



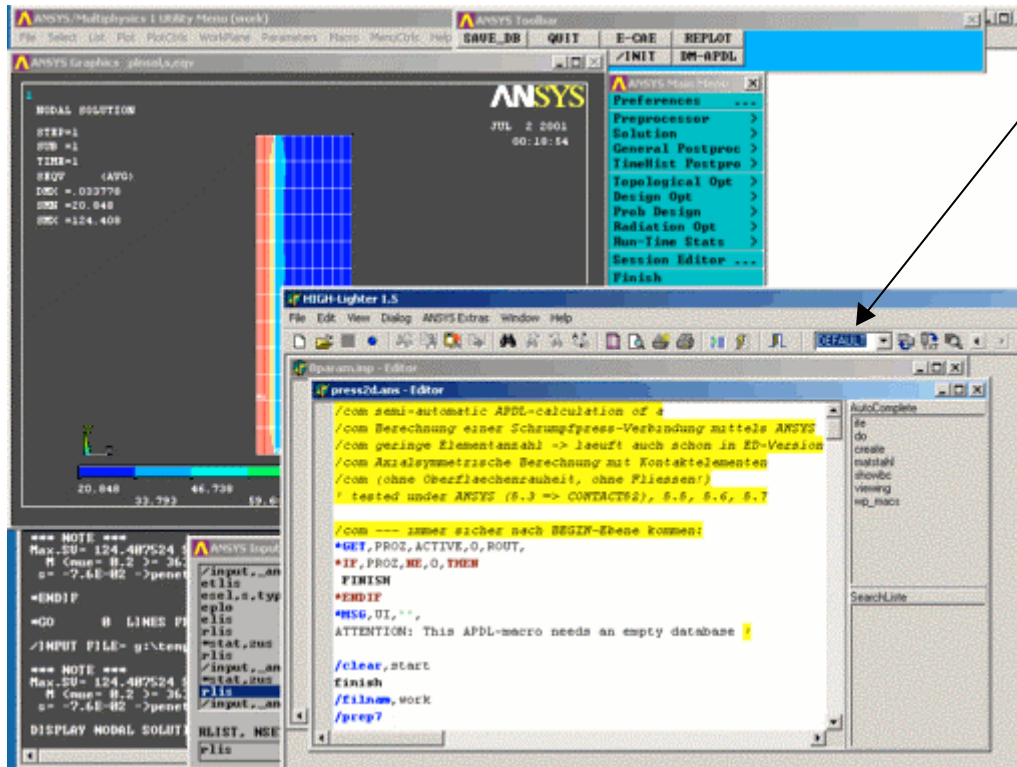


QUICKSTART for using the ANSYS-Syntax-Highlighter (Version 1.85)

- The Syntax-Highlighter is the result of a project with the **intention to examine the most needed and helpful functions** which an ANSYS session editor should provide.
- Other ANSYS configurable editor programs (but more global) are i.e. :    
- The software will be distributed as freeware (actual code is based on a GNU-license)
Actually available for Windows NT 4 and NT 5 (Linux-version pending)
- min. Screen-resolution: 1024x768 (more is recommended)
- Try to arrange your windows like this (Save with MenuCtrls + Savemenu-Layout) :



Syntax-Highlighter
(is able to **replace**
your input window)

Overview of program functions

- Window editor functions (as usual)
- simple workspace-manager
- safety functions
- ANSYS-specific functions of the editor give exceeded productivity
- Syntax-Highlighting
- Installing and configuring the editor



