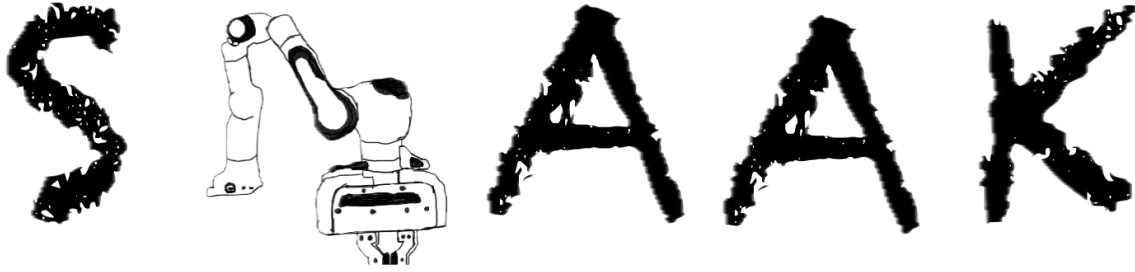


SNAAK: Smart Nutritional Automated Assembly Kiosk



Task 4: SVD Test Plan

Team C: SNAAK

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16681 - A: MRSD Project 1

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SVD Schedule

SVD	4/17	Full System: - Assemble a ham and cheese sandwich with single slices - Returning arm to home position and visual cue for successful assembly - Assemble a sandwich with multiple slices of the same ingredient - Detect faulty sandwich assemblies - Detect insufficient ingredients in storage	S.V.D	F.R.8 - F.R.16, F.R.22 N.R.1, N.R.9, N.R.10, N.R.12 P.R.1, P.R.3 - P.R.12,
SVD Encore	4/24	Full System: - Finetune system performance		

SVD Test Plan

Objectives	
Demonstrate the system's ability to successfully assemble a variety of ham and cheese sandwiches without human intervention.	
Requirements	F.R.8 - F.R.16, F.R.22, N.R.1, N.R.9, N.R.10, N.R.12, P.R.1, P.R.3 - P.R.12
Equipment	Kiosk, Bins, Assembly Area Weight Scale, Franka Arm, End Effector, Realsense D435, Camera Mount, USB Cable, User PC, Storage Bins, Weighing scale, Bread slices, Ham slices, Cheese slices, Tray
Elements	Kiosk Subsystem, Gripper subsystem, Vision subsystem, Manipulation subsystem
Personnel	Anirudh, Rodrigo, Abhinandan, Oliver, Parth
Location	NSH B512
Procedure	
1. Place ham, cheese, and bread into ingredient bins 2. Place tray onto sandwich assembly area 3. Assemble ham and cheese sandwich consisting of two slices of bread, with a singular slice of ham and cheese in between. 4. After completion of the sandwich, demonstrate the arm's return to the home position and verify the indication of successful sandwich assembly 5. Assemble a cheese sandwich consisting of two slices of bread and multiple slices of cheese. 6. Tamper with a successful sandwich and demonstrate the ability to detect faulty assemblies. 7. Place the kiosk in restock mode and remove all but two cheese slices. 8. Attempt a sandwich with four cheese slices, recognize that not enough ingredients are stored.	
Verification Criteria	
1. Sandwich assemblies completely executed without any unexpected errors. 2. All steps of the finite state machine executing sequentially as required - monitor using ROS logging 3. Quantity of ingredients in assembled sandwich is within tolerances indicated in appendix 5.4 (see test plan) 4. Meet stated performance requirements	

