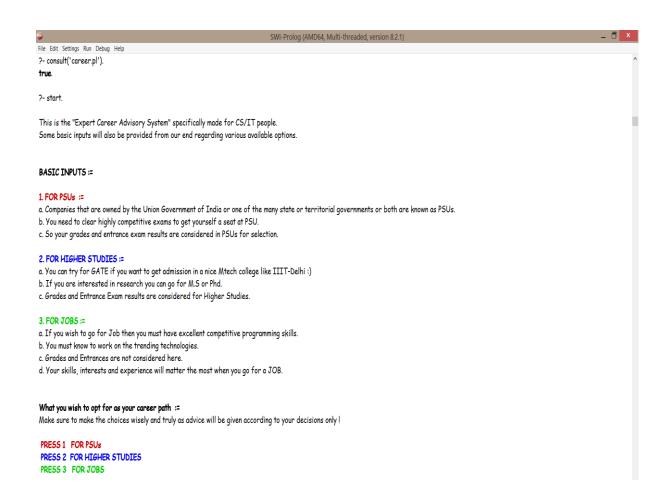
ΑI

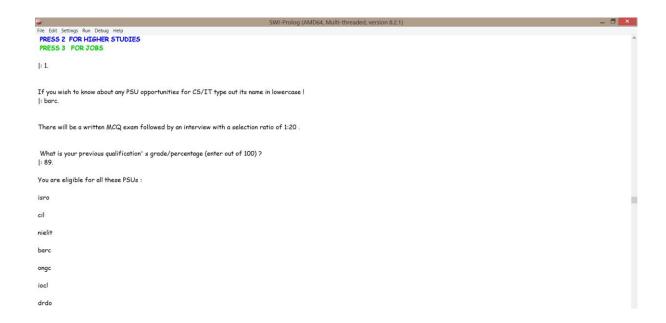
Assignment – 1 Report Anubhav Ruhela MT20083

Screenshots:

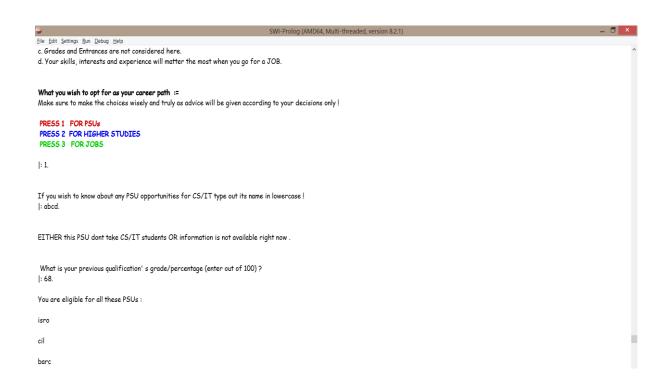
(1) Basic Inputs given at the beginning:-



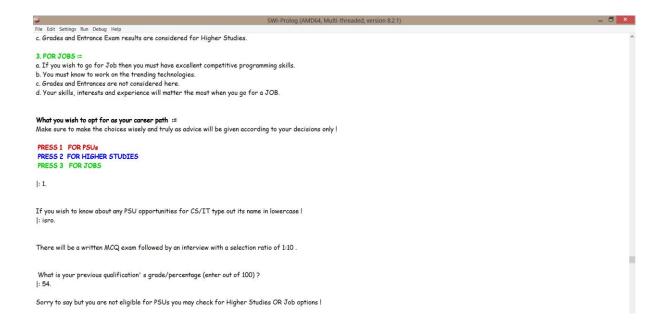
(2) PSU information generated:-



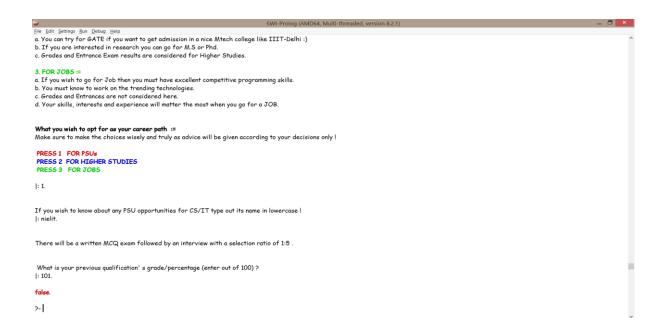
(3) For wrong PSU info asked error message will be generated:-



