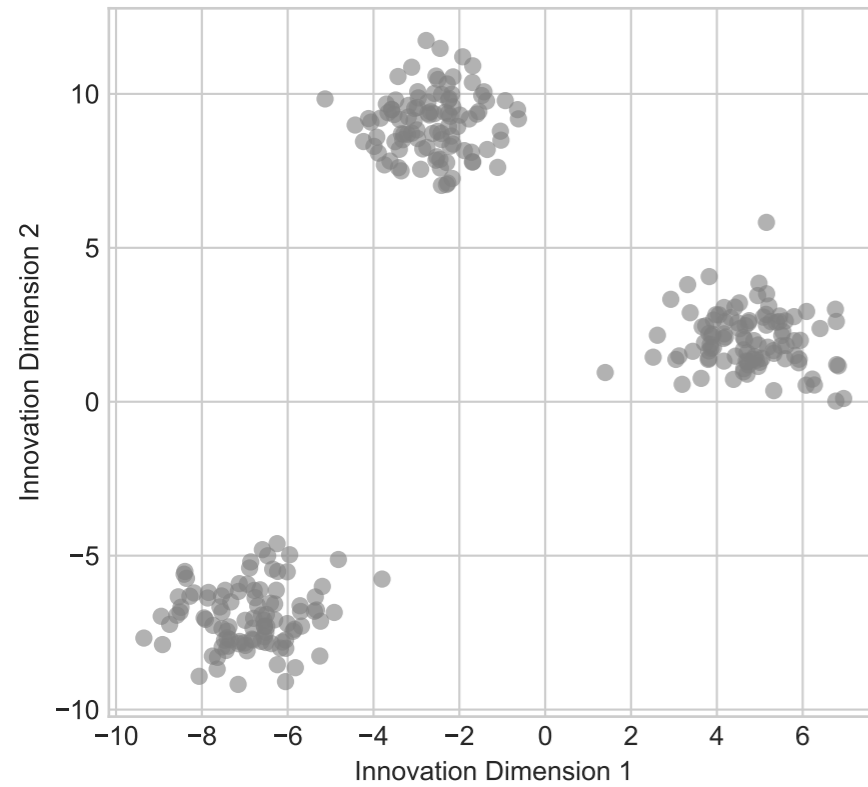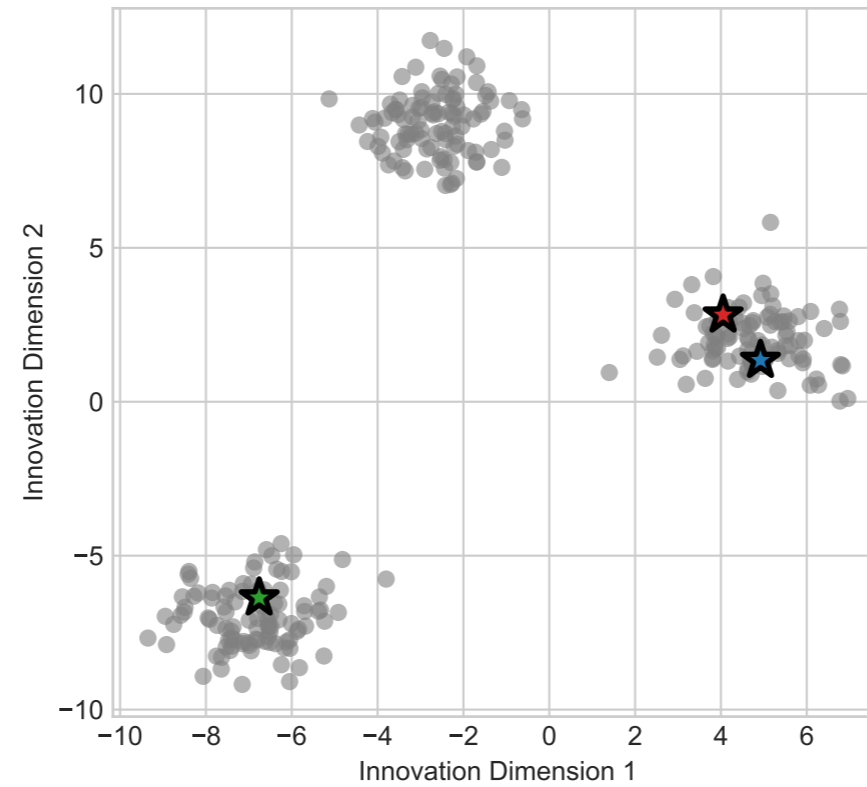# K-Means Algorithm: Step-by-Step Innovation Clustering