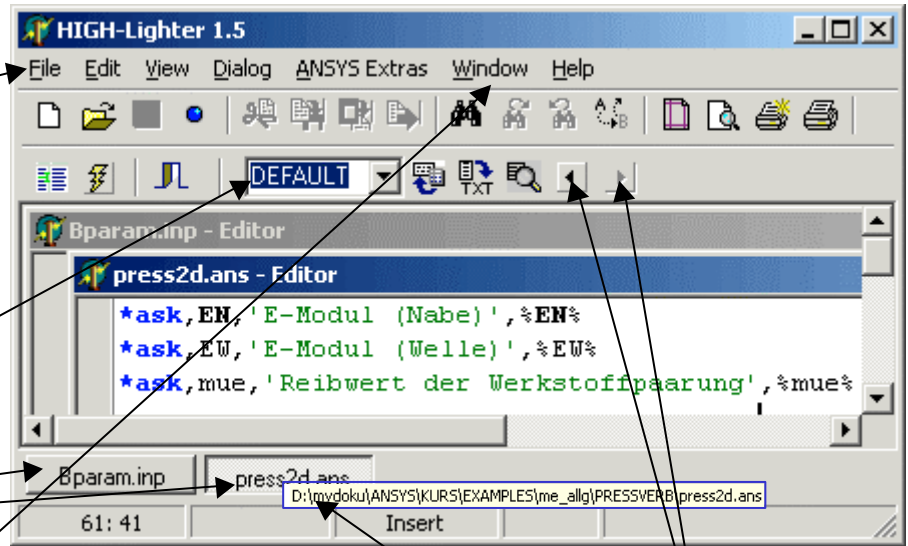
Loading files with the Standard-File-Menu or via Drag&Drop out of the Explorer

Workspace bar

Navigating bars (Additional to the Standard-Window-Menu for faster access)

Hint gives information for full filename

Position Navigating



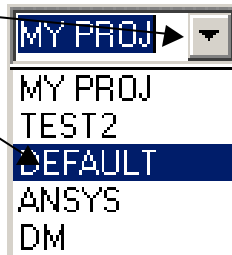
The program includes a simple **workspace-manager**:

If you have loaded all files of your project, save this workspace:

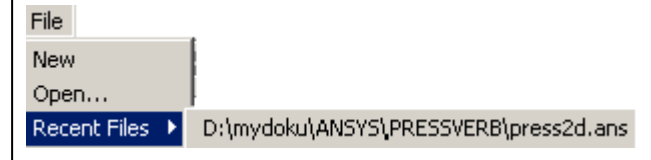
- just type in the Name of your workspace (RETURN key saves the workspace)



- next time you want to change the workspace, click on the right side and choose in the list



Another way to reload the last files is the **Recent-Files** menu:



safety functions of the editor

Problem description:

- Even at a stand-alone-PC text editors do not check, if the file is already opened (Word or wordpad do this right, but are bad ANSYS-Editors)
But if you edit an ANSYS-Inputfile two times, you can overwrite a better version.

Our Solution:

- program has to check (and prevent) multi-editing

Problem description:

- many editors delete the Undo-Buffer when saving the file

Our Solution:

- We only delete the buffer, if the file is closed
- unlimited undo-size

Problem description:

- ANSYS under UNIX-11 can crash if textfiles contain tabs

Our Solution:

- We can delete all tabs, exchanging them via space chars
- Indent-Functions uses space chars, not tabs

We recommend the following settings:

(see chapter configuring syn_editor.ini)

```
AllowOnlySingle=1
```

```
SaveBackup=1
```

```
SaveNoTabs=1
```

ANSYS-specific functions of the editor

- Multirow-ANSYS-Comment-Switch of marked block:

```
L=93      ! Fuegelaenge
EN = 2.1E5 ! E-Modul (Nabe)
EW = 2.1E5 ! E-Modul (Welle)
```

Select the rows to switch and press
STRG+ALT+W
(every key is user-configurable)

```
!L=93      ! Fuegelaenge
!EN = 2.1E5 ! E-Modul (Nabe)
!EW = 2.1E5 ! E-Modul (Welle)
```

- Nice function for training as well as for power users:

Copy to Ansys using a temp-file and APDL-Clipboard-Text “/inp,” with Parameter 1 (write into log file)

The commands are **automatic written** into the ANSYS command line

```
*ask, Daw, 'Wellen-Aussen-Durchmesser
*ask, EditAnsysCopy Strg+Alt+A
*ask, Undo Strg+Z
```

