

Instalare Ocaml + Emacs pe Windows

Scop: am scris acest tutorial pentru ca si eu am avut dificultati in instalarea editorului Emacs, al compilatorului Ocaml si in folosirea acestora pe Windows. Poate unii pasi par triviali dar am vrut sa ma asigur ca acopera tot.

Structura:

- [Instalare](#)
- [Folosire](#)
- [Salvare](#)
- [Probleme de logica](#)
- [Solutii probleme](#)

Note:

- Puteti incerca sa copiat folder-ul cygwin pe calculatorul colegilor ca sa nu trebuiasca instalat de mai multe ori. S-ar putea sa nu mearga, depinde de mai multi factori. Daca o faceti, arhivati-l mai intai.
- Folosesc varianta pe 32 de biti deoarece instalarea pe 64 de biti are nevoie de biblioteci externe pentru variant grafica a editorului Emacs; e o solutie mai simpla folosirea acestei variante, care este suficienta pentru cursul nostru
- Nu spun nimic despre multe optiuni la instalarea Cygwin-ului deoarece variantele default sunt bune pentru ce avem noi nevoie
- De ce text? Pentru ca text-ul e mai usor de parcurs in ritmul fiecaruia decat un video
- De ce nu am postat o copie a instalarii mele de cygwin? E destul de mare, chiar si arhivata si nu e garantat ca va merge pe toate calculatoarele pe care e copiată, in special pe cele cu literele partitilor schimbata fata de cele obisnuite

Instalarea

1. Intrati la adresa: <https://cygwin.com/install.html> si descarcati setup-ul:

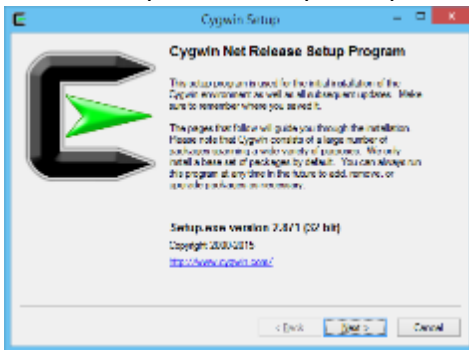
Installing and Updating Cygwin for 32-bit versions of Windows

Run **setup-x86.exe** any time you want to update or install a Cygwin package for 32-bit windows.

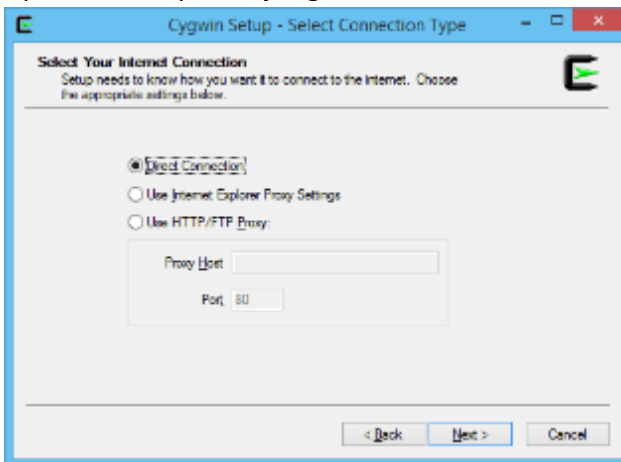
2. Dupa ce se descarca rulati-l



Daca mai apar chestii apasati pe Ok sau Yes pana apare setup-ul

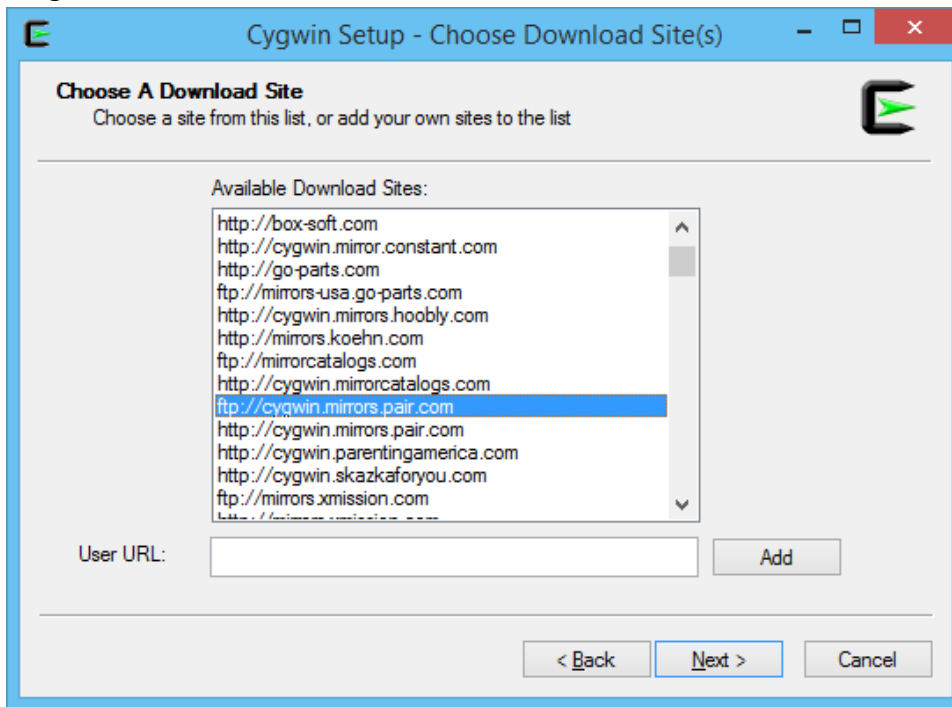


3. Apasati **Next** pana ajungeti la fereastra asta:



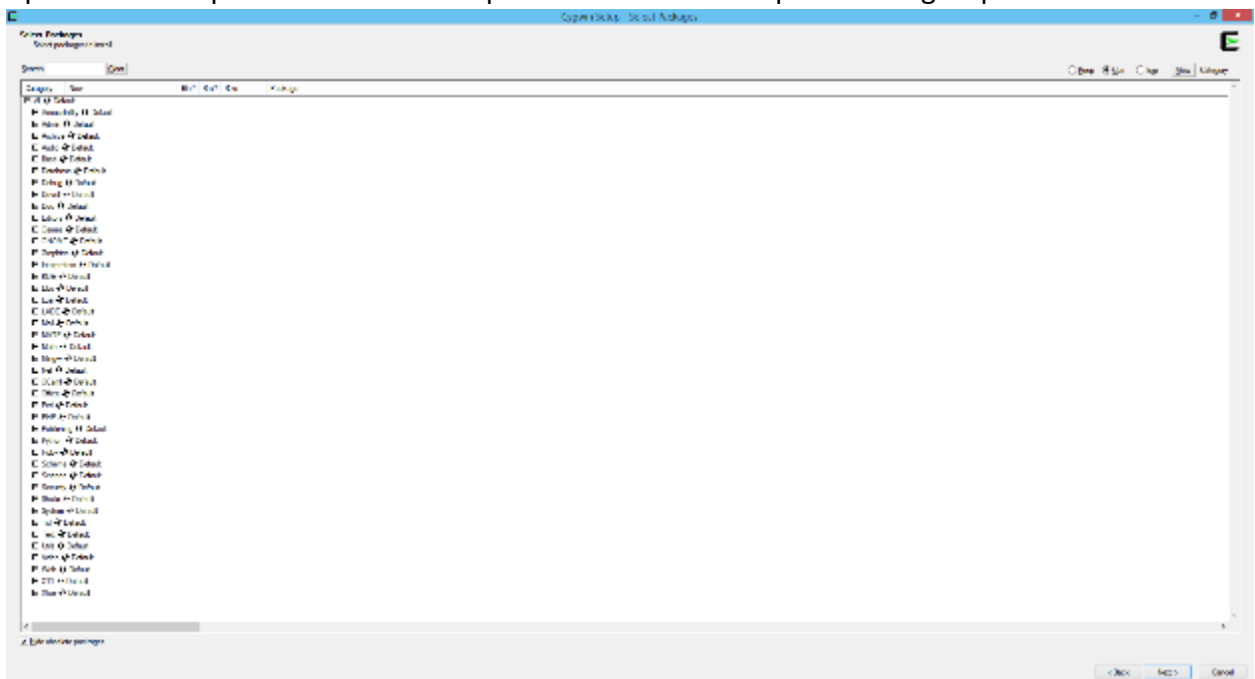
Apasati din nou **Next** si va apareea lista cu oglinzi de pachete

- Alegeti una dintre cele care se termina cu **.com**

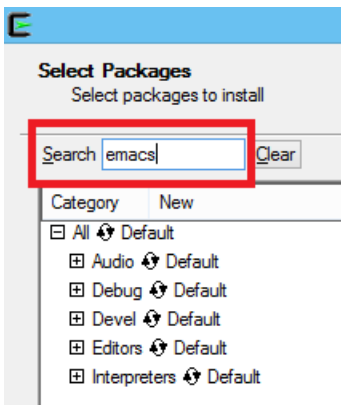


Apasati **Next**

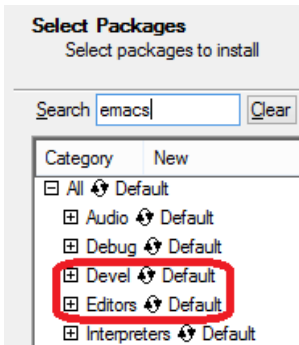
- O sa isi descarce setup-ul, o sa dureze putin...
- Apoi o sa apara o lista de pachete de unde puteti alege pachetele necesare



