

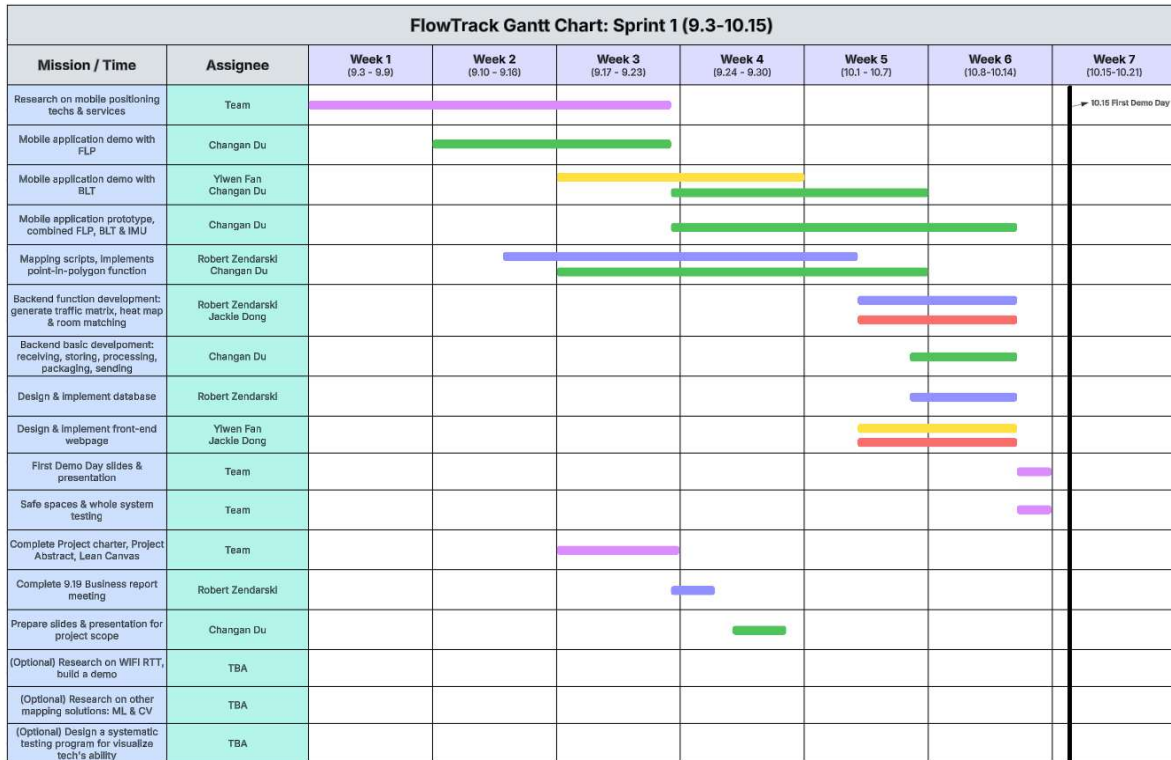
FlowTrack: Employee Traffic Monitoring System
Project Charter

Project Header	
Project Sponsor	Shahrukh Irani
Project Instructor	Dauntrica Woods
Team Name	IEatTaco
Purpose	To provide industrial engineers with a system that collects, visualizes, and analyzes employee movement data in manufacturing facilities, enabling improved workflow efficiency, safety, and resource allocation.

Project Overview
<p>Industrial Engineers traditionally rely on classical and often outdated methods such as direct observation, work sampling, and predetermined time standards to measure worker productivity and efficiency on the factory floor. These approaches are intrusive, time-consuming, and limited in scope, making it difficult to capture the full complexity of modern workplace dynamics.</p> <p>FlowTrack addresses this challenge by providing a mobile and web-based application that unobtrusively collects and analyzes employee movement data throughout the workday. Employees carry a tracker app on their mobile device, which continuously records their time spent at their immediate workstation and locations. Then the tracker app sends these data after simple processing to the server; Server will filter and clean received data, write them into MySQL database; Then read from our database, server will process data to generate visualization data and statistical analysis.</p> <p>The insights generated by FlowTrack are not intended for disciplinary use, but rather for identifying process inefficiencies, improving facility layout, and reducing the “Seven Forms of Waste at Work”. By leveraging these data-driven insights, industrial engineers, consultants, and corporations can make informed decisions to enhance worker productivity, operational efficiency, and workplace safety.</p>

Project Milestones			
	Start Date	Planned End Date	Actual End Date
Project management and research	September 3rd	September 24th	September 24th
Mobile application prototype that combines FLP, BLT and IMU	September 22nd	October 12th	

Create a mapping script and implement point-in-polygon function	September 14th	October 7th	
Develop backend function: generate traffic matrix, heat map and room matching	October 3rd	October 12th	
Develop basic backend development: receiving, storing, processing, packing and sending data	October 5th	October 12th	
Design and implement front-end webpage	October 3rd	October 12th	
First Demo Day - MVP	October 15th	October 15th	
Improved mobile application	October 15th	October 24th	
Improved backend server	October 24th	November 7th	
Review and Document	November 7th	November 12th	
Second Demo Day	November 12th	November 12th	
Improved frontend	November 12th	November 21th	
Extra functions & Techs	November 21th	December 10th	
Review and Document	November 28th	December 10th	
Third Demo Day	December 10th	December 10th	



Financial	
Project Costs	Requirements: 100 Hours Development: 800 Hours
Total	900 Hours
Calculation	15 weeks * 4 teammates * 15 hours per person per week = 900 hours
Budget Allocation (Weekly)	Week 1: 60 hours Week 2: 60 hours ...and so on...
Project Duration	15 weeks

Known Risks				
Risk	Trigger	Response	Probability of Risk	Cost/ Duration
Low experience with some prog. languages	Large learning curve and slow start	Start as early as possible and communicate knowledge gained	guaranteed	Roughly 5 hours
Device limitation	Hardware/GP	Evaluate	35%	1 week

	S accuracy may not meet precision requirements	accuracy early, optimize algorithms, and communicate limitations to stakeholders		
Student gets sick during critical deadline	Student cannot work on and complete assigned tasks on time	Mitigation: Pair program on task	30%	0.5 week
Student drops course	Student stops showing up	Mitigation: Crosstrain students in all technologies	1%	1 week
Security demands	Security holes in frameworks	Carefully review security measures and perform testing, respond accordingly to results	50%	1 week

Business Team			
Name	Role/Title	Email	Phone
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