Problem Definition

One of the most common problems hostel students face these days is following a meal plan and maintaining a balanced diet. This is a challenge that many students face and as a result of this, they often undergo drastic physical changes in a matter of months. Often, students are unable to comprehend the nutritional value of the food that is available in the mess and end up eating unhealthily.

In lieu of this, we decided to make a smart meal planner that is flexible and caters to the individual as a college student. We take your weekly mess menu as well as your food logs and by running an AI it generates the best course of action for your day.

The available solutions for generating meal plans are based on the fact that the user is free to decide the menu of the week. Our product is customized for the mess users, giving them the much-needed assistance in planning their meals from available options.

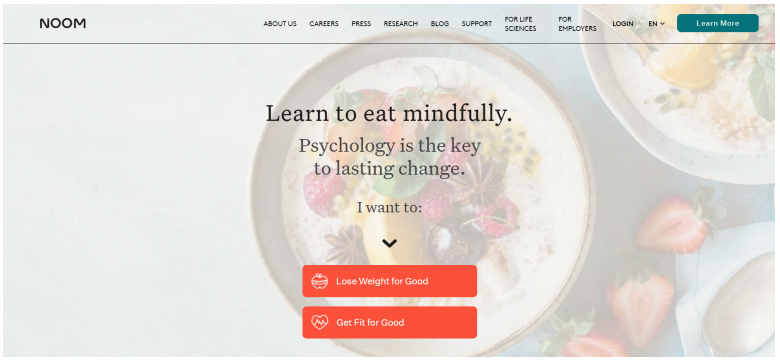
Technology Landscape Assessment

Meal Planning AI Softwares

- Whisk's Culinary Coach - AI-powered nutrition platform that provides food recommendations based on flavour preferences and avoidances
- Frélii - a health tool that uses AI to build unique nutrition and health needs
- Noom – A software that takes the user's exercise and food logs

Recipe AI Softwares

- Spoonshot - AI-based app that suggests recipes based on available ingredients
- RecepiBook - uses AI to recommend food recipes based on user behavior and cravings
- Gulpie – uses AI to recommend Restaurants and places to eat, to suit the user's diet.



Project Plan

Tasks	Start Date	End Date
Project Phase 1		
Ideation and selction on final problem	29/09	11/10
Market survey for available solutions and decide the USP	11/10	17/10
Method to protect the USP and analyse entry barrier	17/10	23/10
Project Monitoring Meet	23/10	
Interim Project Report	23/10	25/10
Project Phase 2		
Conceptual Design (Model, Dataset, Language, Algorithms, Library selection and sequence diagram)	26/10	27/10
Project Monitoring Meet	28/10	
Code Phase 1(Coding convention, User interface, Pre-processing, Output Visulisation)	28/10	05/11
Code Phase 2(Error handling, Auto document generation, Version control, Code testing)	17/11	20/11
Training, Validation and testing the dataset, Metrics observation)	17/11	20/11
Project Phase 3		
Brochure development	20/11	22/11
Marketing presentation	20/11	22/11
1 Minute marketing video	20/11	22/11

User Interface

```
sheet_menu=wb['Menu']
sheet_pref=wb["User_Input"]
# user data

weight=float(input("Enter your weight (kg):"))
height=int(input("Enter your height (cm) :"))
age=int(input("Enter your age :"))
gender=input("Enter your gender (M/F):")

if gender=='M':
    bmr=10*weight+6.25*height-5*age+5
elif gender=="F":
    bmr=10*weight+6.25*height-5*age-161
else:
    print("Please select gender from the given options.")
    sys.exit()
print("S: Sitting all day with no structured excercise.")
print("M: Moderate movement or 1hr exercise")
print("H: 2hrs exercise or moderate movement with 1hr exercise")
print("E: High training or high movement with 1 +hrs of exercise.")
pa=input("Input physical activity level (S/M/H/E):")              #physical activity
exer_cal=int(input("Enter Exercise Calories:"))
phy_act_lev={
    "S":1.55,"M":1.85,"H":2.2,"E":2.4}
par=phy_act_lev.get(pa)
if par!=None:
    maint_cal=bmr*par
else:
    print("Please select physical Activity from the given options.")
    sys.exit()

goal=input("Target (G/M/L):")
gain=int(input("Input targetted calorie deficiet or surplus:"))
CalPD=maint_cal+gain

if goal=="G":
```