7. Cautati **emacs**



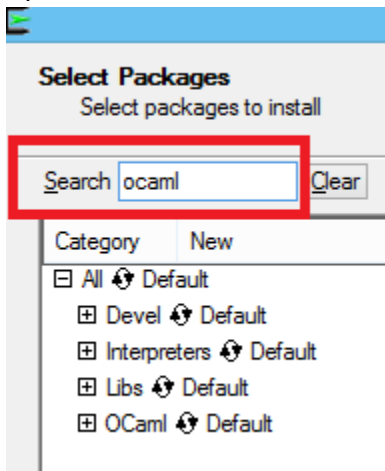
8. Click pe **Devel** si apoi pe **Editors**



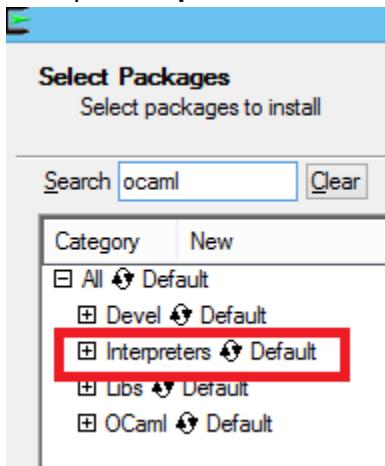
9. Apasati pe click in dreptul pachetelor **emacs-ocaml**, **emacs** (trebuie sa dati click de doua ori, ca sa scrie 24.5-2 in stanga) si **emacs-w32**, ar trebui sa arate asa dupa:

Category	Package Name	Version	Architecture	Size	Description
Devel	Skip		n/a	47k	emacs-gettext: Emacs PO
	4.00.1-1			65k	emacs-ocaml: Emacs mod
Editors	24.5-2			21,642k	emacs: The extensible, cu
	Skip		n/a	27k	emacs-anthy: Japanese in
	Skip		n/a	906k	emacs-auctex: TeX macro
	Skip		n/a	6k	emacs-cmake: Cross-platf
	Skip		n/a	14,890k	emacs-el: LISP source coc
	24.5-2			2,414k	emacs-w32: Emacs binarie
	Skip		n/a	2,426k	emacs-X11: Emacs binarie
	Skip		n/a	5,702k	xemacs: A powerful, highl
	Skip		n/a	5k	xemacs-emacs-common: A
	Skip		n/a	4,884k	xemacs-mule-sumo: XEmac
	Skip		n/a	27,871k	xemacs-sumo: XEmacs sta
	Skip		n/a	56k	xemacs-tags: A powerful, f

10. Apoi scrieti la search **ocaml**



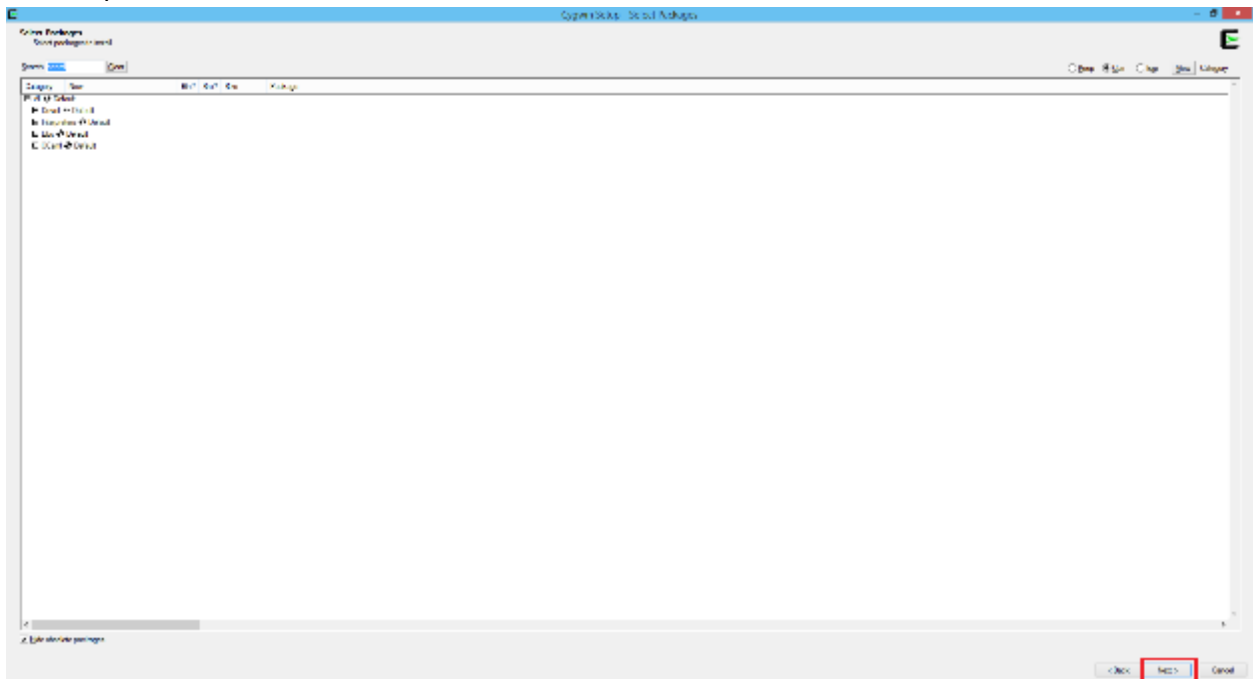
11. Click pe **Interpreters**



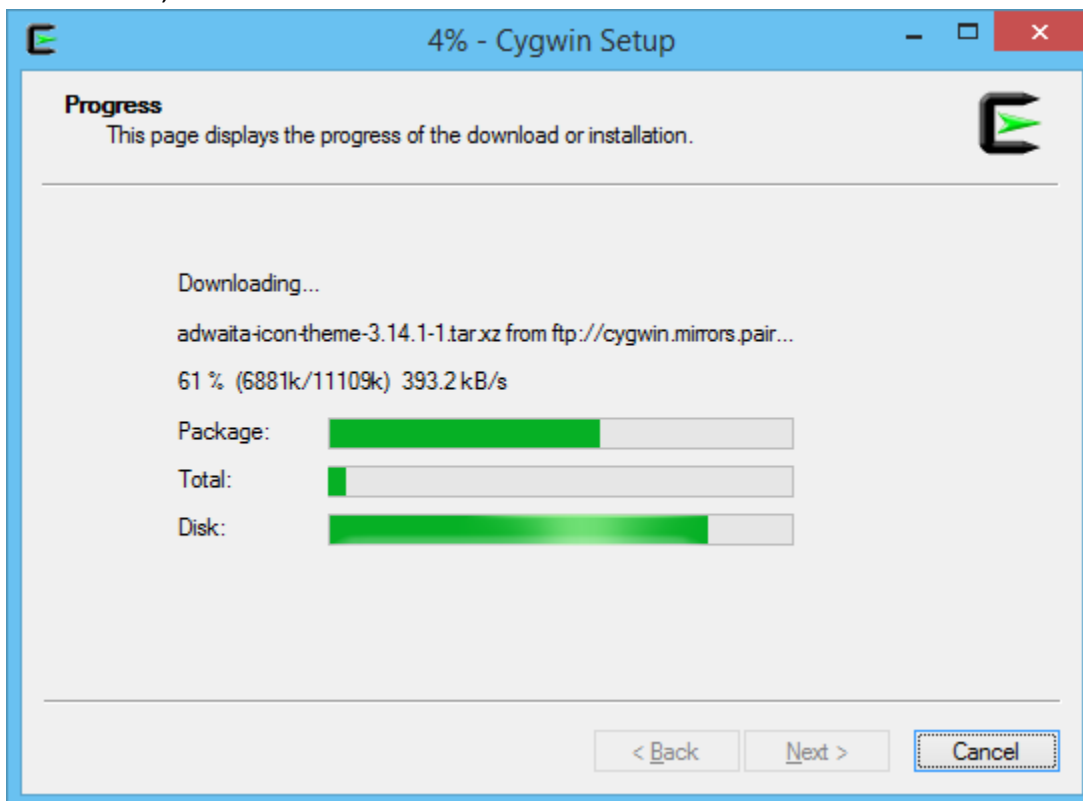
12. Selectati **ocaml** si **ocaml-compiler-libs**, emacs-ocaml va fi bifat, lasati-l asa

Package Name	Version	Architecture	Size	Description
Interpreters	Default			
4.00.1-1		☒	☐	65k emacs-ocaml: Emacs r
4.01.0-2		☒	☐	1k ocaml: The OCaml con
Skip		n/a	n/a	5,441k ocaml-base: The OCar
Skip		n/a	n/a	14,702k ocaml-camlp4: The OC
4.01.0-1		☒	☐	1,286k ocaml-compiler-libs: Th

13. Acum apasati **Next**



14. Apasati din nou **Next** de 2 ori, va incepe sa downloadeze si sa instaleze pachetele necesare; o sa dureze ceva, e normal



Ca sa nu va plictisiti pana se downloadeaza uitati o pagini cu probleme de logica, rezolvarile sunt la sfarsitul documentului; nr 2 e putin sadica

Problema 1:

Conduci masina intr-o noapte furtunoasa cand treci pe langa o statie de autobuz si vezi trei persoane asteptand autobuzul

- femeie in varsta care pare pe punctul de a-si da duhul.
- Un vechi prieten care ti-a salvat la un moment dat viata.
- Sufletul pereche la care ai visat toata viata.
-

Tinand cont ca nu poti lua decat un singur pasager la tine in masina, pe cine alegi?

