```python
import pulp
```

```python
#Instantiate the problem as "Diet Optimization LP"
my_lp_problem = pulp.LpProblem("Diet_Optimization_LP", pulp.LpMinimize)
```

```python
#Creating Decision Variables for each food item
bar = pulp.LpVariable('bar', lowBound=0, cat='Continuous')
shake = pulp.LpVariable('shake', lowBound=0, cat='Continuous')
redbull = pulp.LpVariable('redbull', lowBound=0, cat='Continuous')
mboost = pulp.LpVariable('mboost', lowBound=0, cat='Continuous')
egg = pulp.LpVariable('egg', lowBound=0, cat='Continuous')

#Objective Function
my_lp_problem += 10*bar + 3.75*shake + 3.75*redbull + 5*mboost + 1.25*egg

#Adding Constraints
my_lp_problem += 150*bar + 290*shake + 160*redbull + 100*mboost + 78*egg >= 200
my_lp_problem += 60*bar + 400*shake + 125*redbull + 120*mboost + 62*egg <= 5000
my_lp_problem += 12*bar + 35*shake + 0*redbull + 8*mboost + 6*egg >= 800   #prot
my_lp_problem += 0*bar + 2.6*shake + 0*redbull + 5*mboost + 2*egg >= 20   #Vit I
my_lp_problem += 95*bar + 300*shake + 0*redbull + 30*mboost + 130*egg >= 1300
my_lp_problem += 2*bar + 5.5*shake + 0*redbull + 1.5*mboost + 1*egg >= 18   #Iro
my_lp_problem += 91*bar + 318*shake + 0*redbull + 500*mboost + 63*egg >= 4700

#solve the my LP Problem

my_lp_problem.solve()
pulp.LpStatus[my_lp_problem.status]
```

```
Welcome to the CBC MILP Solver
Version: 2.10.5
Build Date: May 10 2021

command line - cbc /var/folders/xf/sym_dm2d1dq_7998vxvr369m0000gn/T/fb0ab8a6d2
334128b893be071abd2fa1-pulp.mps timeMode elapsed branch printingOptions all so
lution /var/folders/xf/sym_dm2d1dq_7998vxvr369m0000gn/T/fb0ab8a6d2334128b893be
071abd2fa1-pulp.sol (default strategy 1)
At line 2 NAME            MODEL
At line 3 ROWS
At line 12 COLUMNS
At line 47 RHS
At line 55 BOUNDS
At line 56 ENDATA
Problem MODEL has 7 rows, 5 columns and 29 elements
Coin0008I MODEL read with 0 errors
Option for timeMode changed from cpu to elapsed
Presolve 7 (0) rows, 5 (0) columns and 29 (0) elements
0  Obj 0 Primal inf 50.759755 (6)
3  Obj 549.47917
Optimal - objective value 549.47917
Optimal objective 549.4791667 - 3 iterations time 0.002
Option for printingOptions changed from normal to all
Total time (CPU seconds):       0.00   (Wallclock seconds):       0.00
```

Out[ ]:   'Optimal'

```python
print("Optimal Solution to the Diet Optimization Problem")
for variable in my_lp_problem.variables():
    print("{} = {}".format(variable.name, variable.varValue))
```

```
Optimal Solution to the Diet Optimization Problem
bar = 51.041667
egg = 31.25
mboost = 0.0
redbull = 0.0
shake = 0.0
```

```python
print("Optimal Solution to the Diet Optimization Problem")
for variable in my_lp_problem.variables():
    print("{} = {}".format(variable.name, variable.varValue))
```