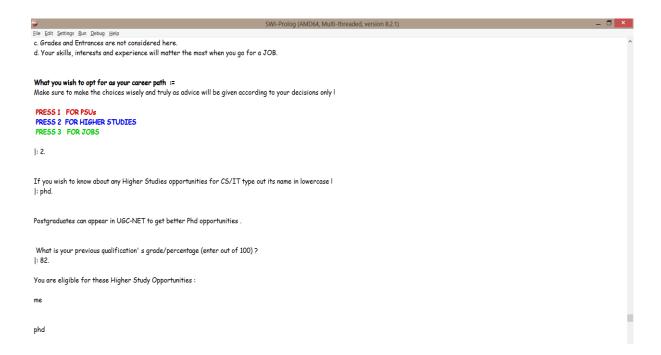
(4) On the basis of input grades (PSU) advice gets generated:-



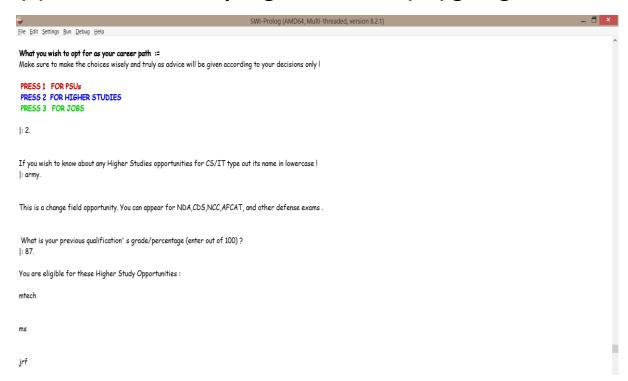
(5) On the basis of input grades (PSU) advice gets generated:-



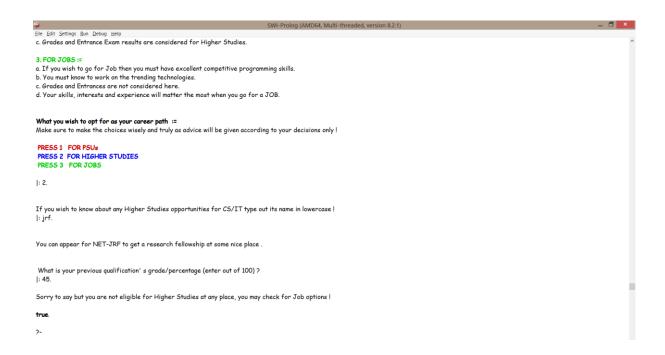
(6) On the basis of input grades (HS) advice gets generated:-



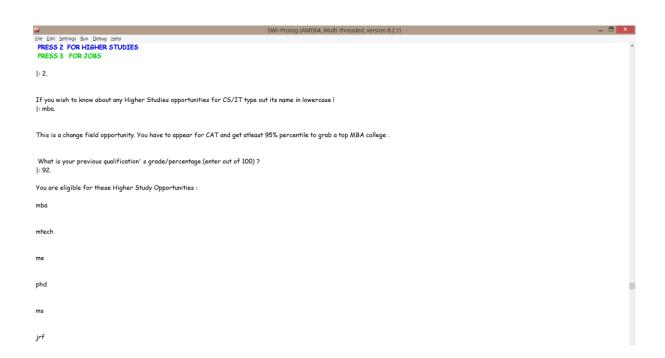
(7) On the basis of input grades advice (HS) gets generated:-