Step 1: Raw Innovation Data (300 ideas, no labels) — How many groups?
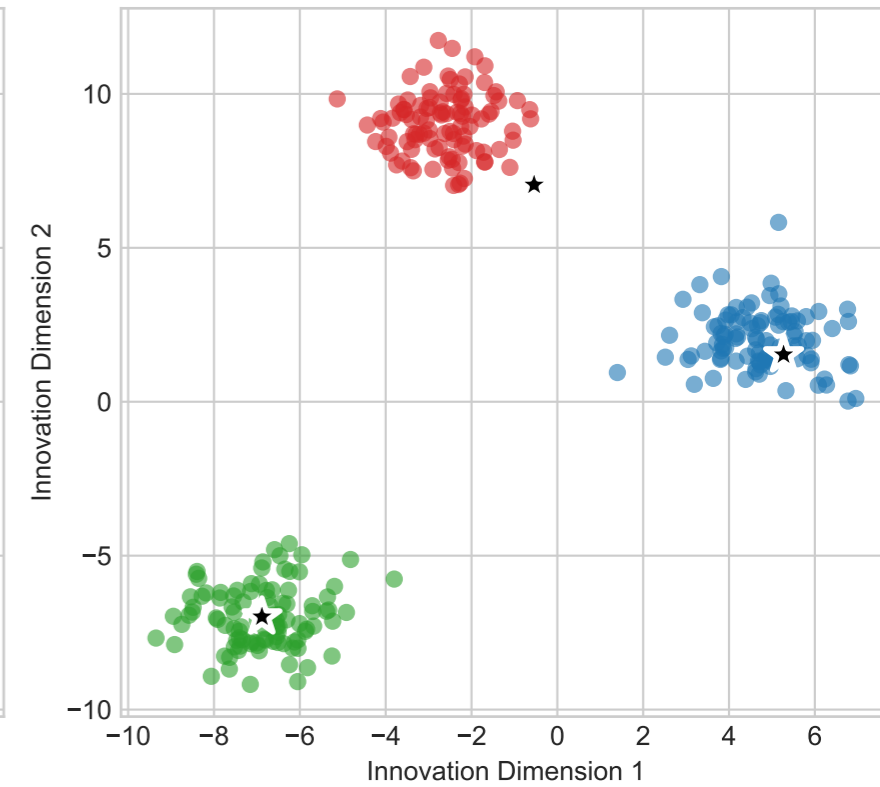
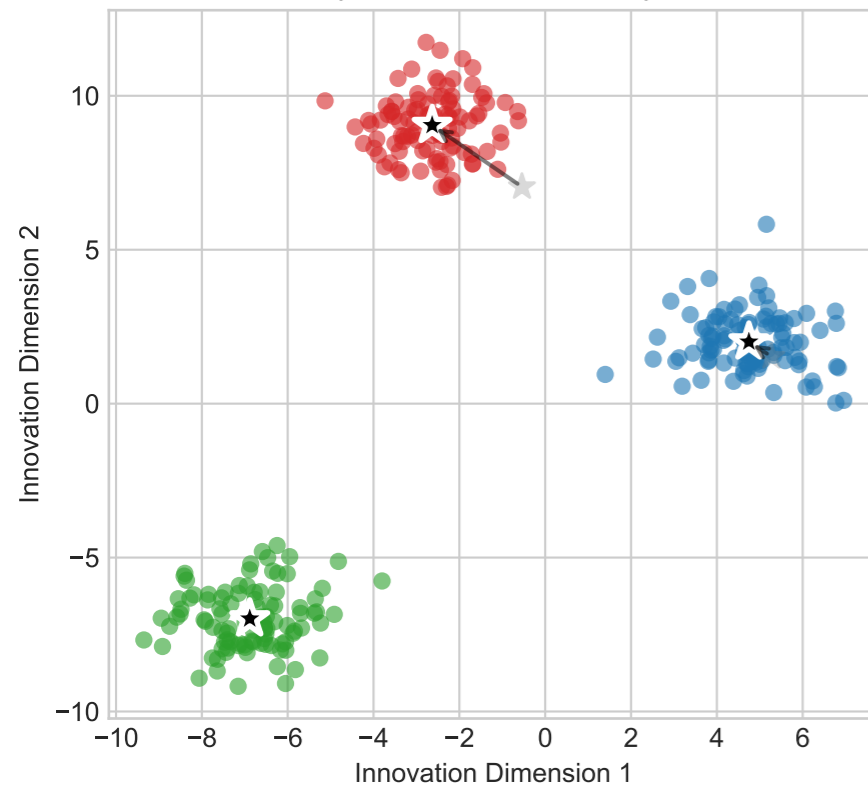**Step 2: Initialize Centers (k=3 random starting points)** — Start with k=3 centers

