```
from durable.lang import *

course_dict = {
    'dsa': 'Data Structures and Algorithms',
    'ap' : 'Advanced Programming',
    'os' : 'Operating Systems',
    'dbms' : 'Database Management System',
    'ml' : 'Machine Learning',
    'ai' : 'Artificial Intelligence',
    'dl' : 'Deep Learning',
    'ds' : 'Data Science',
    'aml' : 'Advanced Machine Learning',
    'rl' : 'Reinforcement Learning',
    'dw' : 'Data Warehousing',
    'dmg' : 'Data Mining',
    'nsc' : 'Network Security',
    'se' : 'Security Engineering',
    'ms' : 'Multimedia Security',
    'hci' : 'Human Computer Interaction',
    'dpp' : 'Design Processes and Perspectives',
    'ctd' : 'Circuit Theory and Devices',
    'eld' : 'Embedded Logic Design',
    'cn' : 'Computer Networks',
    'sns' : 'Signals and Systems',
    'ecomm' : 'Entrepreneurial Communication',
    'ef' : 'Entrepreneurial Finance',
    'ek' : 'Entrepreneurial Khichadi',
    'dcs' : 'Digital Communication Systems'
}
```

```
interest_dict = {
    'puzz' : 'Solving Puzzles',
    'how' : 'Knowing how things work',
    'comm' : 'Communicating with others',
    'sense' : 'Making sense out of facts',
    'des' : 'Designing stuff',
    'rep' : 'Repairing broken toys and appliances'
}

career_dict = {
    'sde' : 'Software Development Engineer',
    'mle' : 'Machine Learning Engineer',
    'ds' : 'Data Scientist',
    'uxd' : 'UI/UX Designer',
    'hde' : 'Hardware  Engineer',
    'sec' : 'Security Engineer',
    'ece' : 'Electronics and Communication Engineer',
    'ba' : 'Business Analyst'
}

hyper_dict = {
    'sde' : 'computer-software-engineer-career',
    'mle' : 'computer-information-research-scientist',
    'ds' : 'computer-information-research-scientist',
    'uxd' : 'usability-specialist-career',
    'hde' : 'computer-hardware-engineer-career',
    'sec' : 'information-security-analyst',
    'ece' : 'electrical-engineer-career',
    'ba' : 'financial-analyst-advisor-career'
}
```

```
score_gpa = {
    'sde_g':0.0,
    'mle_g':0.0,
    'ds_g':0.0,
    'uxd_g':0.0,
    'hde_g':0.0,
    'sec_g':0.0,
    'ece_g':0.0,
    'ba_g':0.0
}

score_interest = {
    'sde_i':0.0,
    'mle_i':0.0,
    'ds_i':0.0,
    'uxd_i':0.0,
    'hde_i':0.0,
    'sec_i':0.0,
    'ece_i':0.0,
    'ba_i':0.0
}

def list_items(dic):
  dict_index = dict()
  index = 0
  for i in dic:
    print(index,dic[i])
    dict_index[index] = i
    index+=1
  return dict_index
```

```
def input_choice(dict_index):
  lst_index = list(map(int,input().split()))
  lst = [dict_index[i] for i in lst_index]
  return lst

def best_career_option(score_gpa,score_interest):
  c_dic = dict()
  for i in score_gpa:
    c_dic[str(i)[:-2]] = score_gpa[i]+score_interest[str(i)[:-2]+"_i"]
  return max(c_dic, key = c_dic.get)
```

```
with ruleset('cgpa_dependence'):
  @when_all(m.dsa>=0.7)
  def software_enggr(c):
    score = (c.m.ap+c.m.dsa+c.m.os+c.m.dbms)/4.0
    score_gpa["sde_g"] = score

  @when_all(m.ml>=0.6)
  def ml_enggr(c):
    score = (c.m.ml+c.m.ai+c.m.dl+c.m.aml+c.m.rl+c.m.ds)/6.0
    score_gpa["mle_g"] = score

  @when_all(m.ds>=0.7)
  def data_scientist(c):
    score = (c.m.ds+c.m.dw+c.m.dmg)/3.0
    score_gpa["ds_g"] = score

  @when_all(m.hci>=0.8)
  def ux_des(c):
    score = (c.m.hci+c.m.dpp)/2.0
    score_gpa["uxd_g"] = score

  @when_all(m.ctd>=0.7)
  def hardware_enggr(c):
    score = (c.m.ctd+c.m.eld)/2.0
    score_gpa["hde_g"] = score

  @when_all(m.se>=0.6)
  def sec_enggr(c):
    score = (c.m.nsc+c.m.se+c.m.ms)/3.0
    score_gpa["sec_g"] = score
```

```
  @when_all(m.dcs>=0.7)
  def ece_enggr(c):
    score = (c.m.dcs+c.m.sns+c.m.cn)/3.0