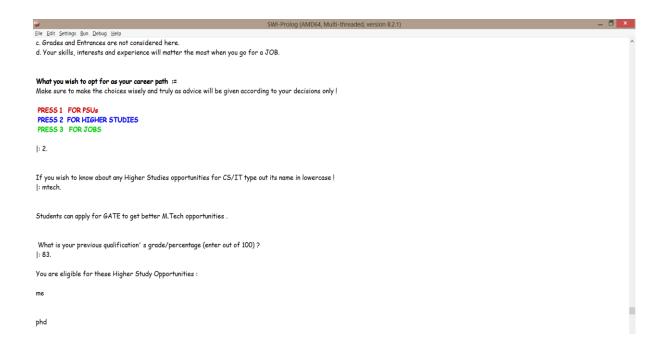
(8) On the basis of input grades advice gets generated:-



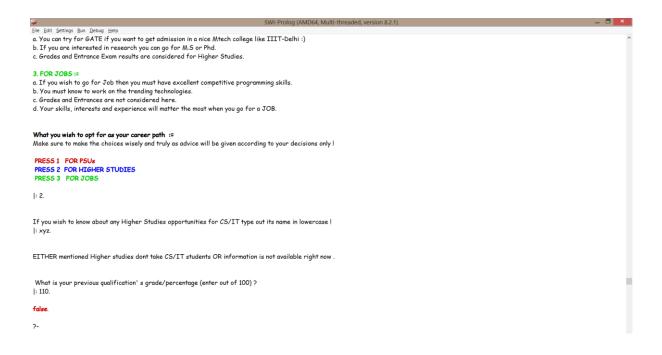
(9) Higher Studies Information generated:-



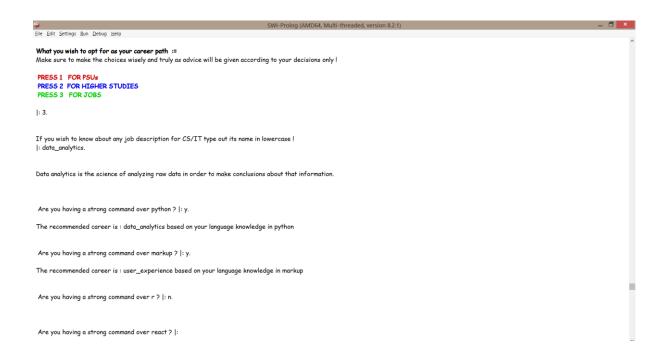
(10) Higher Studies Eligibility generated based on your grades:-



(11) When given wrong inputs:-



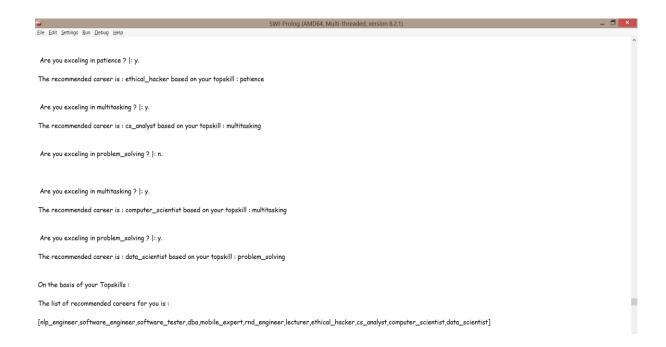
(12) You can get info about any CS/IT career:-



