

## ML Guided Practical Session – Week 2

### Getting started

- Log in to the PWF
- Close the MOTD (Message-of-the-Day) window
- Click *start*
- Click PWF Programs
- Open Word and Text Processing
- Open Notepad
- Key in the following ML source text making sure that it is exactly as shown here but with your own name in line 1:

```
(* ML ASSESSED EXERCISES. TICK 2 SUBMISSION FROM F.H. KING. *)
(* Estimated time to complete: 10 mins. Actual time: 25 mins. *)

(* PROBLEM 1. A recursive factorial function facr(n) ... *)
fun facr(n) = if n=0 then 1 else n*facr(n-1);

(* PROBLEM 2. An iterative factorial function facr(n) ... *)
fun facr(n) =
  let
    fun f(i,a) = if i=0 then a else f(i-1, i*a)
  in
    f(n,1)
  end;
```

- Choose the **Save As** command from the **File** menu
- In the **File name** box, overwrite `*.txt` with `Tick2`
- Click **Save**
- Click the **Minimize** button

### Testing the ML source

- Return to PWF Programs
- Open Teaching Packages

- Open Computer Laboratory
- Start Cambridge ML
- Choose the `Read` command from the `File` menu
- From the `List files of type` drop-down list box, select `All files (*.*)`; the list of files which appears probably includes `Tick1.LOG` which you created last week (the `.LOG` extension was added automatically by CML) and `Tick2.txt` which you have just created (the `.txt` extension was added automatically by Notepad)
- Double-click `Tick2.txt` to open it
- Check that you have the `ML use` command  

```
use "U:\\Tick2.txt";
```
- Press `ENTER`

If there is an error message you will have to click `Tick2.txt - Notepad` in the Task Bar at the foot of the screen, edit the `ML` source, then choose the `Read` command from the `File` menu again

- Before each of the following test calls of the functions, press `ENTER` to ensure that there are vertical gaps separating adjacent tests:

```
faci(6); then faci(0); then facr(6); then facr(0);
```

- When everything seems to work choose the `Save As` command from the `File` menu
- Save the `ML` session as `Tick2`
- Exit from `CML`

### Looking at the files created so far

- Double-click the icon representing your documents on `PWF Drive U`; the system should show `Tick1` and *two* files called `Tick2`. All these files have a `Notepad` icon but notice the extensions: `Tick1.LOG` and `Tick2.LOG` were created in `CML` and `Tick2.txt` in `Notepad`

### Tidying up and printing

- Remembering that all these files have a `Notepad` icon, double-click `Tick2.LOG` to enter `Notepad`

- Tidy up the text and add a new line at the top with your own name so that it looks as closely as possible like the version shown below:

TICK 2 SUBMISSION FROM F.H. KING...

FAM CML started on 27-Sep-2009 14:22:06  
(version 4.2.00 of Sep 23 1994)

Image file Y:\cml\CML.EXP

(written on 29-Aug-1994 16:25:54 by FAM version 4.2.00)  
[Loading Foreign Heap (Converting for Generic Use)]

Edinburgh ML for DOS/Win32s/Unix (C) Edinburgh University & A C Norman

```
- use "U:\\Tick2.txt";
> () : unit
[Opening U:\\Tick2.txt]
> val facr = Fn : int -> int
> val faci = Fn : int -> int
[Closing U:\\Tick2.txt]
-
- faci(6);
> 720 : int
-
- faci(0);
> 1 : int
-
- facr(6);
> 720 : int
-
- facr(0);
> 1 : int
-
```

- Print this
- Save the changes made to Tick2.LOG
- Open Tick2.txt
- Print the ML source
- Exit from Notepad
- Collect your output
- Log off from the PWF and take the sheets to Dr King for signature. The ML source text should be *on top of* the short ML session.