Problema 2:

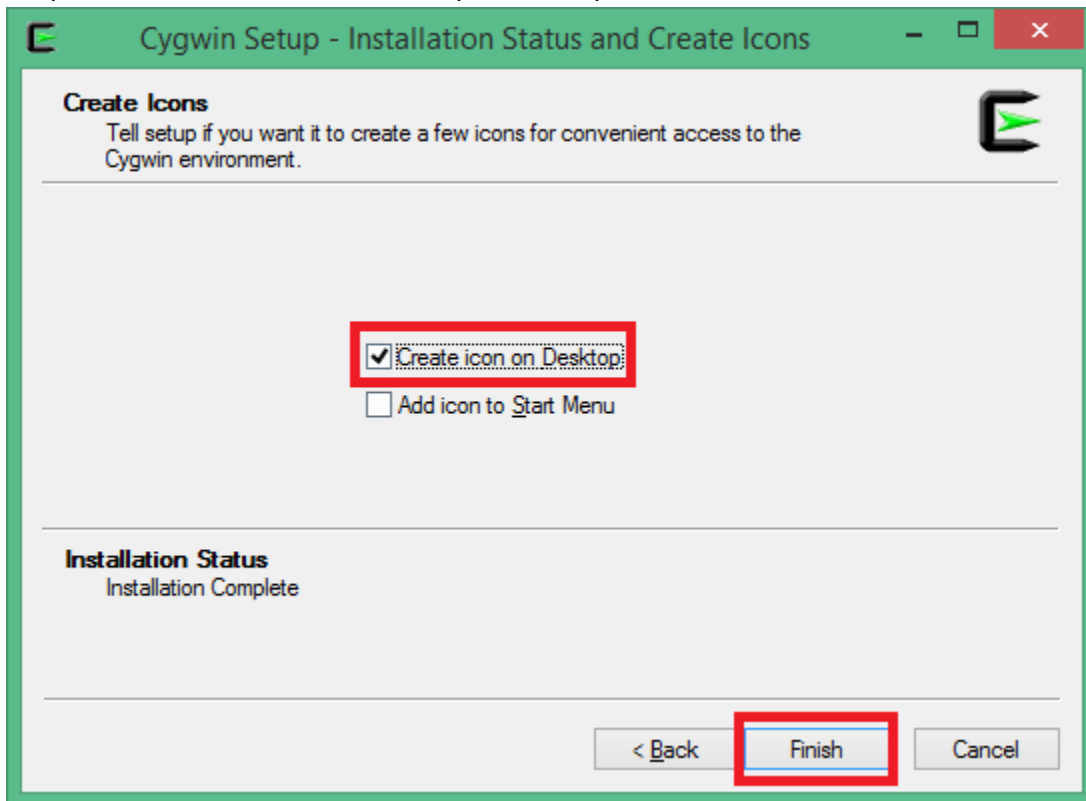
Neastamparatul Nelu a fost avertizat de mama sa sa nu deschida niciodata usa de la beci ca sa nu vada ceea ce nu e menit sa vada. Intr-o zi, cand mama sa era plecata de acasa, Nelu a deschis usa. Ce a vazut?

Problema 3:

Un răufăcător nebun te obligă să joci cu el ruleta rusească. În cilindrul revolverului sunt trei gloanțe, în camere consecutive. Revolverul are șase camere pentru gloanțe. La începutul jocului, cilindrul revolverului este învârtit o singură dată. Apoi, arma va fi pasată între voi (tu și răufăcător) până când va elibera un glonț. Răufăcătorul te lasă să alegi dacă vrei să fii primul sau al doilea care trage. Ce ai alege, pentru a avea mai multe șanse să rămâi în viață? Explică răspunsul.

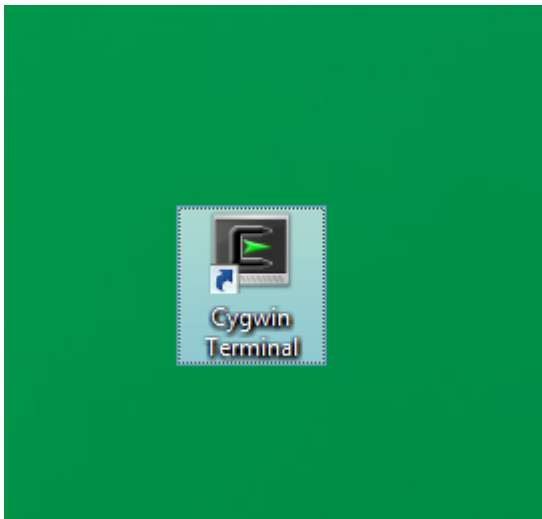
(aceasta problema a facut parte dintr-un interviu la Google)

15. Dupa ce s-a downloadat totul va apareea setup-ul va arata asa:

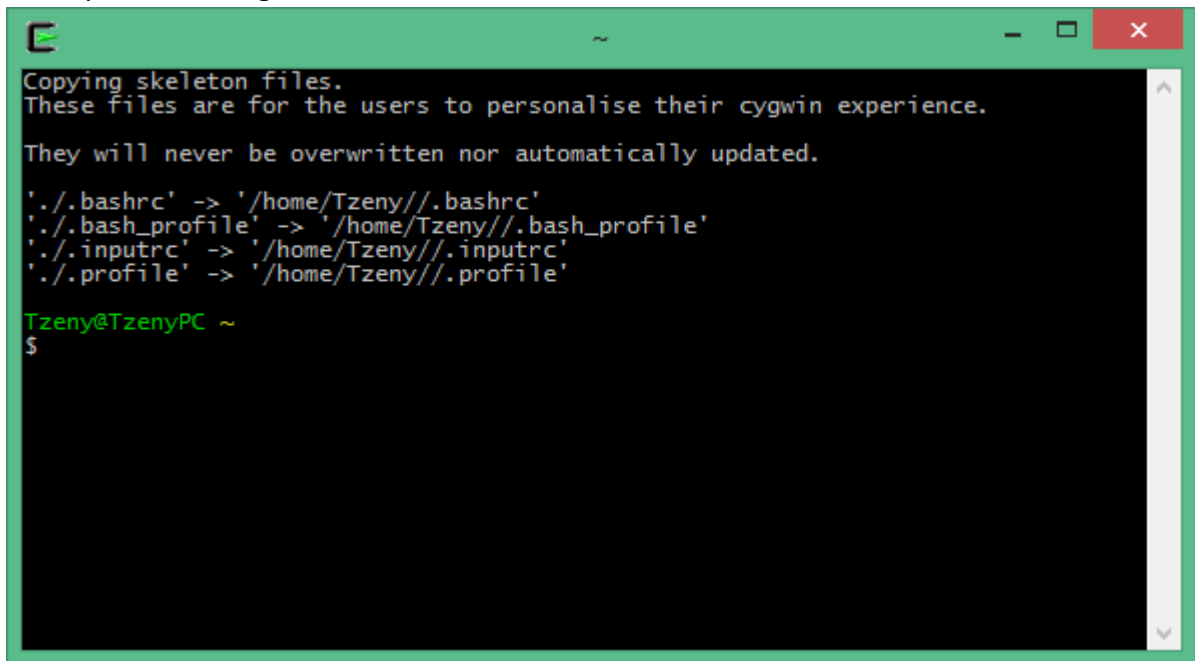


Selectati **Create icon on Desktop** apoi click pe **Finish**

16. Cauati scurtatura care a aparut pe Desktop si dati dublu click pe ea



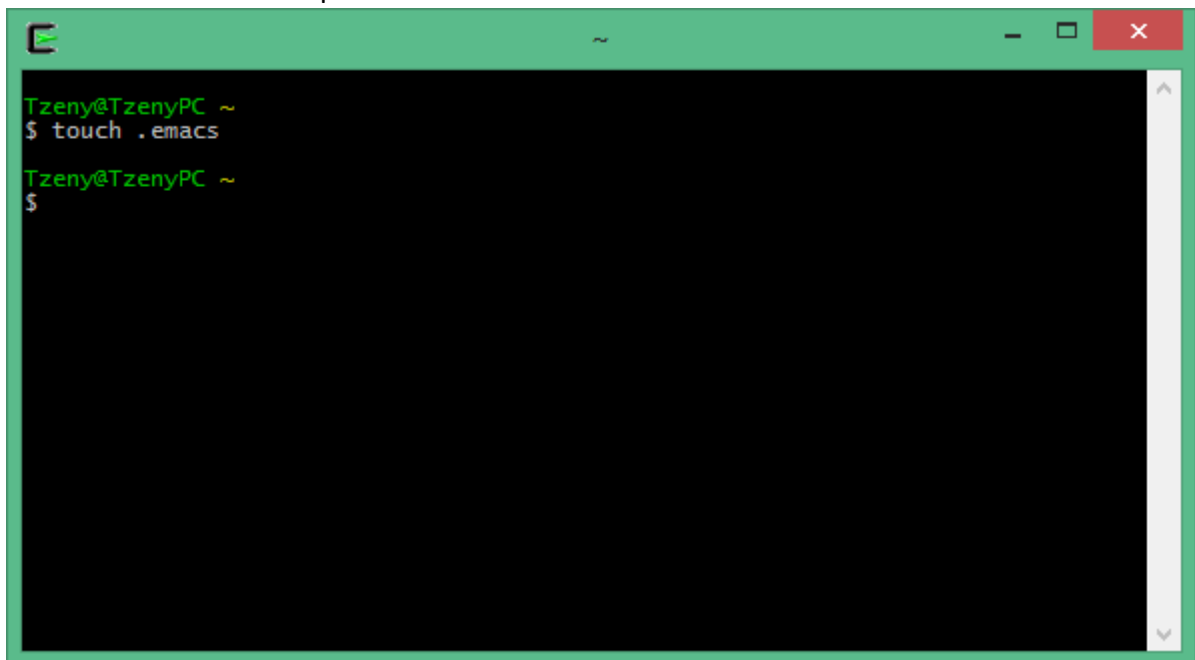
17. O sa apara ceva de genul



```
Copying skeleton files.  
These files are for the users to personalise their cygwin experience.  
  
They will never be overwritten nor automatically updated.  
  
'./bashrc' -> '/home/Tzeny//.bashrc'  
'./bash_profile' -> '/home/Tzeny//.bash_profile'  
'./inputrc' -> '/home/Tzeny//.inputrc'  
'./profile' -> '/home/Tzeny//.profile'  
  
Tzeny@TzenyPC ~  
$
```