(13) List generated on the basis of your coding skills:-



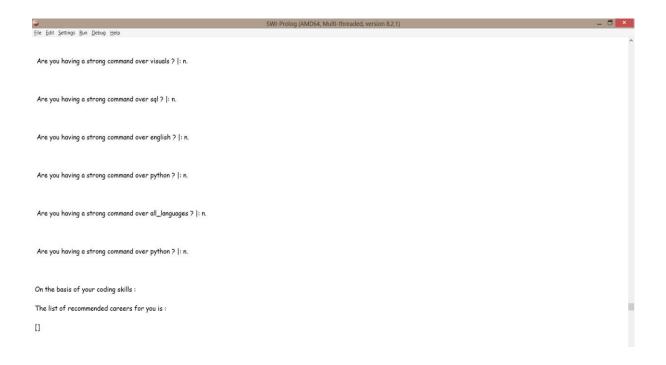
(14) List generated on the basis of your top skills:-



(15) List generated on the basis of your interests:-



(16) Nothing gets generated if we don't give 'y' at input:-



```
start :-
      nl,
      write('This is the "Expert Career Advisory System" specifically made
for CS/IT people.'), nl,
      write('Some basic inputs will also be provided from our end regarding
various available options.'), nl, nl,
      explain,
      selection.
% i have assumed that all the people using this system are grad/postgrad/phd
CS/IT students.
explain :-
                  nl,
                         ansi_format([bold,fg(black)], 'BASIC ~w', ['INPUTS :=
']),
                         nl, nl,
                         ansi_format([bold,fg(red)], '1. FOR PSUs ~w', [' :=
']),nl,
                         write('a. Companies that are owned by the Union
Government of India or one of the many state or territorial governments or
both are '),
                         write('known as PSUs.'),nl,
                         write('b. You need to clear highly competitive exams
to get yourself a seat at PSU.'),nl,
                         write('c. So your grades and entrance exam results
are considered in PSUs for selection.'),
                         nl, nl,
                         ansi_format([bold,fg(blue)], '2. FOR HIGHER ~w',
['STUDIES :=']),nl,
                         write('a. You can try for GATE if you want to get
admission in a nice Mtech college like IIIT-Delhi :) '),nl,
                         write('b. If you are interested in research you can
go for M.S or Phd.'),nl,
                         write('c. Grades and Entrance Exam results are
considered for Higher Studies.'),nl,nl,
                         ansi_format([bold,fg(green)], '3. FOR JOBS ~w',
[':=']),nl,
```

```
write('a. If you wish to go for Job then you must
have excellent competitive programming skills.'),nl,
                         write('b. You must know to work on the trending
technologies.'),nl,
                         write('c. Grades and Entrances are not considered
here.'),nl,
                         write('d. Your skills, interests and experience will
matter the most when you go for a JOB.'),nl,nl.
selection:- nl,
                   ansi_format([bold,fg(black)], 'What you wish to opt for as
your career path ~w', [' := ']),nl,
                  write('Make sure to make the choices wisely and truly as
advice will be given according to your decisions only !'),
                   nl,nl,ansi_format([bold,fg(red)], ' PRESS 1 ~w', [' FOR
PSUs ']),nl,
                   ansi_format([bold,fg(blue)], ' PRESS 2 ~w', [' FOR HIGHER
STUDIES ']),nl,
                   ansi_format([bold,fg(green)], ' PRESS 3 ~w', [' FOR JOBS
']),nl,nl,
                   read(Select),
                   module(Select).
module(1):- infopsu,
                   askpsu(X),!.
:- discontiguous module/1.
%psu fact base
psu(isro,65).
psu(cil,65).
psu(nielit,70).
psu(barc,65).
psu(ongc,70).
psu(iocl,70).
```

```
psu(drdo,70).
%here i have create a two ladder if else type of logic i have created to
narrow the results
checkpsu(X):-
                 between(65,100,X),
                         nl,write('You are eligible for all these PSUs :
'),nl,