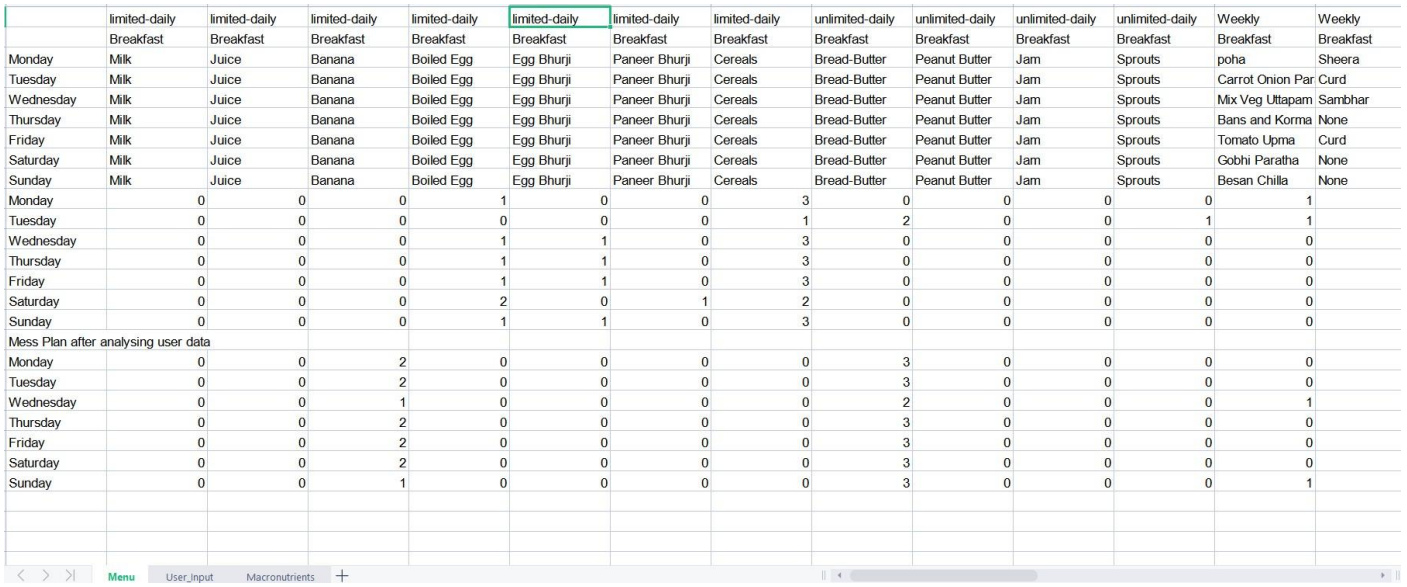
food_name2	str	1	Apple,Dinner
gain	int	1	200
gender	str	1	M
glpk	NoneType	1	NoneType object
glpk_path	str	1	glpsol
goal	str	1	G
gurobi_path	str	1	C:\gurobi10\win3...

Help | Variable explorer | Plots | Files

Console 1/A

```
Enter your weight (kg):60

Enter your height (cm) :160

Enter your age :20

Enter your gender (M/F):M
S: Sitting all day with no structured excercise.
M: Moderate movement or 1hr exercise
H: 2hrs exercise or moderate movement with 1hr exercise
E: High training or high movement with 1 +hrs of exercise.

Input physical activity level (S/M/H/E):S

Enter Exercise Calories:200

Target (G/M/L):G

Input targetted calorie deficiet or surplus:200
```

Output Visualization



	limited-daily	limited-daily	limited-daily	limited-daily	limited-daily	limited-daily	limited-daily	unlimited-daily	unlimited-daily	unlimited-daily	unlimited-daily	Weekly	Weekly
	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
Monday	Milk	Juice	Banana	Boiled Egg	Egg Bhurji	Paneer Bhurji	Cereals	Bread-Butter	Peanut Butter	Jam	Sprouts	poha	Sheera
Tuesday	Milk	Juice	Banana	Boiled Egg	Egg Bhurji	Paneer Bhurji	Cereals	Bread-Butter	Peanut Butter	Jam	Sprouts	Carrot Onion Par	Curd
Wednesday	Milk	Juice	Banana	Boiled Egg	Egg Bhurji	Paneer Bhurji	Cereals	Bread-Butter	Peanut Butter	Jam	Sprouts	Mix Veg Uttapam	Sambhar
Thursday	Milk	Juice	Banana	Boiled Egg	Egg Bhurji	Paneer Bhurji	Cereals	Bread-Butter	Peanut Butter	Jam	Sprouts	Bans and Korma	None
Friday	Milk	Juice	Banana	Boiled Egg	Egg Bhurji	Paneer Bhurji	Cereals	Bread-Butter	Peanut Butter	Jam	Sprouts	Tomato Upma	Curd
Saturday	Milk	Juice	Banana	Boiled Egg	Egg Bhurji	Paneer Bhurji	Cereals	Bread-Butter	Peanut Butter	Jam	Sprouts	Gobhi Paratha	None
Sunday	Milk	Juice	Banana	Boiled Egg	Egg Bhurji	Paneer Bhurji	Cereals	Bread-Butter	Peanut Butter	Jam	Sprouts	Besan Chilla	None
Monday	0	0	0	1	0	0	3	0	0	0	0	1	
Tuesday	0	0	0	0	0	0	1	2	0	0	1	1	
Wednesday	0	0	0	1	1	0	3	0	0	0	0	0	
Thursday	0	0	0	1	1	0	3	0	0	0	0	0	
Friday	0	0	0	1	1	0	3	0	0	0	0	0	
Saturday	0	0	0	2	0	1	2	0	0	0	0	0	
Sunday	0	0	0	1	1	0	3	0	0	0	0	0	
Mess Plan after analysing user data													
Monday	0	0	2	0	0	0	0	3	0	0	0	0	
Tuesday	0	0	2	0	0	0	0	3	0	0	0	0	
Wednesday	0	0	1	0	0	0	0	2	0	0	0	1	
Thursday	0	0	2	0	0	0	0	3	0	0	0	0	
Friday	0	0	2	0	0	0	0	3	0	0	0	0	
Saturday	0	0	2	0	0	0	0	3	0	0	0	0	
Sunday	0	0	1	0	0	0	0	3	0	0	0	1	

Menu User_Input Macronutrients

Business Plan

We aim to first implement our product in IITB Campus by collaborating with Mess caterers and assistance of Hostel Councils.
After a significant period of implementation, feedback and improvement, we will then approach various other residential campuses in India for implementation of our product in their mess facilities.
After this we will aim the global market