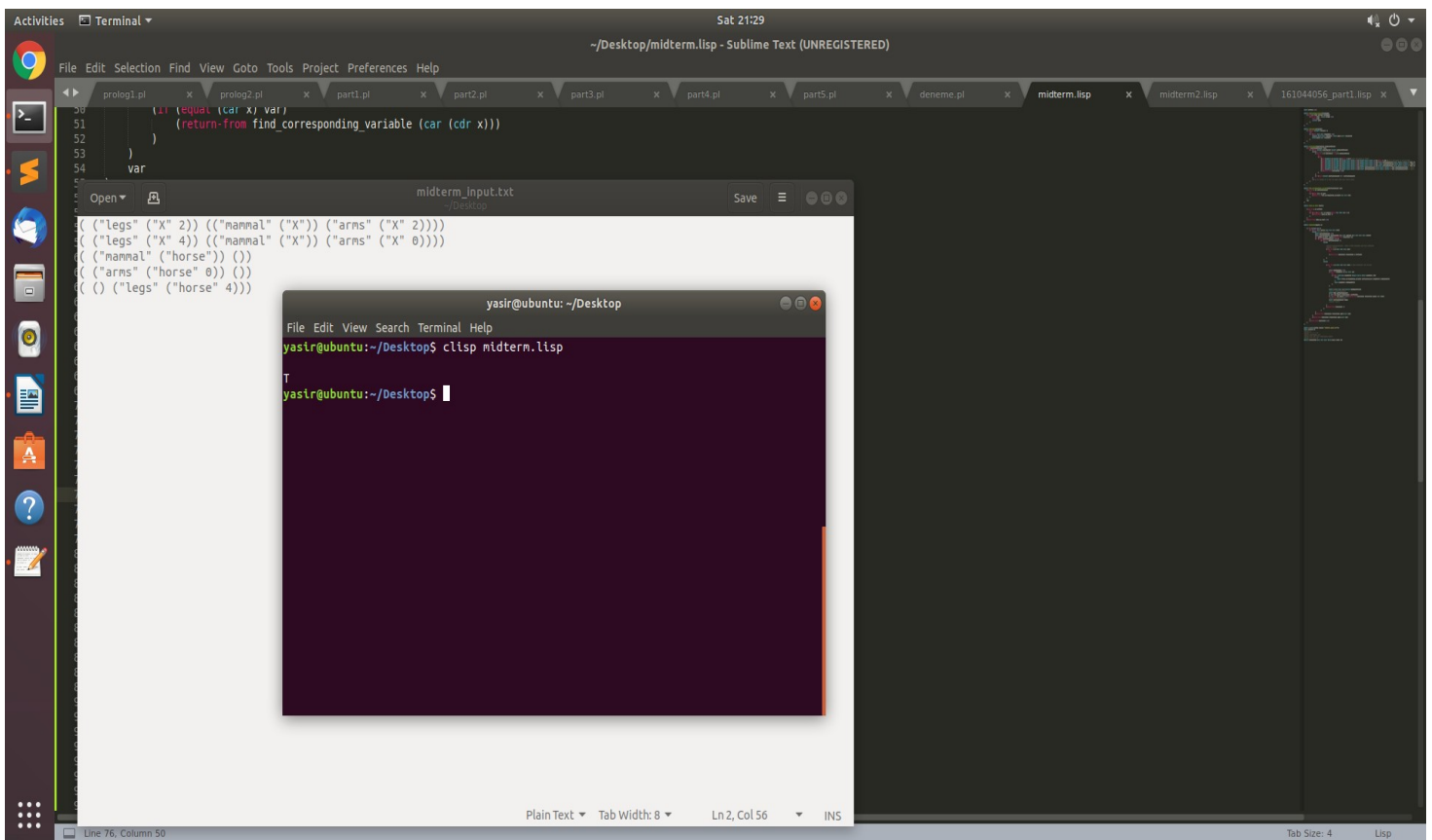


Firstly my program read file that has predicates like example given in homework. I used read-prolog-clauses function for this. Then by using find-query function my program find query and start solve its true or false for given clauses by using resolution and unification that we discussed in class.