                         is_greater(X)
                         ;is_smaller(X),fail.
checkpsu(X):-
between(0,64,X),nl,
                         write('Sorry to say but you are not eligible for PSUs
you may check for Higher Studies OR Job options !'),nl,nl.
is_greater(X):- between(70,100,X),
                         psu(Y,_),nl,
                         write(Y), nl, fail.
is smaller(X):-
                  between(65,69,X),
                         Z=65,
                         psu(Y,Z),nl,
                         write(Y),nl,fail.
askpsu(_Grade):-nl,write(' What is your previous qualification\'\ss
grade/percentage (enter out of 100) ? '),nl,
                         read(Gradepsu),
                         checkpsu(Gradepsu).
infopsu:- nl,nl,
                  write('If you wish to know about any PSU opportunities for
CS/IT type out its name in lowercase !'),nl,
                  read(PSU), nl,
                  informationpsu(PSU),!.
```

```
informationpsu(isro):-nl,write('There will be a written MCQ exam followed by
an interview with a selection ratio of 1:10 .'),nl,nl.
informationpsu(cil):-nl,write('There will be a written MCQ exam followed by an
interview with a selection ratio of 1:3 .'),nl,nl.
informationpsu(barc):-nl,write('There will be a written MCQ exam followed by
an interview with a selection ratio of 1:20 .'),nl,nl.
informationpsu(ongc):-nl,write('You will get an interview call directly if you
have GATE AIR<150 so prepare hard for GATE exam .'),nl,nl.
informationpsu(iocl):-nl,write('You will get an interview call directly if you
have GATE AIR<150 so prepare hard for GATE exam .'),nl,nl.
informationpsu(drdo):-nl,write('There will be a subjective written exam
followed by an interview .'), nl, nl.
informationpsu(drdo):-nl,write('There will be a subjective written exam
followed by an interview .'), nl, nl.
informationpsu(nielit):-nl,write('There will be a written MCO exam followed by
an interview with a selection ratio of 1:5 .'), nl, nl.
informationpsu(others):-nl,write('There are many other government and PSUs
exams that sometimes takes CS/IT students and sometimes not'),nl,nl.
informationpsu(_):-nl,write('EITHER this PSU dont take CS/IT students OR
information is not available right now .'),nl,nl.
module(2):- infohs,
                   askhs(P),!.
:- discontiguous module/2.
```

```
%higher studies fact base percentages taken keeping in mind recent trends
hs(mba,90).
hs(mtech,85).
hs(me,80).
hs(phd,80).
hs(ms,85).
hs(jrf,85).
infohs:- nl,nl,
                  write('If you wish to know about any Higher Studies
opportunities for CS/IT type out its name in lowercase !'),nl,
                  read(HS),nl,
                  informationhs(HS),!.
askhs(_Grade):- nl,write(' What is your previous qualification\'\ss
grade/percentage (enter out of 100) ? '),nl,
                         read(Gradehs),
                         checkhs(Gradehs).
checkhs(P):- between(80,100,P),
                         nl,write('You are eligible for these Higher Study
Opportunities : '),nl,
                        is good(P);
                         is better(P);
                         is_best(P)
                         ,fail.
checkhs(P):- between(0,79,P),n1,
                         write('Sorry to say but you are not eligible for
Higher Studies at any place, you may check for Job options ! '),nl,nl.
```