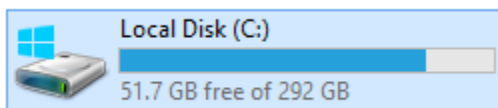
Tot ce e scris cu verde la voi va fi diferit, e ok

18. Scrieti **touch .emacs** si apasati **Enter**




```
Tzeny@TzenyPC ~  
$ touch .emacs  
  
Tzeny@TzenyPC ~  
$
```













19. Acum intrati in **My Computer / This PC**, in partitia **C:**




20. Acum intrati in folder-ul **cygwin**

 cygwin	10/2/2015 2:22 AM	File folder
--	-------------------	-------------






21. Acum in folder-ul **home**

 bin	10/2/2015 2:22 AM	File folder	
 dev	10/2/2015 2:22 AM	File folder	
 etc	10/2/2015 2:22 AM	File folder	
 home	10/2/2015 2:22 AM	File folder	
 lib	10/2/2015 2:22 AM	File folder	
 sbin	10/2/2015 2:22 AM	File folder	
 tmp	10/2/2015 2:22 AM	File folder	
 usr	10/2/2015 2:21 AM	File folder	
 var	10/2/2015 2:22 AM	File folder	
 Cygwin.bat	10/2/2015 2:22 AM	Windows Batch File	1 KB
 Cygwin.ico	10/2/2015 2:22 AM	Icon	154 KB
 Cygwin-Terminal.ico	10/2/2015 2:22 AM	Icon	53 KB

22. Aici va mai fi un folder cu numele vostru de utilizator(in cazul meu Tzeny, al vostru va fi **diferit**), intrati in el

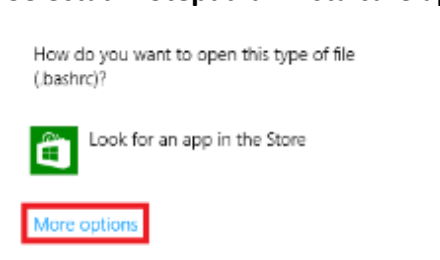
Name	Date modified	Type	Size
 Tzeny	10/2/2015 2:25 AM	File folder	

23. Va avea mai multe fisiere, click dreapta pe **.bashrc** si selectati **Open with...**

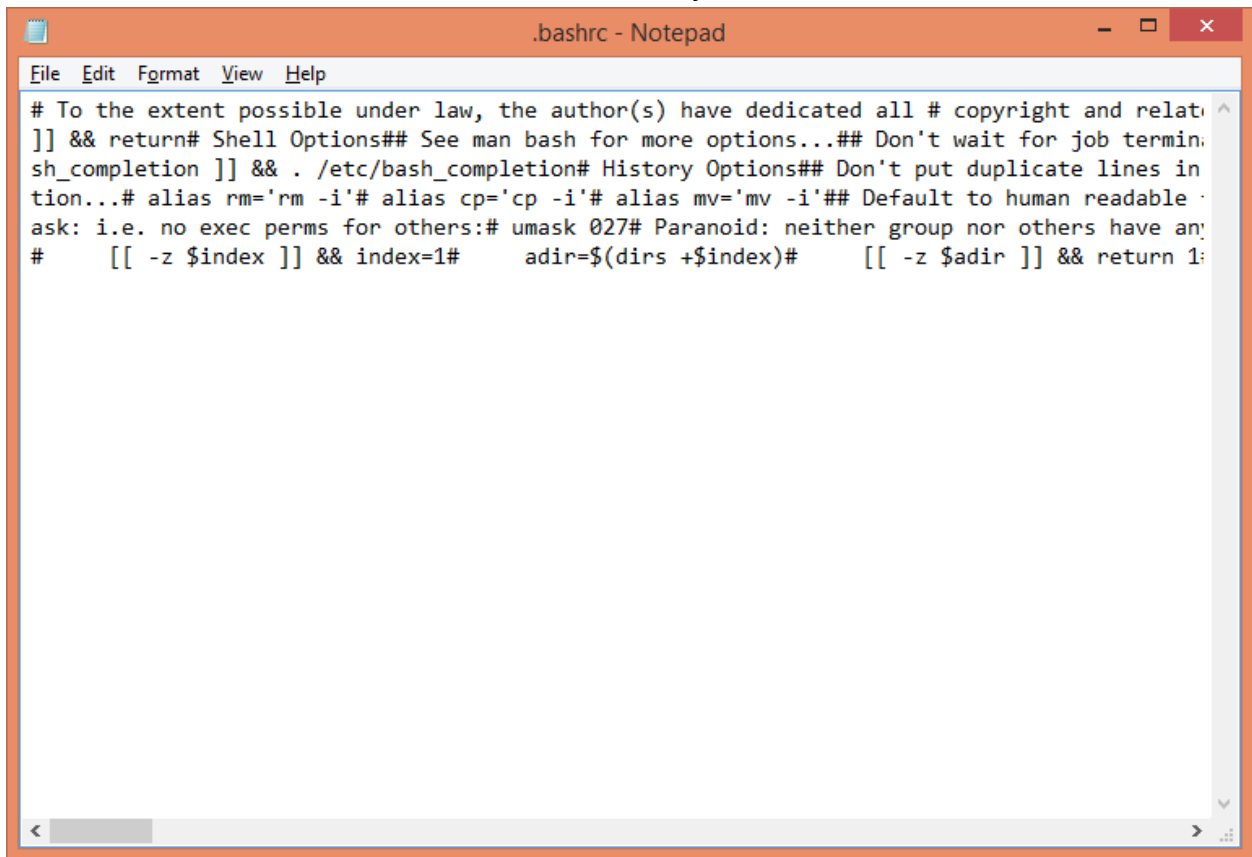
 .emacs.d	10/2/2015 2:23 AM	File folder	
 .bash_history	10/2/2015 2:24 AM	BASH_HISTORY File	1 KB
 .bash_profile	10/2/2015 2:22 AM	BASH_PROFILE File	2 KB
 .bashrc	10/2/2015 2:22 AM	BASHRC File	6 KB
 .emacs		EMACS File	0 KB

Open with

24. Selectati **Notepad** din lista care apare. La **Windows 8** trebuie sa dati click pe **More options**



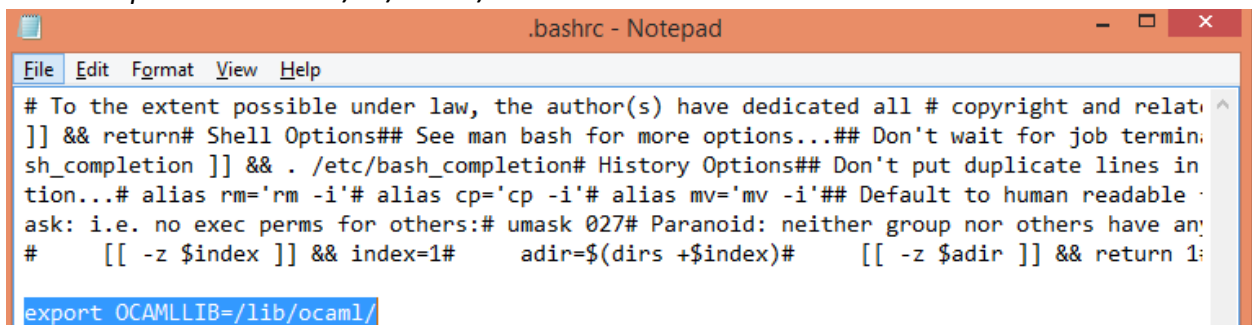
25. O sa fie cateva linii de text care seamana cu ce e mai jos



```
.bashrc - Notepad
File Edit Format View Help
# To the extent possible under law, the author(s) have dedicated all # copyright and relat
]] && return# Shell Options## See man bash for more options...## Don't wait for job termin
sh_completion ]] && . /etc/bash_completion# History Options## Don't put duplicate lines in
tion...# alias rm='rm -i'# alias cp='cp -i'# alias mv='mv -i'## Default to human readable
ask: i.e. no exec perms for others:# umask 027# Paranoid: neither group nor others have an
# [[ -z $index ]] && index=1# adir=${dirs +$index)# [[ -z $adir ]] && return 1:
```

26. Adaugati sub ele codul acesta:

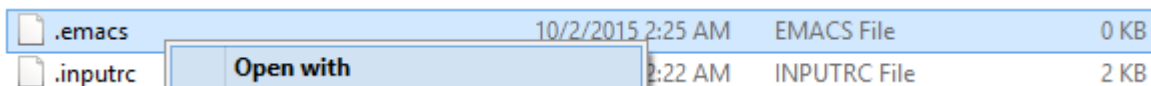
export OCAMLLIB=/lib/ocaml/



```
.bashrc - Notepad
File Edit Format View Help
# To the extent possible under law, the author(s) have dedicated all # copyright and relat
]] && return# Shell Options## See man bash for more options...## Don't wait for job termin
sh_completion ]] && . /etc/bash_completion# History Options## Don't put duplicate lines in
tion...# alias rm='rm -i'# alias cp='cp -i'# alias mv='mv -i'## Default to human readable
ask: i.e. no exec perms for others:# umask 027# Paranoid: neither group nor others have an
# [[ -z $index ]] && index=1# adir=${dirs +$index)# [[ -z $adir ]] && return 1:
export OCAMLLIB=/lib/ocaml/
```