I use my resolution function for finding corresponding predicate for given queries. Also my unification function used for unify given variable paramaters.

Firstly, my program works for only static paramaters, when query has 1 or more variable it won't work.

For example; I use same example as in homework.



The screenshot shows a Sublime Text editor window titled "midterm.lisp - Sublime Text (UNREGISTERED)" with the following code:

```
50 (defun (equal (car x) var)
51   (return-from find-corresponding-variable (car (cdr x))))
52 )
53 )
54 var
```

Below the editor, a terminal window titled "yasir@ubuntu: ~/Desktop" shows the execution of the program:

```
File Edit View Search Terminal Help
yasir@ubuntu:~/Desktop$ clisp midterm.lisp
T
yasir@ubuntu:~/Desktop$
```

The terminal output shows "T" (true) for the query, indicating that the program successfully found a corresponding predicate for the given query.

When I execute my program for given example it will return T(true) because ("legs" ("horse" 4)) is a true query.

The screenshot displays a Linux desktop environment with a dark theme. In the background, a Sublime Text editor window is open, showing a file named 'midterm.lisp' with the following Lisp code:

```

50 (defun (eqval (car x) var)
51   (return-from find_corresponding_variable (car (cdr x))))
52 )
53 )
54 var

```

Overlaid on the Sublime Text window is a terminal window titled 'yasir@ubuntu: ~/Desktop'. The terminal shows the command 'clisp midterm.lisp' being executed, which returns 'NIL'.

At the bottom of the screen, a file manager window is visible, showing a directory structure with files like 'prolog1.pl', 'prolog2.pl', 'part1.pl', 'part2.pl', 'part3.pl', 'part4.pl', 'part5.pl', 'deneme.pl', 'midterm.lisp', 'midterm2.lisp', and '101044056_part1.lisp'.

The screenshot displays a Linux desktop environment with the following components:

- Sublime Text Editor:** The main application window, titled "~ / Desktop / midterm.lisp - Sublime Text (UNREGISTERED)". It shows a file named `midterm.lisp` with the following Lisp code:


```

50 (defun (equal (car x) var)
51   (return-from find_corresponding_variable (car (cdr x)))
52 )
53 )
54 var

```
- Terminal Window:** A window titled "yasir@ubuntu: ~/Desktop" showing the command `clicsp midterm.lisp` being executed. The output is `NIL`.


```

yasir@ubuntu:~/Desktop$ clicsp midterm.lisp
NIL
yasir@ubuntu:~/Desktop$

```
- File Manager:** A window titled "midterm_input.txt" showing a directory structure with files like `prolog1.pl`, `prolog2.pl`, `part1.pl`, `part2.pl`, `part3.pl`, `part4.pl`, `part5.pl`, `deneme.pl`, `midterm.lisp`, `midterm2.lisp`, and `161044056_part1.lisp`.