%here i have tried to make things more complex by switching to a triple ladder if else type to narrow the results

```
is_best(P):- between(90,100,P),
                         hs(Y,_),nl,
                         write(Y), nl, nl, fail.
is_better(P):- between(85,89,P),
                         Q=85,
                         hs(Y,Q),nl,
                         write(Y),nl,nl,fail.
is_good(P):- between(80,84,P),
                         0 = 80,
                         hs(Y,Q),nl,
                         write(Y),nl,nl,fail.
informationhs(mba):-nl,write('This is a change field opportunity. You have to
appear for CAT and get atleast 95% percentile to grab a top MBA college
.'),nl,nl.
informationhs(mtech):-nl,write('Students can apply for GATE to get better
M.Tech opportunities .'),nl,nl.
informationhs(me):-nl,write('Students can appear in GATE to get better M.E
opportunities.'),nl,nl.
informationhs(phd):-nl,write('Postgraduates can appear in UGC-NET to get
better Phd opportunities .'), nl, nl.
informationhs(ms):-nl,write('1. For MS in India a good GATE score will land
you in a nice college for MS .'),nl,
```

```
write('2. For MS abroad you can appear for GRE,
GMAT, MCAT, LSAT, etc exams to get a nice college .'), nl, nl.
informationhs(jrf):-nl,write('You can appear for NET-JRF to get a research
fellowship at some nice place .'),nl,nl.
informationhs(army):-nl,write('This is a change field opportunity. You can
appear for NDA, CDS, NCC, AFCAT, and other defense exams .'), nl, nl.
informationhs(others):-nl,write('There are many Higher Study opportunities
that you can apply for !'),nl,nl.
informationhs():-nl,write('EITHER mentioned Higher studies dont take CS/IT
students OR information is not available right now .'),nl,nl.
module(3):-suggest( X, Y).
%fact base
%basic(career_name,language,top_skill,interest)
:- discontiguous basic/4.
basic(computer_scientist,all_languages,multitasking,research).
basic(data_scientist,python,problem_solving,data).
basic(data_analytics,python,critical_thinking,data).
basic(user experience, markup, editing, design).
basic(nlp_engineer,r,problem_solving,textdata).
basic(app_developer, react, logical, mobile_computing).
basic(project manager,english,multitasking,research).
basic(ai_engineer,prolog,problem_solving,ai).
basic(rnd engineer,all languages,multitasking,research).
basic(dba,sql,leadership,networking).
```

```
basic(full_stack_developer, frontend, creativity, design).
basic(mobile_expert,android,reasoning,mobile_computing).
basic(big_data_engineer,python,problem_solving,data).
basic(lecturer, all languages, leadership, teaching).
basic(graphic_designer, visuals, creativity, design).
basic(ethical_hacker,sql,patience,networking).
basic(cs analyst,english,multitasking,research).
basic(software tester, java, analytical, testing).
basic(software_engineer,backend,analytical,software).
basic(ml engineer,python,problem solving,data).
:- discontiguous suggest1/2.
suggest(_X,_Y):-
      informationjob, suggestl(_A,_B), suggests(_C,_D), suggesti(_E,_F).
% on basis of language
convert_to_list1([Language|Tail]):- retract(recommended1(Language)),
convert to list1(Tail).
convert_to_list1([]).
suggestl(Career, Language):-
basic(Career, Language,__,_), nl, interestedl(Language), write('The recommended
career is : '),
                                             write(Career), write(' based on
your language knowledge in '),write(Language),
                                             nl.
                                             assert(recommended1(Career)),fail.
informationjob:- nl,nl,
```

