

Assignment 3

Course Suggestion and Extra Curricular Activities Suggestion (Forward Chaining)

To understand about program, firstly let's look at main function and then see step by step.

```
# the main function
if __name__ == '__main__':
    spla, spltypea, lvla = printmsg()
    spla = encode(spla)
    print("\n-----HERE ARE YOUR RESULTS-----")
    assert_fact('takecourse',{ 'area':spla, 'spltype':spltypea, 'lvl':lvla})
    print("\n-----")
    ch = printmsg2()
    print("\n-----")
    if ch == 'Technical':
        cht = tech()
    elif ch == 'NonTechnical':
        cht = nontech()
    assert_fact('curricular',{ 'domain':ch, 'domtype':cht})
    print("For more details, visit: http://studentcouncil.iiitd.edu.in/clubs.html")
    print("Also, great news is that you can open your own club")
    print("\n-----")
    print("\n\tI HOPE THAT I WAS ABLE TO HELP YOU A BIT. HAVE A GREAT DAY!")
    print("\n-----")
```

Firstly it calls printmsg() which prints the welcome note and also asks for the choices for specialization, interest into theory or non-theory and also about the level of course which the user is interested into. Later on encode() is for simple encoding of specializations into abbreviations so that it is easy to refer to them later on. Then comes the main part which is for choosing technical courses, where fact has to be asserted, which outputs the must take courses irrespective of user's choice because in specialization, some electives are to be done as further electives are based on them and it also suggests then the electives based on user's choice. Have a look on both approaches through 3 figures given below.

```
# based on inputs by user
with ruleset('takecourse'):
    # must take course for ai
    @when_all((m.area == 'ai'))
    def func(c):
        c.assert_fact({'subject': 'ml'})
        c.assert_fact({'subject': 'ai'})
```

Figure: For must take courses methodology

```
@when_all((m.area == 'de') & (m.spltype == 't') & (m.lv1 == 'i'))
def func(c):
    c.assert_fact('subjects', {'ele': 'ml'})
    c.assert_fact('subjects', {'ele': 'ga'})
```

Figure: Courses as per user's choice methodology

```
# asserting facts for subjects
with ruleset('subjects'):
    @when_all(m.ele == 'ml')
    def do1(d):
        d.assert_fact({'subject': 'ml'})
```

Figure: For ruleset('subjects') where the actual magic happens for courses as per user's choice

Now coming to how they are output, the functions are given below. They make use of `encode_sub()` which returns full form and the course code which completes the URL created from where the user can get the details of the course.

```
# output for must take courses
@when_all(+m.subject)
def output(c):
    sub, code = encode_sub(c.m.subject)
    print()
    print("-> YOU HAVE TO TAKE THIS COURSE IRRESPECTIVE OF YOUR CHOICE")
    print("-> MUST TAKE COURSE: {0}'.format(sub))
    print('    COURSE DETAILS: http://techtree.iiitd.edu.in/viewDescription/filename?={0}'.format(code))
```

Figure: Courses that have to be taken (output)

```
# output for courses that are as per user's interest
@when_all(+m.subject)
def output(d):
    sub, code = encode_sub(d.m.subject)
    print()
    print("-> CAN TAKE COURSE (AS PER YOUR INTEREST): {0}'.format(sub))
    print('    COURSE DETAILS: http://techtree.iiitd.edu.in/viewDescription/filename?={0}'.format(code))
```

Figure: Courses as per user's choice (output)

After this, user is asked for his/her interest in co-curricular activities in form of technical or non-technical stuff, then further minute interest are asked which can be seen through the `tech()` and `nontech()` function and on basis of choice the facts are asserted. See on next page to find both the functions.

```

# printing note for technical clubs
def tech():
    print("\nSo, within technical what are you interested into?")
    print("-> Coding")
    print("-> DataScience")
    print("-> Security")
    print("-> ProductDesign")
    print("-> Hardware")
    print("-> Maths")
    print("-> TechCommunity")
    cht = input("Enter here: ")
    return cht

# printing note for non technical clubs
def nontech():
    print("\nSo, within non-technical what are you interested into?")
    print("-> Literature, Philosophy, Art (Write a)")
    print("-> NGO (Write b)")
    print("-> Music, Theatre, Dance (Write c)")
    print("-> Humour (Write d)")
    print("-> Fashion (Write e)")
    print("-> Food and Fun (Write f)")
    print("-> Photography (Write g)")
    print("-> Chess (Write h)")
    cht = input("Enter here: ")
    return cht

```

Figure: Technical and non-technical clubs display function and also function for taking input

The facts are asserted as shown below

```

# rules for co-curricular activities as per interest of user
with ruleset('curricular'):
    @when_all((m.domain == 'Technical') & (m.domtype == 'Coding'))
    def club(e):
        e.assert_fact({'subject': 'ACM Student Chapter, Byld, Cyborg, Foobar, IEEE'})

```

And output is displayed through following

```

@when_all(+m.subject)
def output(e):
    print()
    print("\n-----HERE ARE YOUR RESULTS-----\n")
    print('You can join following club(s): {}'.format(e.m.subject))

```

NOTE: *when_all* is for antecedent and the things that go into the function written below are the consequents. If still there is some doubt in understanding of code, please go through the output given below once and then again read the above explanations.

