Hostel Froodie

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An Innovative meal Planner

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ABOUT OUR PRODUCT

PRODUCT DESCRIPTION

- Hostel Froodie is a meal planner designed specifically for the average hostel student who is just learning to live and manage themselves independently.

- Through Hostel Froodie, students can experience a balanced diet even after leaving their homes.

- Having a flexible and enjoyable meal plan despite having a rigid and bland mess menu

Our Mission, Vision and Goals

Our Mission is to create a college environment where students enjoy and look forward to their mess food while accomplishing their health and fitness goals with ease.

We aim to do this with a software that personalizes meal plans for hostel students based upon their calorie requirements and their preferences, all while being aware of the food available in their mess for any given day.

In the Future, Hostel Froodie would be so highly integrated to the indian college system, that it would be able to keep track of college mess menus on a subcontinent scale. A personalized meal plan that will get updated throughout the day based on the food items user consciously or subconsciously prefers.

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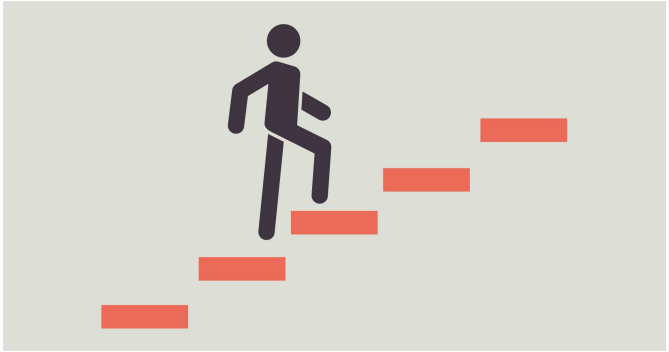
PROBLEM DEFINITION

Problem Definition

- When students get into college, often undergo drastic physical changes in a matter of months. The main reason for this is not being able to follow a proper meal plan and maintaining a proper meal plan. Often, students are unable to comprehend the nutritional value of the food that is available in the mess and end up eating unhealthily.
- There is hence a dire need for 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 to generate the best 4 course meal plan for you.
- Currently, Available solutions for generating meal plans don't pay attention to the rigidness of a hostel mess menu in India. Our product is customized for the mess users, giving them the much-needed assistance in planning their meals from available options.

STEPWISE BREAKDOWN OF THE PRODUCT FUNCTION



STEP 1

Input your goals and your current state (BMI, weight, height, etc)

STEP 2

Input the mess menu for the week in the form of a pdf or image

STEP 3

The software predicts the best meal plan for your current meals based on previous weeks

STEP 4

Update what you eat to the product as well as feedback so that the software can learn

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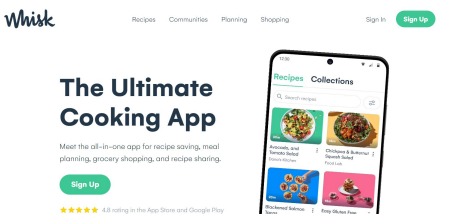
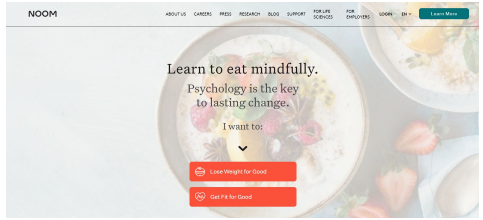
LANDSCAPE ASSESSMENT

Technology LandScape Assessment



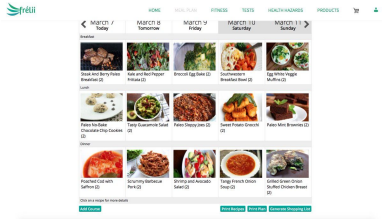
Whisk's Culinary Coach

AI-powered nutrition platform that provides food recommendations based on flavour preferences and avoidances



Noom

A software that takes the user's exercise and food logs



Frélii

a health tool that uses AI to build unique nutrition and health needs

Gulpie

uses AI to recommend Restaurants and places to eat, to suit the user's diet.

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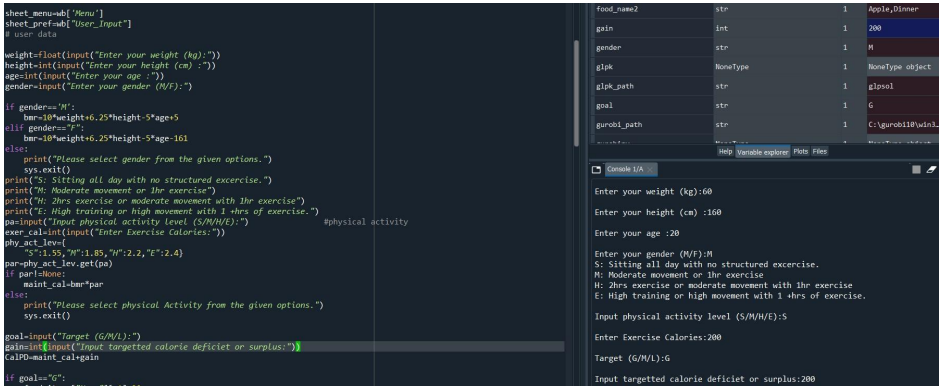
SOFTWARE DESIGN