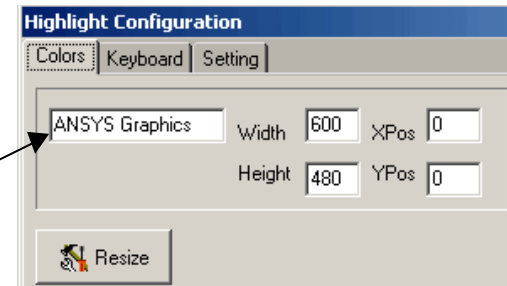
This avoids ANSYS from crashing under Windows 2000 and enables NT-Systems to use more lines (ANSYS cuts clipboard lines under NT systems)

In this way it is also possible to use a **direct *vwrite-command** (no macro needed!)

- **Resize ANSYS-Graphics-Window** (Dialog-Window)

This is a fast method to resize the window to a user-specific size i.e. to create comparable AVI'S or /UIS-hardcopies

Window Title



- **Enhanced Dyn.-Prompt-function** (we are still looking for the best way)

```
mc|
MODE, MODE, ISYM
MODIFY, SET, LSTEP, ITER, CUMIT, TIME, Ktitle
MODMSH, Lab
MODOPT, Method, NMODE, FREQB, FREQE, PRMODE, Nrmkey, , Cekey
MONITOR, VAR, Node, Lab
MOPT, Lab, Value
MOVE, NODE, KC1, X1, Y1, Z1, KC2, X2, Y2, Z2
```

- Press SHIFT, click behind the word and move the mouse
- type command and first comma **and wait some seconds** (list appears and stays until next ENTER or ESC) :

```
clocal, 21, 1
CLOCAL, KCN, KCS, XL, YL, ZL, THXY, THYZ, THZX, PAR1, PAR2
```

Understanding Highlighting



Please load the example "press2d.ans", goto row 50 and view:

Row-comments

```
*MSG,WARN,' ',DaW,diW,diN,DaN,L,EN,EW  
! DaW=%G diW=%G %/ diN=%G DaN=%G %/ L=%G%/ EN=%G EW=%G
```

APDL-Keywords

```
*ask,Daw,'Wellen-Aussen-Durchmesser (Oberes Abmass der Tole)  
*ask,diW,'Wellen-Innen-Durchmesser',%diW%  
*ask,diN,'Naben-Innen-Durchmesser (Unteres Abmass der Tole)  
*ask,DaN,'Naben-Aussen-Durchmesser',%DaN%  
*ask,L,'Fuegelaenge',%L%  
*ask,EN,'E-Modul (Nabe)',%EN%  
*ask,EW,'E-Modul (Welle)',%EW%  
*ask,mue,'Reibwert der Werkstoffpaarung',%mue%  
  
*ask,yDivs,'y-Netzfeinheit [>=4]',%yDivs%  
*ask,xDivs,'x-Netzfeinheit [>=3]',%xDivs%
```

Strings

```
*IF,ans_ver,LE,5.4,THEN  
KN=5E6 ! guter Startwert, aber universeller ist:
```

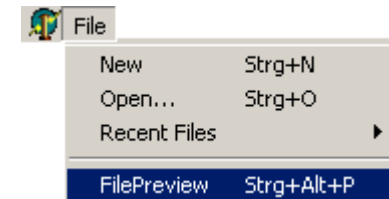
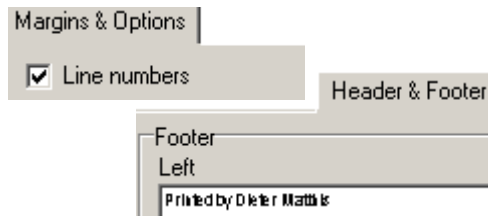
APDL-Programming

Try also **printing** highlighted ANSYS-Files on a black&white-laser:



Before printing try a **preview**:

Important **adjustments** are:



Note: This program uses advanced Highlighting

This means that text is not only highlighted with colors and text font properties like bold, italics.