27. Apoi salvati si iesiti.

28. Apoi click dreapta pe **.emacs** si **Open with...**



.emacs	10/2/2015 2:25 AM	EMACS File	0 KB
.inputrc	2:22 AM	INPUTRC File	2 KB

29. Deschideti-l cu Notepad cum ati facut si cu primul fisier

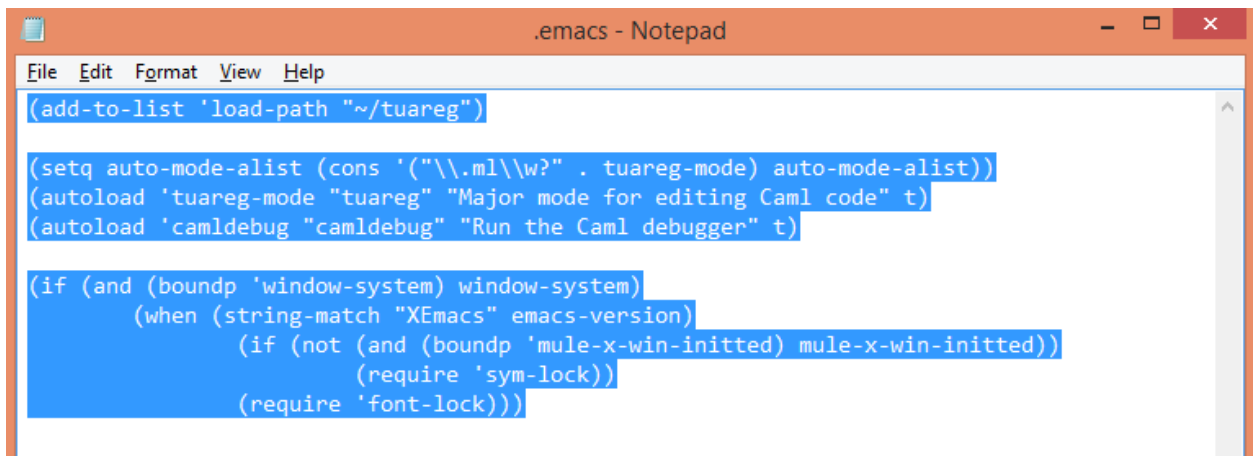
30. Copiati in el urmatoorul text:

```
(add-to-list 'load-path "~/tuareg")
```

```
(setq auto-mode-alist (cons ('("\\.ml\\w?" . tuareg-mode) auto-mode-alist))
```

```
(autoload 'tuareg-mode "tuareg" "Major mode for editing Caml code" t)
```

```
(autoload 'camldebug "camldebug" "Run the Caml debugger" t)
```



The screenshot shows a window titled ".emacs - Notepad" with a menu bar (File, Edit, Format, View, Help). The text area contains the following Emacs Lisp code, which is highlighted in blue:

```
(add-to-list 'load-path "~/tuareg")

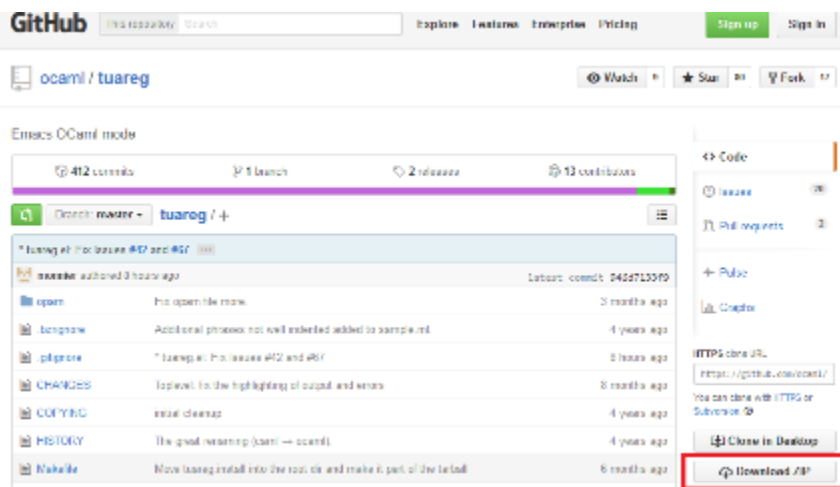
(setq auto-mode-alist (cons ('("\\.ml\\w?" . tuareg-mode) auto-mode-alist))
      (autoload 'tuareg-mode "tuareg" "Major mode for editing Caml code" t)
      (autoload 'camldebug "camldebug" "Run the Caml debugger" t))

(if (and (boundp 'window-system) window-system)
    (when (string-match "XEmacs" emacs-version)
        (if (not (and (boundp 'mule-x-win-initted) mule-x-win-initted))
            (require 'sym-lock))
        (require 'font-lock))))
```

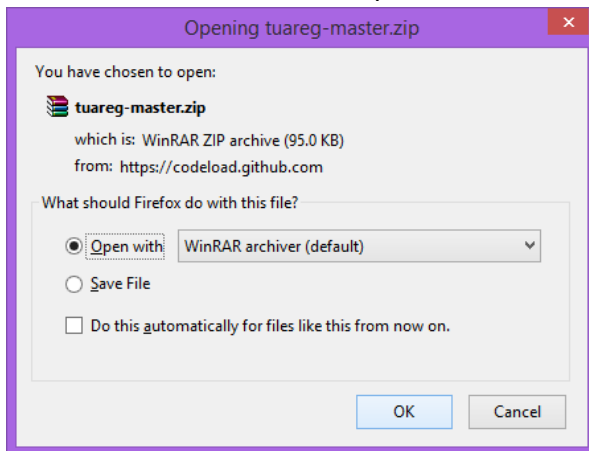
31. Salvati si iesiti.

32. Intrati la aceasta adresa: <https://github.com/ocaml/tuareg>

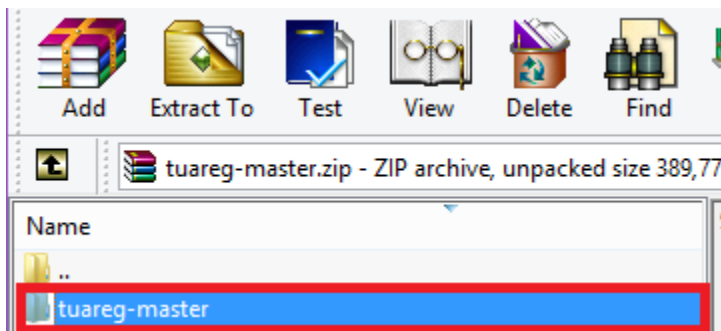
33. Dati click pe **Download ZIP**, si descarcati arhiva



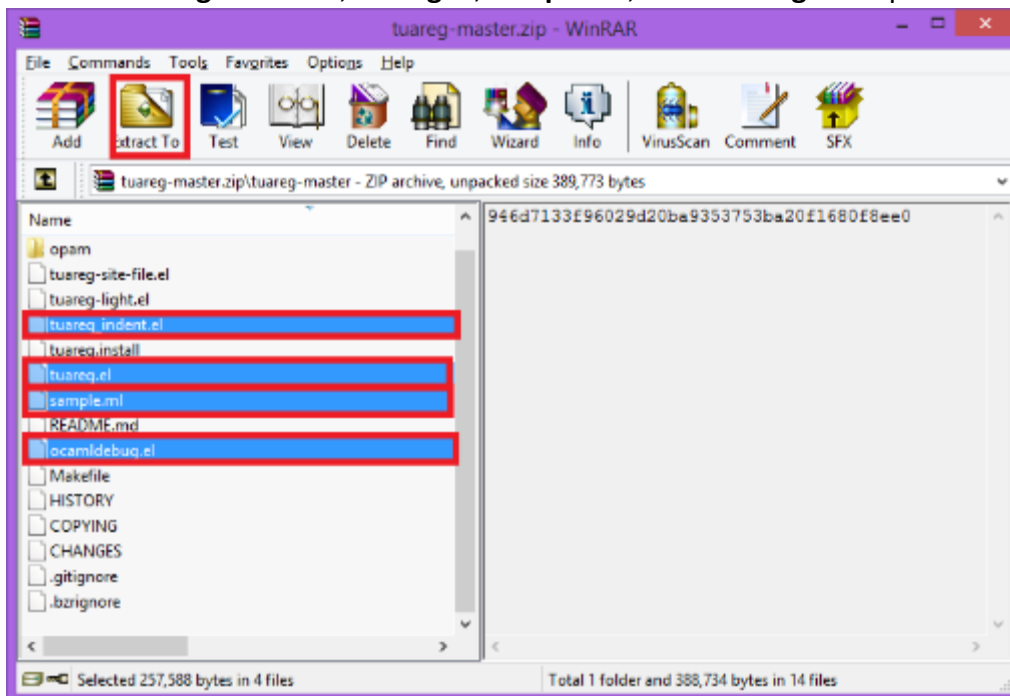
34. Deschideti-o cu WinRAR, 7-Zip sau alt soft similar