    score_gpa["ece_g"] = score

  @when_all(m.ek>=0.7)
  def bus_analyst(c):
    score = (c.m.ef+c.m.ek+c.m.ecomm)/3.0
    score_gpa["ba_g"] = score


with ruleset('interest_dependence'):
  @when_all(m.puzz>=0.7)
  def software_enggr(d):
    score = (d.m.puzz+d.m.how+d.m.sense)/3.0
    score_interest["sde_i"] = score

  @when_all(m.sense>=0.8)
  def ml_enggr(d):
    score = (d.m.how+d.m.sense)/2.0
    score_interest["mle_i"] = score

  @when_all(m.sense>=0.8)
  def data_scientist(d):
    score = (d.m.how+d.m.sense)/2.0
    score_interest["ds_i"] = score

  @when_all(m.des>=0.7)
  def ux_des(d):
    score = (d.m.des+d.m.how)/2.0
    score_interest["uxd_i"] = score
```

```
  @when_all(m.rep>=0.7)
  def hardware_enggr(d):
    score = (d.m.rep+d.m.des+d.m.puzz)/3.0
    score_interest["hde_i"] = score

  @when_all(m.how>=0.7)
  def sec_enggr(d):
    score = (d.m.how+d.m.puzz+d.m.sense)/3.0
    score_interest["sec_i"] = score

  @when_all(m.rep>=0.7)
  def ece_enggr(d):
    score = (d.m.rep+d.m.des+d.m.puzz+d.m.how)/4.0
    score_interest["ece_i"] = score

  @when_all(m.comm>=0.8)
  def bus_analyst(d):
    score = (d.m.comm+d.m.sense+d.m.how)/3.0
    score_interest["ba_i"] = score

with ruleset('final_pred'):
  @when_all((m.sde_g>=0.4) & (m.sde_i>=0.3))
  def sde(e):
    e.assert_fact({'subject':'sde'})
  @when_all((m.mle_g>=0.5) & (m.mle_i>=0.3))
  def mle(e):
    e.assert_fact({'subject':'mle'})
  @when_all((m.ds_g>=0.5) & (m.ds_i>=0.3))
  def ds(e):
    e.assert_fact({'subject':'ds'})
```

```
  @when_all((m.uxd_g>=0.4) & (m.uxd_i>=0.3))
  def uxd(e):
    e.assert_fact({'subject':'uxd'})
  @when_all((m.hde_g>=0.6) & (m.hde_i>=0.4))
  def hde(e):
    e.assert_fact({'subject':'hde'})
  @when_all((m.sec_g>=0.6) & (m.sec_i>=0.4))
  def sec(e):
    e.assert_fact({'subject':'se'})
  @when_all((m.ba_g>=0.3)& (m.ba_i>=0.6))
  def ba(e):
    e.assert_fact({'subject':'ba'})
  @when_all((m.ece_g>=0.4) & (m.ece_i>=0.3))
  def ece(e):
    e.assert_fact({'subject':'ece'})

  @when_all(+m.subject)
  def output(e):
      print('{0}'.format(career_dict[e.m.subject]))
      print("Career Info :  https://www.careerprofiles.info/{0}.html".format(hyper_dict[e.m.subject]))

if __name__ == '__main__':

  name = input("Enter your name : ")
  print("Hi "+name+",")
  print("\nWelcome to Career Advisory System\n")
  print('Enter the index of the courses you have taken from the list below:-\n')

  course_dict_index = list_items(course_dict)
```

```
print('\nEnter your choice(space-separated):')
lst_courses = input_choice(course_dict_index)

print("\nEnter the grade point scored in the below mentioned subjects:-")

norm_gpa_lst = []
for i in lst_courses:
  print("Enter gpa in "+course_dict[i]+" : ",end = "")
  norm_gpa_lst.append(float(input())/10)

gpa = dict()
for i in range(len(lst_courses)):
  gpa[lst_courses[i]] = norm_gpa_lst[i]
for i in course_dict:
  if i not in gpa:
    gpa[i] = 0.0

print("\nWhich of the following areas interest you the most:-")

interest_dict_index = list_items(interest_dict)
print('\nEnter your choice(space-separated) in order of your preference:')
lst_interest = input_choice(interest_dict_index)
interest = dict()
for i in range(len(lst_interest)):
  interest[lst_interest[i]] = (10.0 - float(i))/10.0
```

```
for i in interest_dict:
  if i not in interest:
    interest[i] = 0.0

assert_fact('cgpa_dependence',gpa)
assert_fact('interest_dependence',interest)

combined_dic = dict()
for i in score_gpa:
  combined_dic[i] = score_gpa[i]
for i in score_interest:
  combined_dic[i] = score_interest[i]

try:
  print("\nYour possible carrer options are:-")
