

TC-14: Empty Ingredient List

- Friendly message displayed
- Prompt to add at least one ingredient

5 Recipe Matching (Spoonacular)

TC-15: Expected Dish Match

Input: Steak taco ingredients

- Taco-style recipes returned
- No irrelevant dishes

Demo Critical

TC-16: Cultural Dish Edge Case

Input: Chicken adobo ingredients

- Filipino-style or soy/vinegar chicken dish returned
- Reasonable fallback if exact match not found

TC-17: Generic Ingredients

- Broad but reasonable recipes
- No extreme or niche results

TC-18: Missing Key Ingredient

- Dish still suggested
- Missing ingredients listed clearly

6 Recipe Ranking Logic

TC-19: Ranking by Ingredient Match

- Recipes with fewer missing ingredients ranked higher

TC-20: Penalize Missing Ingredients

- Recipes requiring many extras ranked lower

TC-21: Keyword Boost

- Titles matching inferred dish prioritized

7 Performance & Reliability

TC-22: End-to-End Time

- Full flow completes in under 10 seconds

Demo Critical

TC-23: Spoonacular API Failure

- Graceful error message
- No application crash

TC-24: Vision API Failure

- Friendly fallback message
- Retry suggested

8 UX & Demo Polish

TC-25: Loading States

- Visible loading indicators
- No frozen UI

TC-26: Mobile Responsiveness

- Image upload usable on mobile
- Recipe cards readable

TC-27: First-Time User Flow

- Clear next steps
- No verbal instructions needed

Demo Critical

9 Cuisine Filter & International Coverage

TC-28: Cuisine Parameter Forwarded

Input: Select "Mexican" cuisine with taco ingredients

- Selected cuisine sent in recipes API request
- Returned recipes match selected cuisine theme

TC-29: Vietnamese Cuisine Result

Input: Vietnamese cuisine selected

- Pho-style recipe returned (e.g., Pho Bo)
- Ingredients echoed back correctly

TC-30: American Cuisine Result

Input: American cuisine selected

- Classic American dish returned (e.g., cheeseburger)
- No cross-cuisine outliers

TC-31: Filipino Cuisine Result

Input: Filipino cuisine selected

- Chicken adobo (or close variant) returned
- Matches cultural flavor profile (soy/vinegar/garlic)

TC-32: Middle Eastern Cuisine Result

Input: Middle Eastern cuisine selected

- Shawarma-style recipe returned
- Spiced/rotisserie flavor profile preserved

10   Final Demo Readiness Checklist

Before demo day, confirm:

- 5–10 "golden" test images consistently work
- No console errors
- API keys secured
- App recovers gracefully from failures
- Demo flow rehearsed end-to-end

Pro Tip

Create a demo script:

1. Upload steak taco image
2. Show detected ingredients
3. Confirm ingredients
4. Highlight ranked recipe
5. Open recipe details

If this flow works every time, the demo will land.