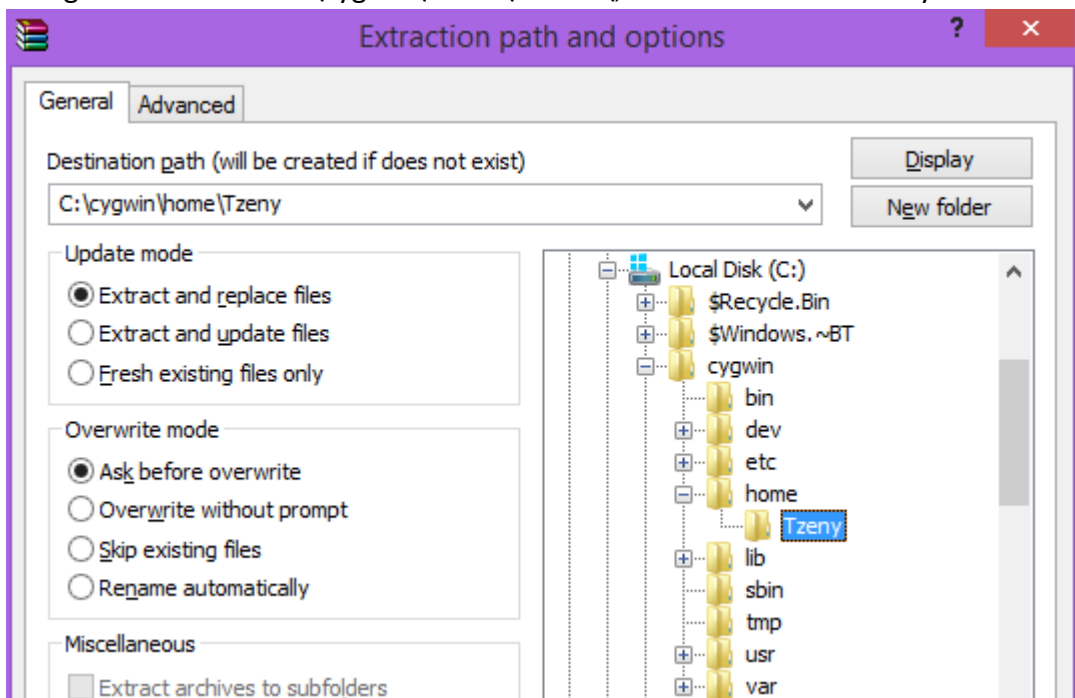
35. Intrati in directorul **tuareg-master**



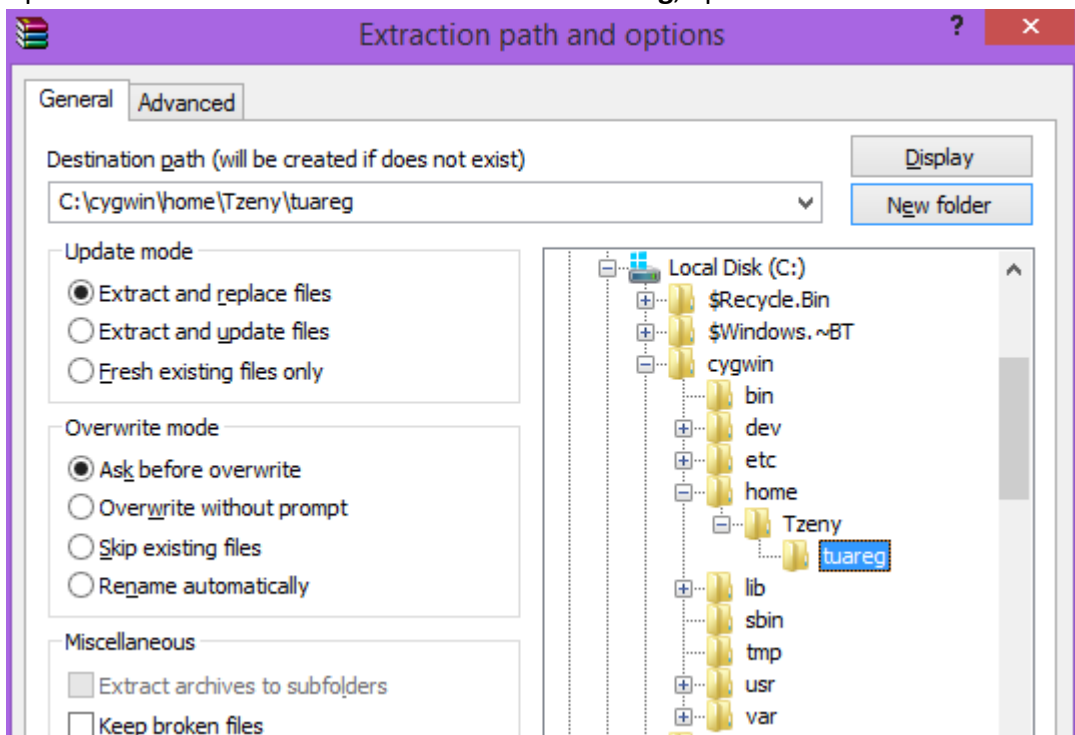
36. Selectati **tuareg-indent.el**, **tuareg.el**, **sample.ml**, **ocamldebug.el** si apasati **Extract to**



37. Navigati in directorul C:\cygwin\home\



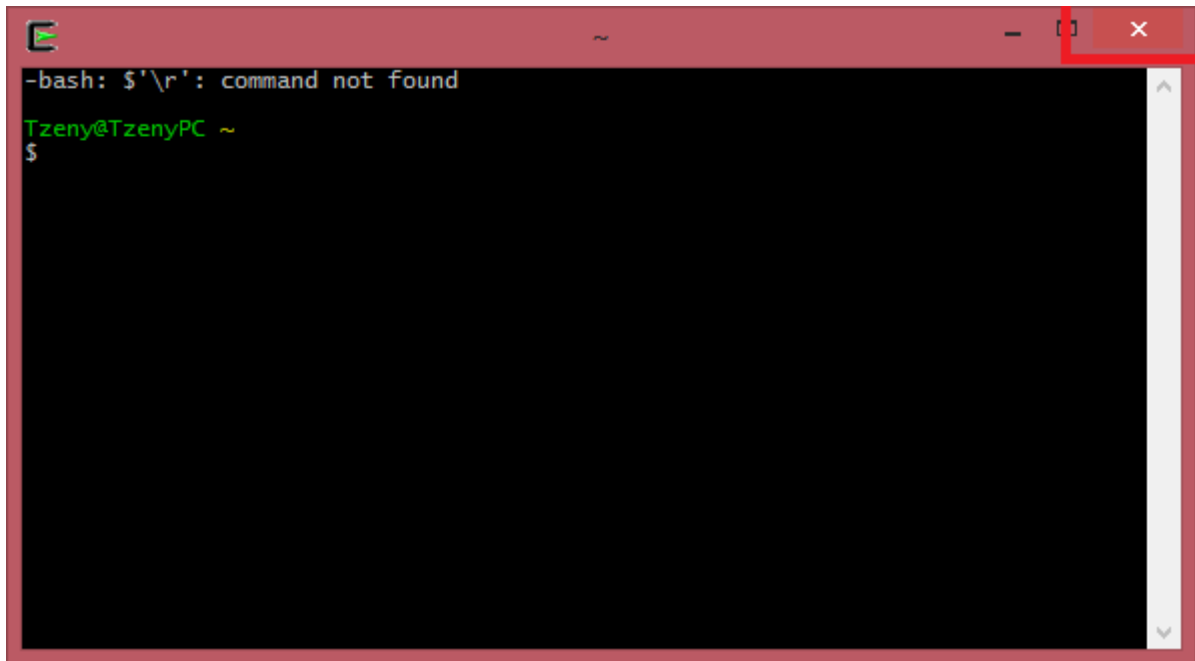
38. Apasati **New Folder** si faceti un folder numit **tuareg**, apoi selectati-l



39. Apasati OK.

40. Inchideti WinRar-ul.

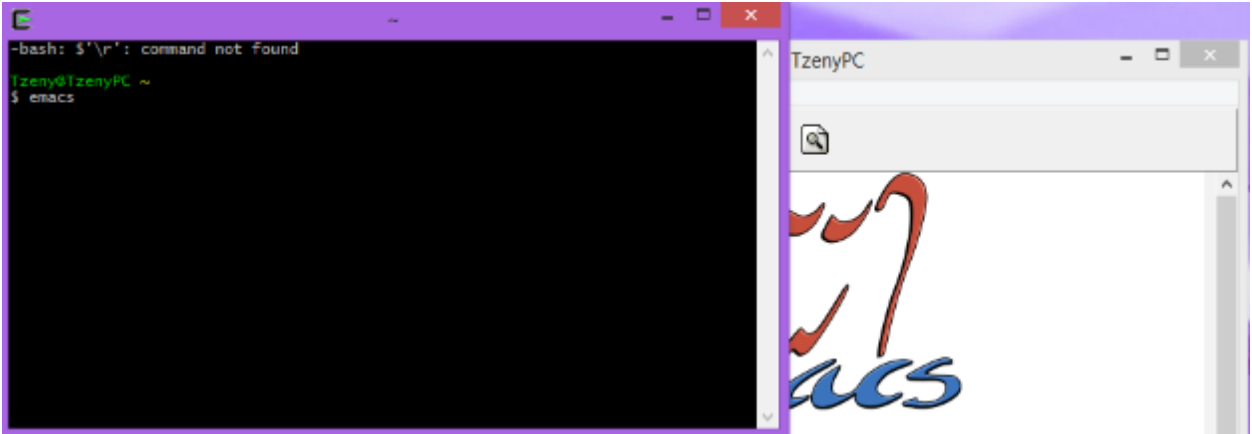
41. Daca aveti Cygwin deschis inchideti-l, Ocaml nu va porni pana nu faceti asta.

A screenshot of a terminal window with a dark background and a red title bar. The window title is '~'. The terminal shows the following text: '-bash: \$'\r': command not found' on the first line, 'Tzeny@TzenyPC ~' on the second line, and '\$' on the third line. A red box highlights the close button in the title bar.

