

Experiment-2:

Construction of a tree of student-teacher-course-year and doing arithmetic operations (sum, subtraction, multiplication, remainder).

Objective:

We have to create a prolog code to make a hierarchy of student-teacher-course-year tree and check the validation of this tree. Next we have to create another prolog code to determine arithmetic operations (sum, subtraction, multiplication, remainder).

Arithmetic operation:

%sum of two numbers

sum(X,Y):-

S is X+Y,

write(S).

%sum of two numbers

sub(X,Y):-

S is X-Y,

write(S).

%multiplication of two numbers

mul(X,Y):-

M is X*Y,

write(M).

%power

pow(X,Y):-

P is X^Y ,

write(P).

%mod of two numbers

mod(X,Y):-

M is mod(X,Y),

write(M).



```
GRI Prolog console
File Edit Terminal Debug Help
(RUN) Prolog 1.4.4 (32 bits)
Compiled May 15 2013, 12:35:56 with i686-w64-mingw32-gcc
By Daniel Diaz
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compiling C:/Users/psan/Documents/arithmetic.pl for byte code...
C:/Users/psan/Documents/arithmetic.pl compiled. 27 lines read = 1657 bytes written, 9 ms
| ?- sum(2,-2).
|
yes
| ?- sub(4,2).
|
2
yes
| ?- mul(2,3).
|
6
yes
| ?- mod(7,2).
|
1
yes
| ?- |
```

Searching from student-teacher-course-year tree:

teachingYear(_2021,abdul).

teachingYear(_2022,komol).

teachingYear(_2021,latif).

teaches(latif,cse_401).

teaches(latif,cse_402).

teaches(abdul,cse_403).

teaches(komol,cse_404).

studiedBy(cse_401,maksuda).

studiedBy(cse_401,munia).

studiedBy(cse_402,mouno).

studiedBy(cse_403,purno).

studiedBy(cse_404,nishat).

studyYear(_2021,munia).

studyYear(_2021,maksuda).

studyYear(_2021,mouno).

studyYear(_2021,purno).

studyYear(_2022,nishat).

courseTeacher(X,Z):-

teachingYear(Z,Y),teaches(Y,X),

write(Y).

courseName(X,Z):-

teaches(X,Y), studiedBy(Y,Z),write(Y).

```
GNU Prolog 1.4.4 (32 bits)
File Edit Window Prolog Help
GNU Prolog 1.4.4 (32 bits)
Compiled May 15 2013, 12:35:56 with i686-w64-mingw32-gcc
By Daniel Diaz
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compiling C:\Users\asia\Documents\teacher_student.pl for byte code...
C:\Users\asia\Documents\teacher_student.pl compiled, 39 lines read - 2625 bytes written, 4 ms
| ?- courseTeacher(cou_401,_2021).
latif
```

```
| ?- courseName(latif,asia).
cou_401
true ?
```