

(CSCI 421 VA) Project One My First ML Project

Objectives:

1. Install Standard ML of New Jersey to your computer
2. Write/Run SML functions on Standard ML of New Jersey Interactive System
3. Write the SML functions in a text editor, then run the code on Standard ML of New Jersey Interactive System

Functions to Write:

1. Write a function `cube` of type `int → int` that returns the cube of its parameter
2. Write a function `sqsum` of type `int → int` that takes a non-negative integer `n` and returns the sum of the squares of all the integers 0 through `n`. Your function need not behave well on negative input.
3. Write a function `max` of type `int list → int` that returns the largest element of a list of integers. Your function need not behave well if the list is empty. (refer to exercise 13 on page 85 of the textbook)

Steps to Finish the Project:

Step One: Install Standard ML of New Jersey to your computer.

To install on Window, please watch the video

<https://www.youtube.com/watch?v=hDkG2aH2iqU>

To install on Mac, you may watch the video at <https://youtu.be/qdUnCK85CoI>

Step Two: Write all functions in a text editor and save the file as `YourNameProjOne.sml`.

Step Three: Run your code and test the correctness with data

Open terminal window. Use command `ls` see the folders/files in current folder. Use command `cd ..` to go into upper level folder. Use command `cd folder_name` to go to the subfolder. Navigate to the folder where you saved `YourNameProjOne.sml` file.

Now type command: `sml`

Then type command: `use "YourNameProjectOne.sml"`

The file name must be in `" "`. If everything is correct, your functions are ready to use.

Sample Run on My Computer: my file was saved as `CSCI461ProjOne.sml` in folder `Documents/CSCI461VA/Project`. The file name is: `CSCI461ProjOne.sml`. It contains the following code:

(this is problem one *)*

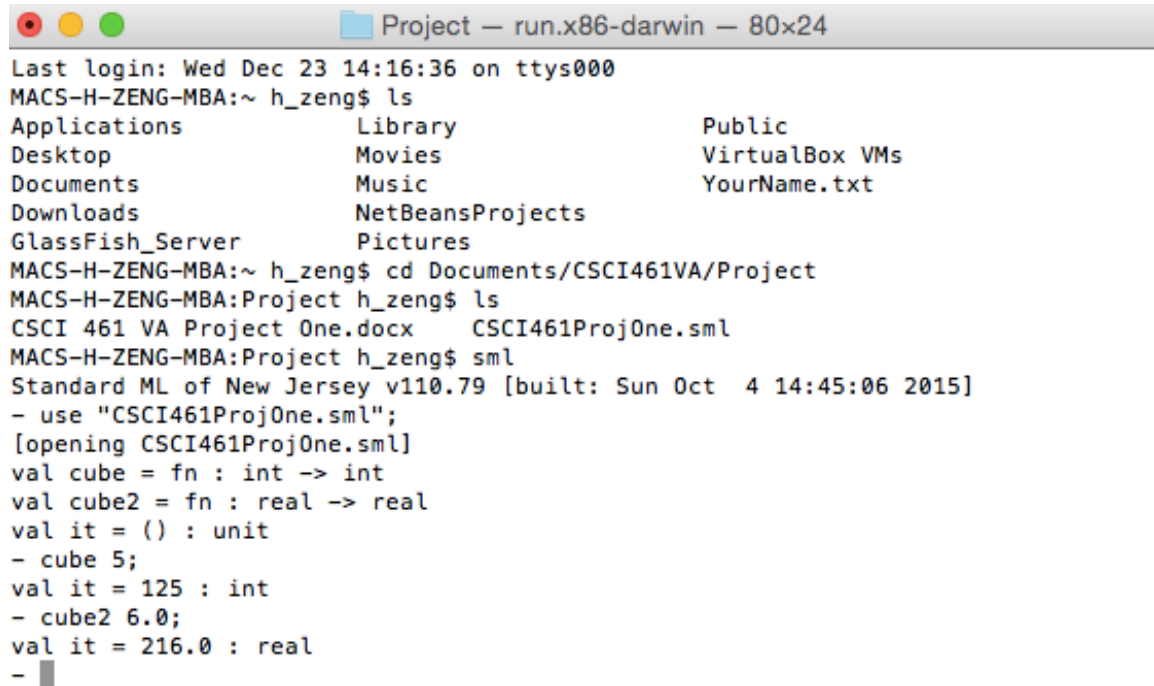
*fun cube x = x*x*x;*

(this is problem two *)*

*fun cube2 x:real = x*x*x;*

Here (* ... *) are comments

Here is the screen shot for what I have done:



```
Project — run.x86-darwin — 80x24
Last login: Wed Dec 23 14:16:36 on ttys000
MACS-H-ZENG-MBA:~ h_zeng$ ls
Applications      Library           Public
Desktop           Movies            VirtualBox VMs
Documents         Music             YourName.txt
Downloads         NetBeansProjects
GlassFish_Server  Pictures
MACS-H-ZENG-MBA:~ h_zeng$ cd Documents/CSCI461VA/Project
MACS-H-ZENG-MBA:Project h_zeng$ ls
CSCI 461 VA Project One.docx  CSCI461ProjOne.sml
MACS-H-ZENG-MBA:Project h_zeng$ sml
Standard ML of New Jersey v110.79 [built: Sun Oct  4 14:45:06 2015]
- use "CSCI461ProjOne.sml";
[opening CSCI461ProjOne.sml]
val cube = fn : int -> int
val cube2 = fn : real -> real
val it = () : unit
- cube 5;
val it = 125 : int
- cube2 6.0;
val it = 216.0 : real
- █
```

The due date will be announced on Blackboard.