We also use **background coloring**. To see the difference export your ANSYS-File as a colored HTML-File and compare screen and printing:

```
! *MSG,WARN,' ',DaW,diW,diN,DaN,L,EN,EW
! DaW=%G diW=%G %/ diN=%G DaN=%G %/ L=%G%/ EN=%G EW=%G

*ask,diW,'Wellen-Innen-Durchmesser',%diW%
*IF,ans_ver,LE,5.4,THEN
KN=5E6 ! guter Startwert, aber universeller ist:
```

Advanced Highlighting
on the screen
or color printing

HTML
without advanced
highlighting

```
! *MSG,WARN,' ',DaW,diW,diN,DaN,L,EN,EW
! DaW=%G diW=%G %/ diN=%G DaN=%G %/ L=%G%/ EN=%G EW=%G

*ask,diW,'Wellen-Innen-Durchmesser',%diW%
*IF,ans_ver,LE,5.4,THEN
KN=5E6 ! guter Startwert, aber universeller ist:
```

```
! *MSG,WARN,' ',DaW,diW,diN,DaN,L,EN,EW
! DaW=%G diW=%G %/ diN=%G DaN=%G %/ L=%G%/ EN=%G EW=%G

*ask,diW,'Wellen-Innen-Durchmesser',%diW%
*IF,ans_ver,LE,5.4,THEN
KN=5E6 ! guter Startwert, aber universeller ist:
```

Advanced Highlighting
on a b&w printing

b&w printing
without coloring backgrounds

```
! *MSG,WARN,' ',DaW,diW,diN,DaN,L,EN,EW
! DaW=%G diW=%G %/ diN=%G DaN=%G %/ L=%G%/ EN=%G EW=%G

*ask,diW,'Wellen-Innen-Durchmesser',%diW%
*IF,ans_ver,LE,5.4,THEN
KN=5E6 ! guter Startwert, aber universeller ist:
```

Advanced Functions:

Besides highlighting, the program offers other very simple, but helpful ANSYS-specific functions:

- **Auto-completion** using templates (using **AutoIndent**)

```
*DO, IVAL, FVAL, INC
*ENDDO
```

- **Quicksearch-List**



find to search list ...
and open or close find list (F5)

Seems to be more useful than a word-sensitive search (like i.e. Winword)

- **AutoScanning** of declared and used ANSYS-variables : (Using the Quicksearch-List-Window)



create ANSYS Doku ...
search *SET, =, e.g. variables
and show in list or close again (F7)

Right clicking in the Search-Window opens a new editor window for a quick documentation (STRG for sorting):

```
DaN=155      ! Naben-Aussen-Durchmesser
L=93         ! Fuegelaenge
EN = 2.1E5   ! E-Modul (Nabe)
EW = 2.1E5   ! E-Modul (Welle)
```

```
1212 :      _Z2=Z_B1-T_BL-A_BL-( _I-1)*R_BL
1217 :          Z1=  Z1-B34_ZUS
1218 :          Z2=  Z2-B34_ZUS
1220 :          Z1=  Z1-B12_ZUS
1221 :          Z2=  Z2-B12_ZUS
1234 :      _Z1=Z_B1-( _I-1)*R_BL
1235 :      _Z2=Z_B1-T_BL-A_BL-( _I-1)*R_BL
1236 :      _Z1=  Z1-A_IL/2+L_DS/2
1237 :          Z2=  Z1      -L_DS
```

NOTE:

The Autoscanning uses only assignments (*GET, =, also in commented lines)
Use QuickSearch-List for searching every position of a variable.

Just click on the variable in the QuickSearch-List and the cursor jumps to this position

Context functions:

a very powerful online documentation function is the outline tree.
The structure is based on comments with a limited set of keychars.

The number of keychars shows the outline level.

Start `tree-example.ans` and test it !!