HOW TO RUN THE CODE?

Simply write *python main.py* in cmd and then go on writing as the program instructs and you would get the result.

OUTPUT

```
C:\Users\hp\Desktop\SUBJECTS\AI\Assignment\Assignment 3\AI-A3-Simran-MT21146\CourseAndExtraCurricularActivitySuggestion_FowardChaining>python main.py
```

```
-----  
Welcome to Avvisare Fratello  
-----
```

```
What's your name? Simran
```

```
Hi Simran, Hope you are having a great time at IIITD.  
I am Avvisare Fratello and would love to help you with Course Suggestion
```

```
I really hope that I can help you well, but  
help me to help you, please answer some questions.
```

```
-----  
Here are few questions for Course Suggestion  
-----
```

```
Which specialization are you going in for?
```

```
-> Artificial Intelligence
```

```
-> Data Engineering
```

```
-> Information Security
```

```
Enter here: Data Engineering
```

```
Well... very good so far! Please tell me what sort of courses are you looking for?
```

```
-> Theory (Write t)
```

```
-> Non Theory (Write n)
```

```
Here, no course is pure theory/ pure non theory, these terms refer to where it tends more.
```

```
Enter here: t
```

```
One last information! Won't bother you anymore! What level of course you really want?
```

```
-> Advanced (Write a)
```

```
-> Intermediate (Write i)
```

```
Enter here: i
```

```
-----HERE ARE YOUR RESULTS-----
```

- > CAN TAKE COURSE (AS PER YOUR INTEREST): MACHINE LEARNING
COURSE DETAILS: <http://techtree.iiitd.edu.in/viewDescription/filename?=CSE343>
- > CAN TAKE COURSE (AS PER YOUR INTEREST): GRADUATE ALGORITHMS
COURSE DETAILS: <http://techtree.iiitd.edu.in/viewDescription/filename?=CSE525>
- > YOU HAVE TO TAKE THIS COURSE IRRESPECTIVE OF YOUR CHOICE
-> MUST TAKE COURSE: DATA WAREHOUSING
COURSE DETAILS: <http://techtree.iiitd.edu.in/viewDescription/filename?=CSE606>
- > YOU HAVE TO TAKE THIS COURSE IRRESPECTIVE OF YOUR CHOICE
-> MUST TAKE COURSE: DATA MINING
COURSE DETAILS: <http://techtree.iiitd.edu.in/viewDescription/filename?=CSE506>

Admst of courses tension, don't skip extra curricular activities.
Believe me, they won't waste your time, but increase your productivity.
At IIITD, there are a lot of clubs, you are interested in
-> Technical
-> NonTechnical
Enter here: Technical

So, within technical what are you interested into?
-> Coding
-> DataScience
-> Security
-> ProductDesign
-> Hardware
-> Maths
-> TechCommunity
Enter here: Coding

-----HERE ARE YOUR RESULTS-----

You can join following club(s): ACM Student Chapter, Byld, Cyborg, Foobar, IEEE
For more details, visit: <http://studentcouncil.iiitd.edu.in/clubs.html>
Also, great news is that you can open your own club

I HOPE THAT I WAS ABLE TO HELP YOU A BIT. HAVE A GREAT DAY!

C:\Users\hp\Desktop\SUBJECTS\AI\Assignment\Assignment 3\AI-A3-Simran-MT21146\CourseAndExtraCurricularActivitySuggestion_FowardChaining>