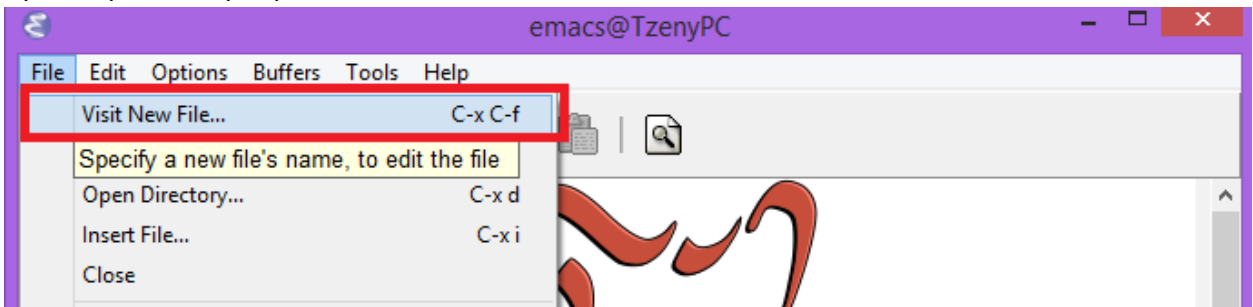
```
-bash: $'\r': command not found
Tzeny@TzenyPC ~
$
```

Folosirea

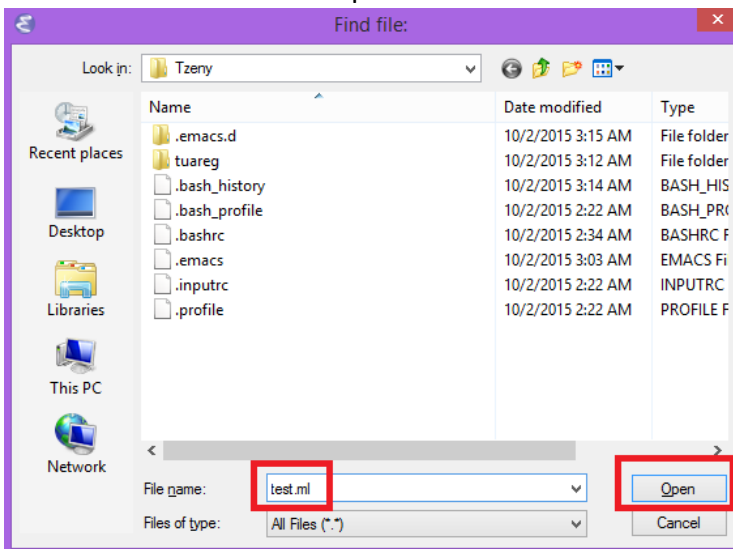
1. Deschideti cygwin, scrieti **emacs** si apasati **Enter**. Se va deschide editorul Emacs.



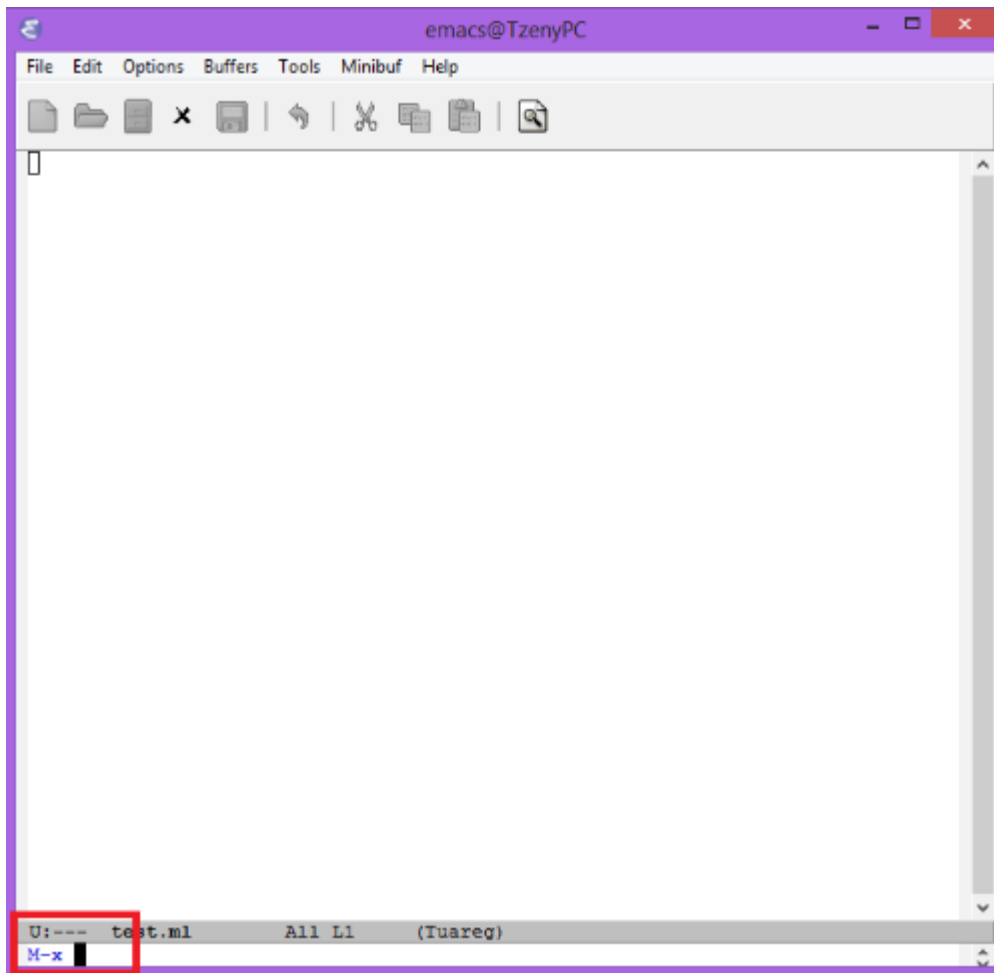
2. Apasati pe **File**, apoi pe **Visit a new file**



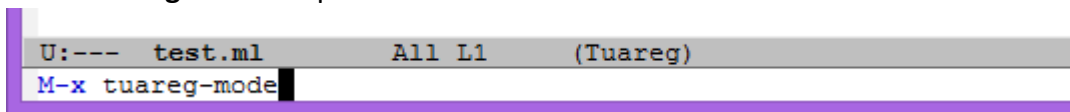
3. La nume scrieti **test.ml** si apasati **Ok**.



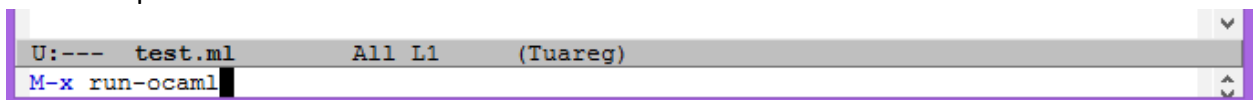
- Acum apasati impreuna tastele **esc** si **x** ; in parte de jos a editorului ar trebui sa apara scris cu albastru **M-x**



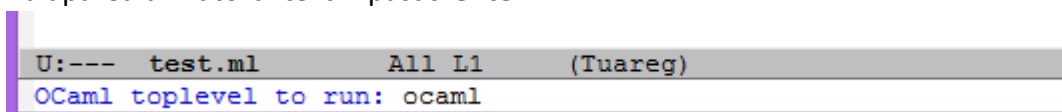
- Scriti **tuareg-mode** si apasati **Enter**



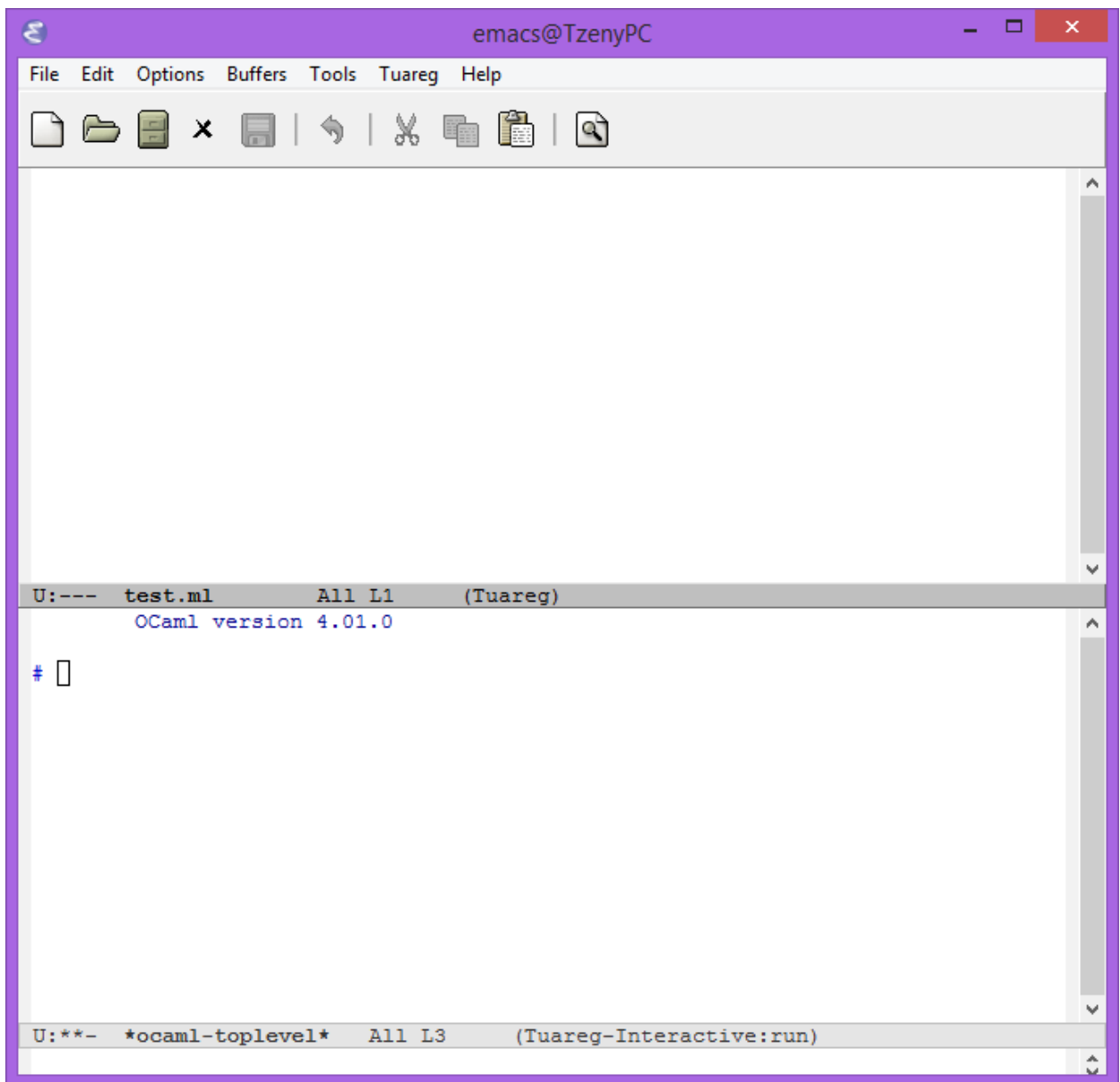
- Textul va disparea. Apasati din nou impreuna tastele **esc** si **x**, va aparea același **M-x**. Scriti **run-ocaml** si apasati **enter**.