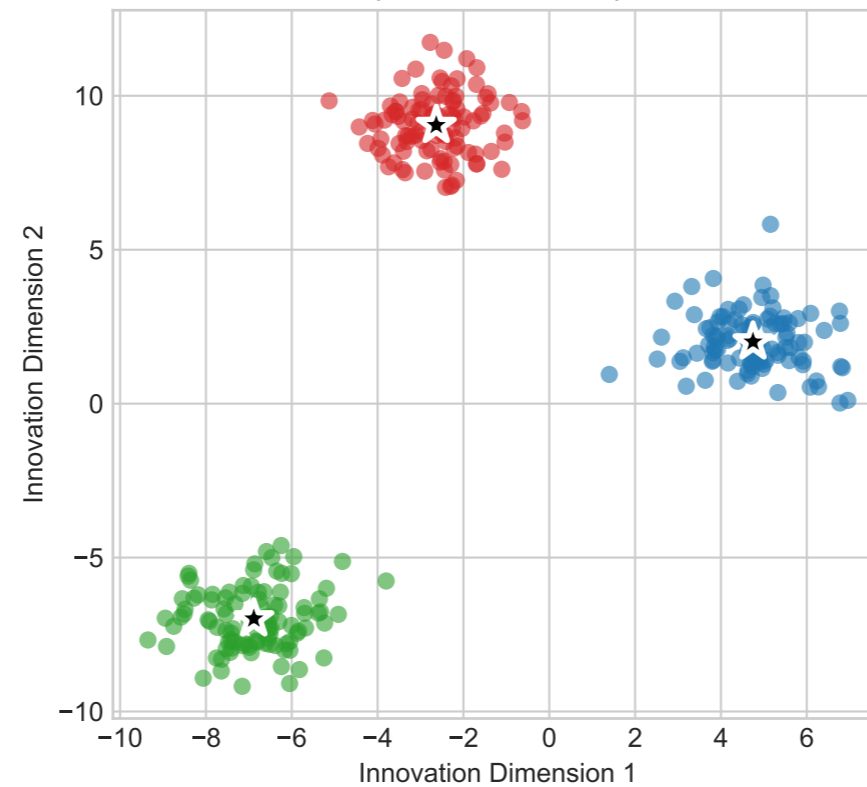**Step 3: Assign to Nearest Center (Each point finds its cluster)** — Distance-based assignment
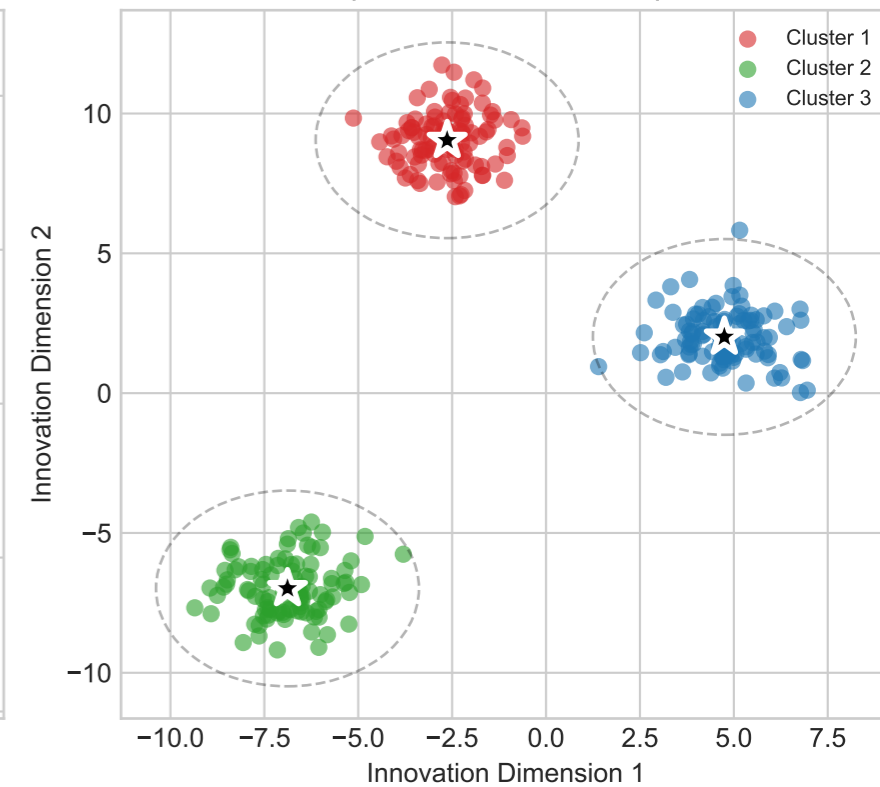
Step 4: Update Centers (Move to cluster mean) — Centers adjust position

Step 5: Repeat Until Stable (After 5 iterations) — Keep refining

Step 6: Convergence! (Stable clusters found) — Algorithm complete!

Legend: Cluster 1, Cluster 2, Cluster 3

Axes: Innovation Dimension 1, Innovation Dimension 2

Each iteration refines the innovation groups until they stabilize (typically 5-10 iterations)