Snapshot for the output above

```
-----
Welcome to Avisare Fratello
-----
What's your name? Simran

Hi Simran, Hope you are having a great time at IIITD.
I am Avisare Fratello and would love to help you with Course Suggestion

I really hope that I can help you well, but
help me to help you, please answer some questions.

-----
Here are few questions for Course Suggestion
-----

Which specialization are you going in for?
-> Artificial Intelligence
-> Data Engineering
-> Information Security
Enter here: Data Engineering

Well... very good so far! Please tell me what sort of courses are you looking for?
-> Theory (Write t)
-> Non Theory (Write n)
Here, no course is pure theory/ pure non theory, these terms refer to where it tends more.
Enter here: t

One last information! Won't bother you anymore! What level of course you really want?
-> Advanced (Write a)
-> Intermediate (Write i)
Enter here: i

-----HERE ARE YOUR RESULTS-----

-> CAN TAKE COURSE (AS PER YOUR INTEREST): MACHINE LEARNING
  COURSE DETAILS: http://techtree.iiitd.edu.in/viewDescription/filename?=CSE343

-> CAN TAKE COURSE (AS PER YOUR INTEREST): GRADUATE ALGORITHMS
  COURSE DETAILS: http://techtree.iiitd.edu.in/viewDescription/filename?=CSE525

-> YOU HAVE TO TAKE THIS COURSE IRRESPECTIVE OF YOUR CHOICE
-> MUST TAKE COURSE: DATA WAREHOUSING
  COURSE DETAILS: http://techtree.iiitd.edu.in/viewDescription/filename?=CSE606

-> YOU HAVE TO TAKE THIS COURSE IRRESPECTIVE OF YOUR CHOICE
-> MUST TAKE COURSE: DATA MINING
  COURSE DETAILS: http://techtree.iiitd.edu.in/viewDescription/filename?=CSE506

-----

Admist of courses tension, don't skip extra curricular activities.
Believe me, they won't waste your time, but increase your productivity.
At IIITD, there are a lot of clubs, you are interested in
-> Technical
-> NonTechnical
Enter here: Technical

-----

So, within technical what are you interested into?
-> Coding
-> DataScience
-> Security
-> ProductDesign
-> Hardware
-> Maths
-> TechCommunity
Enter here: Coding

-----HERE ARE YOUR RESULTS-----

You can join following club(s): ACM Student Chapter, Byld, Cyborg, Foobar, IEEE
For more details, visit: http://studentcouncil.iiitd.edu.in/clubs.html
Also, great news is that you can open your own club

-----

I HOPE THAT I WAS ABLE TO HELP YOU A BIT. HAVE A GREAT DAY!
-----
```

Output for another scenario

Welcome to Avvisare Fratello

What's your name? Jatin Kalra

Hi Jatin Kalra, Hope you are having a great time at IIITD.
I am Avvisare Fratello and would love to help you with Course Suggestion

I really hope that I can help you well, but
help me to help you, please answer some questions.

Here are few questions for Course Suggestion

Which specialization are you going in for?

-> Artificial Intelligence

-> Data Engineering

-> Information Security

Enter here: Artificial Intelligence

Well... very good so far! Please tell me what sort of courses are you looking for?

-> Theory (Write t)

-> Non Theory (Write n)

Here, no course is pure theory/ pure non theory, these terms refer to where it tends more.

Enter here: n

One last information! Won't bother you anymore! What level of course you really want?

-> Advanced (Write a)

-> Intermediate (Write i)

Enter here: i

-----HERE ARE YOUR RESULTS-----

-> CAN TAKE COURSE (AS PER YOUR INTEREST): DATA MINING

COURSE DETAILS: <http://techtree.iiitd.edu.in/viewDescription/filename?=CSE506>

-> YOU HAVE TO TAKE THIS COURSE IRRESPECTIVE OF YOUR CHOICE

-> MUST TAKE COURSE: ARTIFICIAL INTELLIGENCE

COURSE DETAILS: <http://techtree.iiitd.edu.in/viewDescription/filename?=CSE643>

-> YOU HAVE TO TAKE THIS COURSE IRRESPECTIVE OF YOUR CHOICE

-> MUST TAKE COURSE: MACHINE LEARNING

COURSE DETAILS: <http://techtree.iiitd.edu.in/viewDescription/filename?=CSE343>

Admst of courses tension, don't skip extra curricular activities.
Believe me, they won't waste your time, but increase your productivity.
At IIITD, there are a lot of clubs, you are interested in

-> Technical

-> NonTechnical

Enter here: NonTechnical

So, within non-technical what are you interested into?

-> Literature, Philosophy, Art (Write a)

-> NGO (Write b)

-> Music, Theatre, Dance (Write c)

-> Humour (Write d)

-> Fashion (Write e)

-> Food and Fun (Write f)

-> Photography (Write g)

-> Chess (Write h)

Enter here: c

-----HERE ARE YOUR RESULTS-----

You can join following club(s): Audiobytes, Machaan, Madtoes

For more details, visit: <http://studentcouncil.iiitd.edu.in/clubs.html>

Also, great news is that you can open your own club

I HOPE THAT I WAS ABLE TO HELP YOU A BIT. HAVE A GREAT DAY!