PYTHON SCRIPT FOR PRODUCT PROTOTYPE

```
        food_item_weights2[food_name2]=1

_item_weights_user=solver.preferance(pref,food_item_weights,food_menu)
olver
row=0
(True):
data_row+=1
f sheet_menu.cell(data_row,1).value=="Monday":
    break

day in range(7):
day_menu=[]
or i in range(2,sheet_menu.max_column+1):
    if type(sheet_menu.cell(data_row+day,i).value)!=str:
        break
    day_menu.append(sheet_menu.cell(data_row+day,i).value+","+sheet_menu.cell(2,i).value)
day_meal_weights=[]
or i in range(len(day_menu)):
    day_meal_weights.append(food_item_weights2[day_menu[i]])
eal_items_solver=[]
or i in range(len(day_menu)):
    meal_items_solver.append([])
    meal_items_solver[i].append(day_menu[i])
    meal_items_solver[i].append(food_items.get((day_menu[i].split(","))[0]))
uantity=solver.mess_plan(meal_items_solver,day_meal_weights,weight,goal,CalPD)
input_cell=sheet_menu.cell(data_row+7+day,1)
input_cell.value=sheet_menu.cell(data_row+day,1).value
or i in range(2,sheet_menu.max_column+1):
    if type(sheet_menu.cell(data_row+day,i).value)!=str:
        break
    input_cell=sheet_menu.cell(data_row+7+day,i)
    input_cell.value=quantity[i-2][-1]
ave("Output.xlsx")
```

```
    problem_name="Meal_plan"
    if goal=="G":
        prob= pulp.LpProblem(problem_name,LpMinimize)
    else:
        prob= pulp.LpProblem(problem_name,LpMaximize)
    decision_var=[]
    # decision variables
    for i in range(len(menu_items)):
        variable=str('x'+str(i+1))
        if menu_items[i][0].split(",")[0]=="None":
            variable=pulp.LpVariable(str(variable),lowBound=0,upBound=0,cat='Integer')
        elif menu_items[i][0].split(",")[0]!="Roti" and menu_items[i][0].split(",")[0]!="Bread-Butter":
            variable=pulp.LpVariable(str(variable),lowBound=0,upBound=3,cat='Integer')
        else:
            variable=pulp.LpVariable(str(variable),lowBound=0,upBound=7,cat='Integer')
        decision_var.append(variable)



    total=""
    # objective function
    for i in range(len(menu_items)):
        expr=menu_items[i][-1][-1]*decision_var[i]/meal_weights[i]**2
        total+=expr

    prob += total

    #constraints
    # nutritional value wise constraint
    for j in range(3):
        total=""
        for i in range(len(menu_items)):
            expr=menu_items[i][-1][j+1]*decision_var[i]
            total+=expr
        if j==1:
            prob+=(total<=2.5*weight)
            prob+=(total>=0.5*weight)
        if j==0:
```

INPUT AND DATA ANALYSIS WITH RUDIMENTARY 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:\gurobi810\win1

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
```

Dish	Carbohydrates (per serving of dish)	Protein (per serving of dish)	Fats (per serving of dish)	Calories	weight (gm)
Milk	11	8	10.3	168	257.75
Juice	27.1	2.1	0	115	250
Banana	27.5	1.3	0.3	117	101
Boiled Egg	0.6	6.3	5.3	77	50
Egg Omlette	2	6.8	11.1	131	66
Paneer Bhurji	3.2	11.7	16.6	209	100
Cereals	36	10	0.3	175	50
Bread-Butter	18.7	2.8	7.9	157	45.4
Peanut Butter	4	3.5	8	95	16.5
Jam	14.1	0.1	0	57	20
Sprouts	4.8	2.4	0.2	24	80
poha	26.8	2.6	1.5	130	100
Sheera	38.5	2.5	9.6	247	130
Raw Banana Dry	18.7	0.9	0.3	73	90
Pindi Chole	25.2	7.4	6.1	180	150
Dal Fry	16.5	6.1	4.1	127	150
Carrot Rice	22.9	2.3	2.2	121	124
Roti	17.4	3	0.4	85	35
Rasna	8.9	0	0	35	250
Roasted papad	5.9	2.1	0.1	33	10
Milk	11	8	10.3	168	257.75
Coffee	22.3	6.2	12	229	257.75
Tea	11.5	4.3	4.4	102	257.75
Bread-Butter	18.7	2.8	7.9	157	45.4

Output Data

	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

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FUTURE PLANS & ROAD MAP

Goals For the Future of This Product

Currently, we have an extremely rudimentary prototype made as a proof of concept.

We further intend to add additional features like preparing meals and activity plans for a targeted bodyweight and fitness level.

In future, we plan to improve the meal suggestions by analyzing how the user responds to the meal plan. We also intend to collect the data from the user to a central system and provide that data to the mess caterers, so that a closed system can be created, and food wastage is minimized. Our end goal is to make Hostel Froodie the core of every college health system and hostel environment.

THANK YOU!

OUR TEAM

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