write('If you wish to know about any job
description for CS/IT type out its name in lowercase !'),nl,

read(JOB),nl,

infojob(JOB),!.

infojob(data_analytics):-nl,write('Data analytics is the science of analyzing
raw data in order to make conclusions about that information.'),nl,nl.

infojob(user_experience):-nl,write('A user experience designer is generally a
jack of all trades in the design process centered on users.'),nl,nl.

infojob(nlp_engineer):-nl,write('NLP Engineer responsibilities include
transforming natural language data into useful features using NLP techniques
to feed classification algorithms.'),nl,nl.

infojob(ai_engineer):-nl,write('An AI engineer builds AI models using machine
learning algorithms and deep learning neural networks to draw business
insights'),nl,nl.

infojob(software_engineer):-nl,write('A software engineer applies mathematical analysis and the principles of computer science in order to design and develop computer software'),nl,nl.

infojob(software_tester):-nl,write('Software Testers are responsible for the
quality of software development and deployment'),nl,nl.

infojob(dba):-nl,write('Your responsibility as a database administrator (DBA)
will be the performance, integrity and security of a database. '),nl,nl.

infojob(full_stack_developer):-nl,write('A full stack developer is an engineer
who can handle all the work of databases, servers, systems engineering, and
clients.'),nl,nl.

infojob(mobile_expert):-nl,write('The goal of the Mobile Expert is to create
an outstanding buying experience for the customer and a positive a team
environment.'),nl,nl.

infojob(app_developer):-nl,write('Application Developer is responsible for developing and modifying source code for software applications.'),nl,nl.

infojob(rnd_engineer):-nl,write('A research and development job allows graduate engineers to use their skills to push the frontiers of science forward.'),nl,nl.

infojob(lecturer):-nl,write('Lecturer requires lot of research and hard work
for a great academic profession.'),nl,nl.

infojob(graphic_designer):-nl,write('Graphic designers create visual concepts, using computer software or by hand, to communicate ideas that inspire, inform, and captivate consumers.'),nl,nl.

```
infojob(ethical_hacker):-nl,write('Ethical hackers know how to find and
exploit vulnerabilities and weaknesses in various systems. They break into
systems legally and ethically.'),nl,nl.
infojob(cs analyst):-nl,write('System analyst is a good position for those
with interest in computer science, information technology, and
management.'),nl,nl.
infojob(project manager):-nl,write('A project manager is responsible to handle
the project from planning to completion.'),nl,nl.
infojob(ml engineer):-nl,write('Machine learning engineers feed data into
models defined by data scientists.'), nl, nl.
infojob(big data engineer):-nl,write('A Big Data Engineer is a person who
creates and manages a companys Big Data infrastructure and tools, and is
someone that knows how to get results from vast amounts of data
quickly'), nl, nl.
infojob(data_scientist):-nl,write('Data scientists are a mix of
mathematicians, trend-spotters, and computer scientists.'),nl,nl.
infojob(computer scientist):-nl,write('Computer scientists work in the
development of mathematical models for working with computer-based
systems.'),nl,nl.
infojob(_):-nl,write('EITHER this Job profile is not for CS/IT students OR
information is not available right now .'),nl,nl.
suggestl(_,_) :- nl,nl,write('On the basis of your coding skills
:'),nl,convert to list1(List1),nl,
                          write('The list of recommended careers for you is
:'),nl,nl, write(List1),write(' '), nl.
interestedl(Language):-nl,write(' Are you having a strong command over
'),write(Language),write(' ? '),read(R),nl,R=y.
%on basis of topskills
convert to list2([Topskill|Tail]):- retract(recommended1(Topskill)),
convert to list2(Tail).
```

convert to list2([]).

```
suggests(Career, Topskill):-
basic(Career,_,Topskill,_),nl,interesteds(Topskill),write('The recommended
career is : '),
                                            write(Career), write(' based on
your topskill : '),write(Topskill),nl,
                                            assert(recommended1(Career)),fail.
suggests(_,_) :- nl,nl,write('On the basis of your Topskills :'),nl,
convert to list2(List2),nl,
                               write('The list of recommended careers for you
is :'),nl,nl, write(List2),write(' '), nl.
interesteds(Topskill):-nl,write(' Are you exceling in
'),write(Topskill),write(' ? '),read(R),nl,R=y.
%on basis of Interests
convert_to_list3([Interest|Tail]):- retract(recommendedi(Interest)),
convert to list3(Tail).
convert_to_list3([]).
suggesti(Career,Interest):-
basic(Career,_,_,Interest),nl,interestedi(Interest),write('The recommended
career is : '),
                                            write(Career), write(' based on
your interest in '),write(Interest),nl,
                                            assert(recommendedi(Career)),fail.
suggesti(_,_) :- nl,nl,write('On the basis of your Interests
:'),nl,convert to list3(List3),nl,
                          write('The list of recommended careers for you is
:'),nl,nl, write(List3),write(' '), nl.
```

interestedi(Interest):-nl,write('Are you interested in
'),write(Interest),write(' ? '),read(R),nl,R=y.