  assert_fact('final_pred',combined_dic)
  print("\nThe best career option is:")
  print(career_dict[best_career_option(score_gpa,score_interest)])
except Exception as e:
  print("\nSorry We could not find any suitable career as per your input")
```

Working Demo 1

```
Enter your name : Sarthak Maini
Hi Sarthak Maini,

Welcome to Career Advisory System

Enter the index of the courses you have taken from the list below:-

0 Data Structures and Algorithms
1 Advanced Programming
2 Operating Systems
3 Database Management System
4 Machine Learning
5 Artificial Intelligence
6 Deep Learning
7 Data Science
8 Advanced Machine Learning
9 Reinforcement Learning
10 Data Warehousing
11 Data Mining
12 Network Security
13 Security Engineering
14 Multimedia Security
15 Human Computer Interaction
16 Design Processes and Perspectives
17 Circuit Theory and Devices
18 Embedded Logic Design
19 Computer Networks
20 Signals and Systems
21 Entrepreneurial Communication
22 Entrepreneurial Finance
23 Entrepreneurial Khichadi
24 Digital Communication Systems
Enter your choice(space-separated):
0 1 2 4 5 6 15

Enter the grade point scored in the below mentioned subjects:-
Enter gpa in Data Structures and Algorithms : 9
Enter gpa in Advanced Programming : 9
Enter gpa in Operating Systems : 9
Enter gpa in Machine Learning : 8
Enter gpa in Artificial Intelligence : 9
Enter gpa in Deep Learning : 9
Enter gpa in Human Computer Interaction : 9

Which of the following areas interest you the most:-
0 Solving Puzzles
1 Knowing how things work
2 Communicating with others
3 Making sense out of facts
4 Designing stuff
5 Repairing broken toys and appliances

Enter your choice(space-separated) in order of your preference:
0 1 3 4

Your possible carrer options are:-
UI/UX Designer
Career Info :  https://www.careerprofiles.info/usability-specialist-career.html
Software Development Engineer
Career Info :  https://www.careerprofiles.info/computer-software-engineer-career.html

The best career option is:
Software Development Engineer
```

Working Demo - 2

```
Enter your name : Sarthak
Hi Sarthak,

Welcome to Career Advisory System

Enter the index of the courses you have taken from the list below:-

0 Data Structures and Algorithms
1 Advanced Programming
2 Operating Systems
3 Database Management System
4 Machine Learning
5 Artificial Intelligence
6 Deep Learning
7 Data Science
8 Advanced Machine Learning
9 Reinforcement Learning
10 Data Warehousing
11 Data Mining
12 Network Security
13 Security Engineering
14 Multimedia Security
15 Human Computer Interaction
16 Design Processes and Perspectives
17 Circuit Theory and Devices
18 Embedded Logic Design
19 Computer Networks
20 Signals and Systems
21 Entrepreneurial Communication
22 Entrepreneurial Finance
23 Entrepreneurial Khichadi
24 Digital Communication Systems


Enter your choice(space-separated):
4 5 6 8 23

Enter the grade point scored in the below mentioned subjects:-
Enter gpa in Machine Learning : 8
Enter gpa in Artificial Intelligence : 9
Enter gpa in Deep Learning : 8
Enter gpa in Advanced Machine Learning : 9
Enter gpa in Entrepreneurial Khichadi : 9

Which of the following areas interest you the most:-
0 Solving Puzzles
1 Knowing how things work
2 Communicating with others
3 Making sense out of facts
4 Designing stuff
5 Repairing broken toys and appliances

Enter your choice(space-separated) in order of your preference:
0 3 1 2

Your possible carrer options are:-
Machine Learning Engineer
Career Info :  https://www.careerprofiles.info/computer-information-research-scientist.html

The best career option is:
Machine Learning Engineer
```