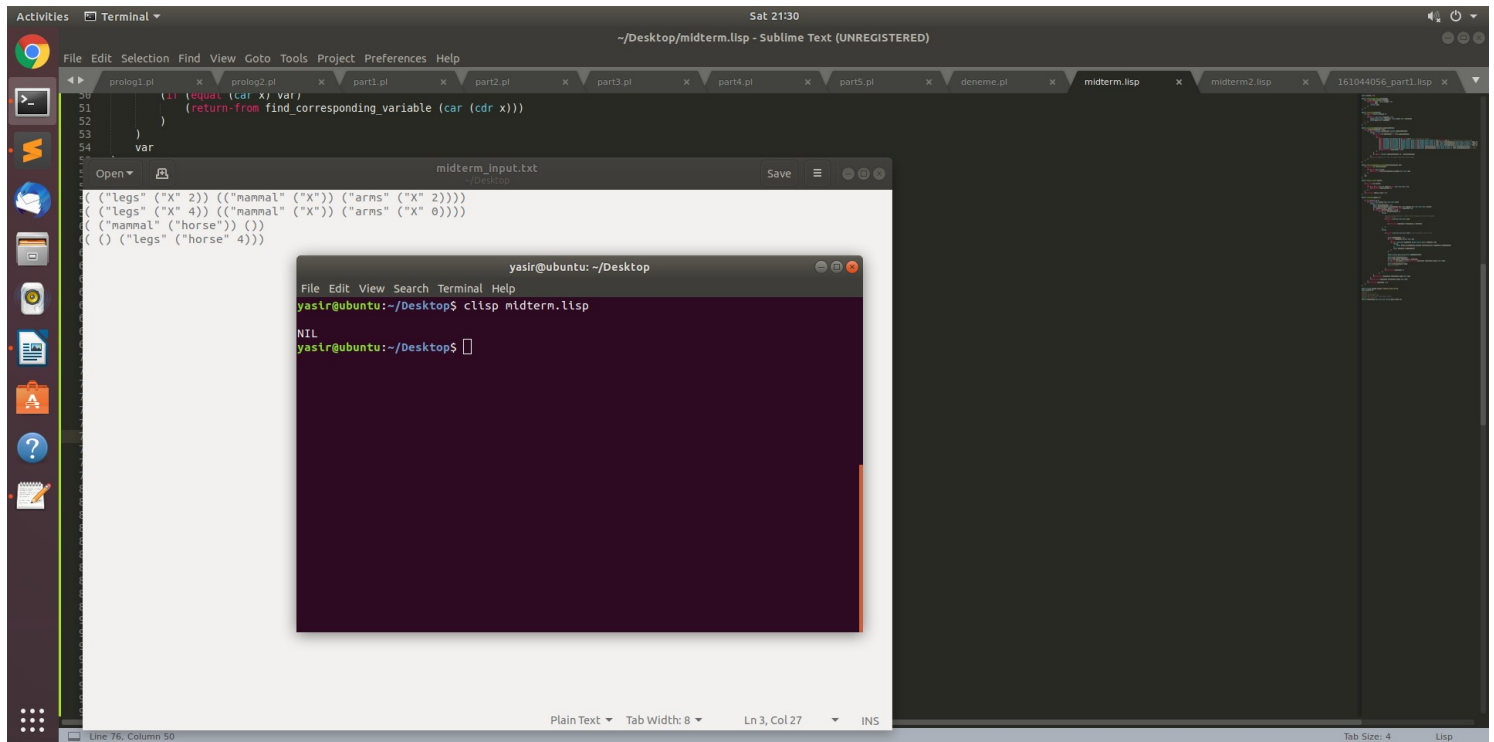

```

( ("legs" ("X" 2)) (("mammal" ("X")) ("arms" ("X" 2)))
( ("legs" ("X" 4)) (("mammal" ("X")) ("arms" ("X" 0)))
( ("arms" ("horse" 0)) ())
( ("legs" ("horse" 4)))

```

The desktop environment includes a sidebar with application icons for the Dash, Home, Files, and various utilities. The bottom status bar shows the current line and column as "Line 76, Column 50".

This also return false because there is no (“mammal” (“horse”)) in database so program determine false for (“legs” (“horse” 4)) query.



The screenshot shows a Sublime Text editor window titled "midterm.lisp" with the following Prolog code:

```
(defrule r1
  (and (mammal "X") (arms "X" 2))
  =>
  (return-from find_corresponding_variable (car (cdr x))))

var

midterm_input.txt
Save

{ ("legs" ("X" 2)) ("mammal" ("X")) ("arms" ("X" 2)))
{ ("legs" ("X" 4)) ("mammal" ("X")) ("arms" ("X" 0)))
{ ("mammal" ("horse")) ()
{ () ("legs" ("horse" 4))
```

A terminal window titled "yasir@ubuntu: ~/Desktop" shows the execution of the code:

```
File Edit View Search Terminal Help
yasir@ubuntu:~/Desktop$ clisp midterm.lisp
NIL
yasir@ubuntu:~/Desktop$
```

Again this also return false because there is no (“arms” (“horse” 0)) fact. So program determine false for (“legs” (“horse” 4)) query.

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