- Va aparea urmatorul text. Apasati **enter**.



8. Acum editorul emacs va arata asa:

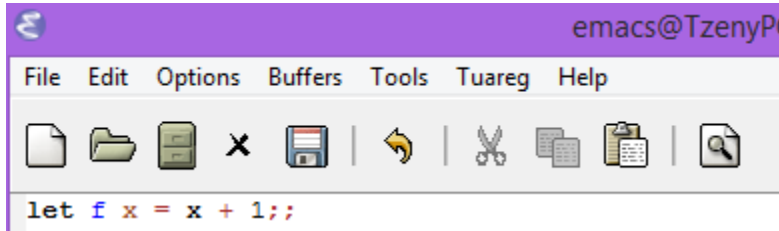


Partea de sus este fisierul, partea de jos interpretorul ocaml.

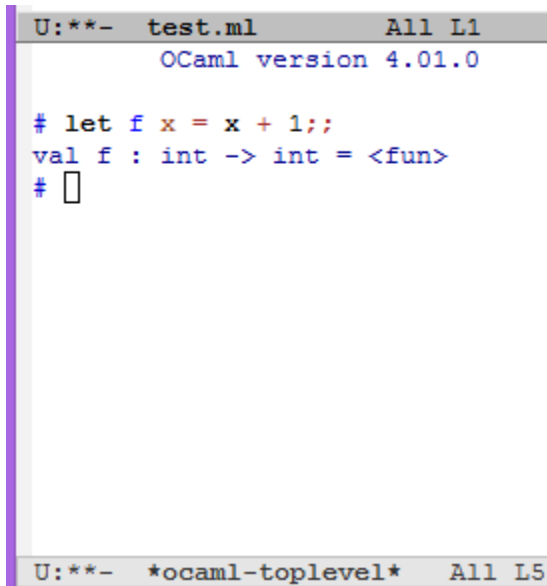
Exemplu

1. Dati click in partea de sus si scrieti functia exemplu:

```
let f x = x + 1;;
```

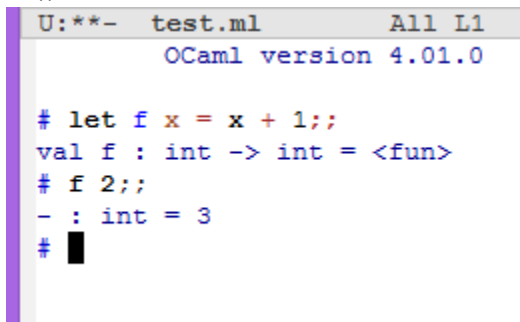


2. Apasati impreuna tastele **ctrl** si **c** apoi **ctrl** si **b**. In parte de jos a editorului ar trebui sa apara urmatorul text.



3. Ca sa incercati functia scrieti:

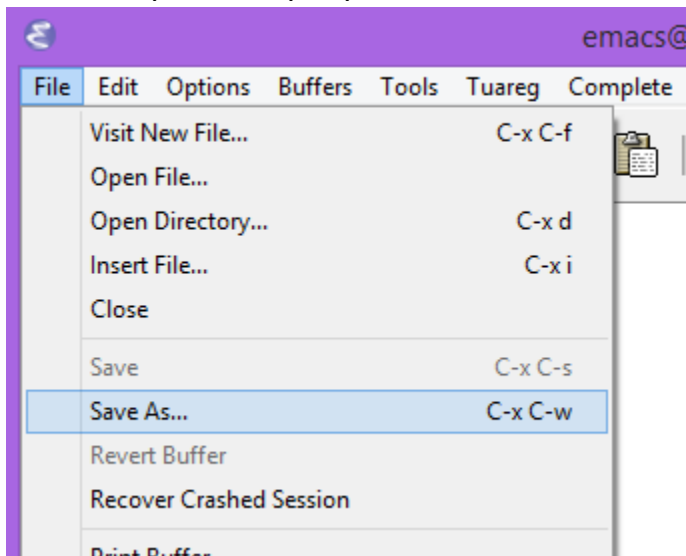
```
f 2;;
```



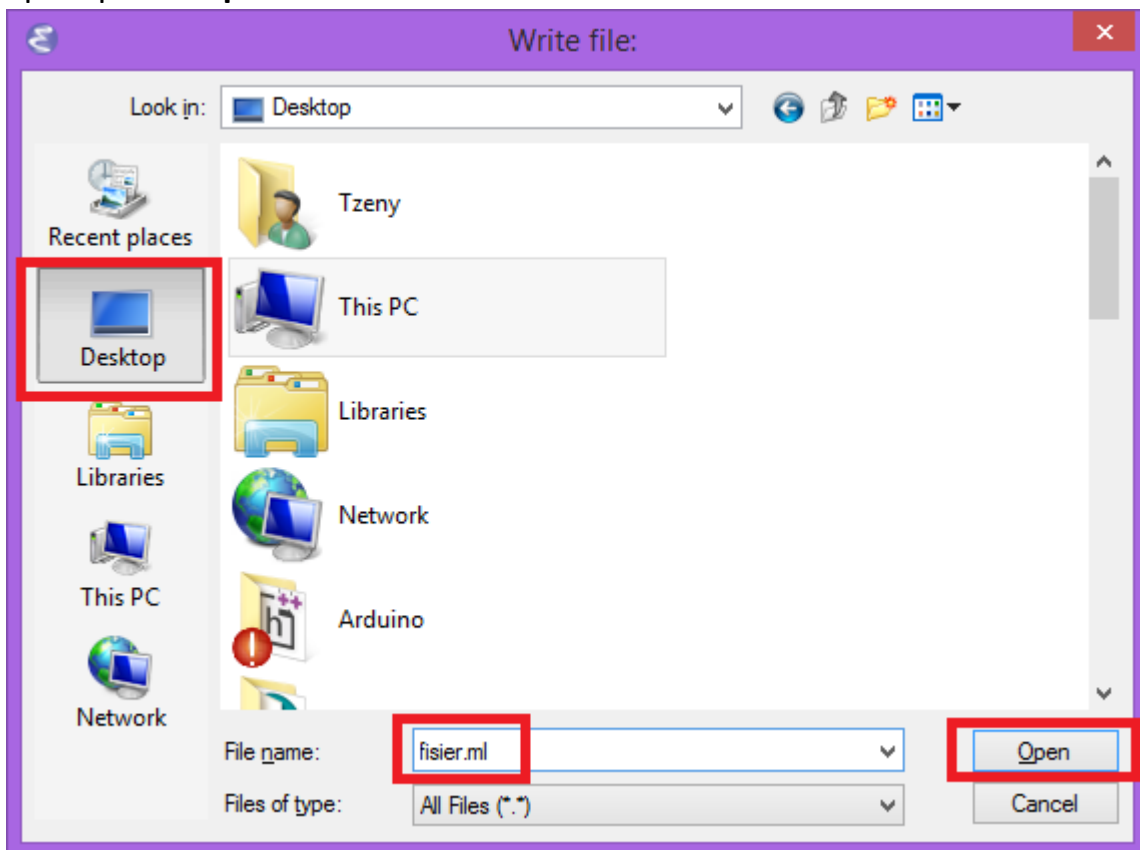
4. Interpretatorul va raspunde 3. Felicitari, aveti instalat Emacs si Ocaml sub Windows!

Salvarea fișierelor

1. Dati click pe **File**, apoi pe **Save As...**



2. Ca sa salvati pe Desktop, dati click pe **Desktop**, la nume scrieti de exemplu **fisier.ml** apoi apasati **Open**



Solutii la problemele de logica:

1. Femeia in varsta, bineinteles! Dupa ce o ajuti sa intre in masina, ii dai cheile prietenului tau si astepti autobuzul impreuna cu jumatatea visurilor tale.
2. Cand Neastamparatul Nelu a deschis usa de la beci a vazut sufrageria si gradina pe geam. El nu mai vazuse niciodata asa ceva pentru ca mama sa l-a tinut inchis in beci toata viata.
3. Raspunsul la problema este ca ar trebui sa alegi sa tragi al doilea.

Numeroteaza camerele cu numere de la 1 la 6. Camerele 1-3 au gloante, camerele 4-6 sunt goale. Dupa ce rotim cilindrul revolverului, avem sase posibilitati:

1. Camera 1 – Jucatorul 1 moare
2. Camera 2 – Jucatorul 1 moare
3. Camera 3 – Jucatorul 1 moare
4. Camera 4 – Jucatorul 2 moare (prima impuscatura, jucatorul 1, camera 4 libera; a doua impuscatura, jucatorul 2, camera 5 libera; a treia impuscatura, jucatorul 1, camera 6 libera; a patra impuscatura, jucatorul 2, camera 1 plina)
5. Camera 5 – Jucatorul 1 moare (acelasi rationament ca mai sus)
6. Camera 6 – Jucatorul 2 moare (acelati rationament)

Asadar, jucatorul 2 are patru din sase sanse sa castige.