Keychar is "-"

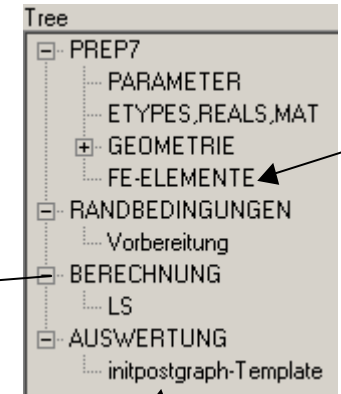
```

!-- PREP7
!-- PARAMETER
!-- ETYPES,REALS,MAT

/COM Tetraeder ##
    ET,1,92
    eshape,1

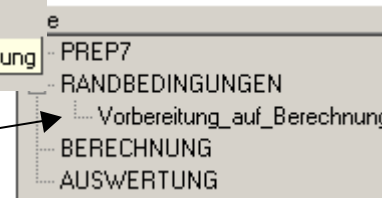
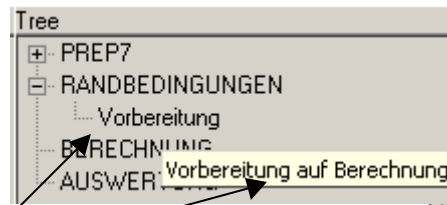
/COM Hilfsvermaschung ##
    ET,10,93

!-- GEOMETRIE
!-- Volumen flicken
!-- Flaechen teilen
!-- FE-ELEMENTE (Vernetzung)
    
```



level 2

"!--" means level 2



Clicking at the outline node leads cursor to this position

Hint: Use underscores (_) :

```

-- Vorbereitung auf Berechnung
    
```

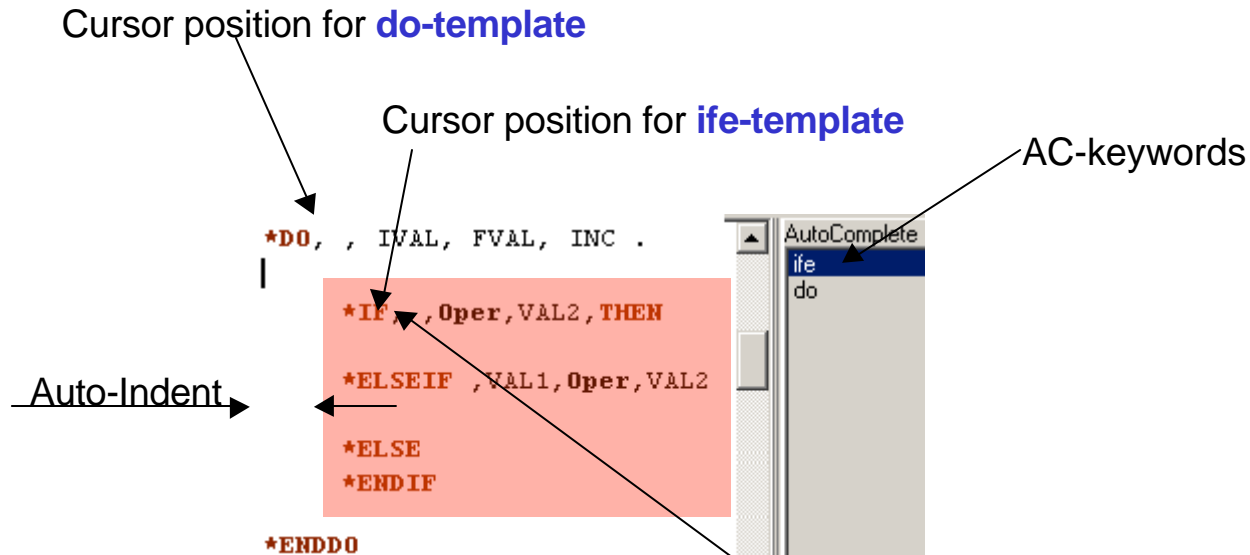
```

-- Vorbereitung_auf_Berechnung
    
```

Using AutoCompletion and Auto-Indent:

Auto-Completion can be used in two different ways:

- type in the A.C.-keyword and press STRG+J
- or: double-click the template at the Auto-Complete-List
 - ▶ the Auto-Complete-Block is automatically placed with an indent fitting to the cursor position



Note:

After insertion of the template the cursor position is placed to continue editing

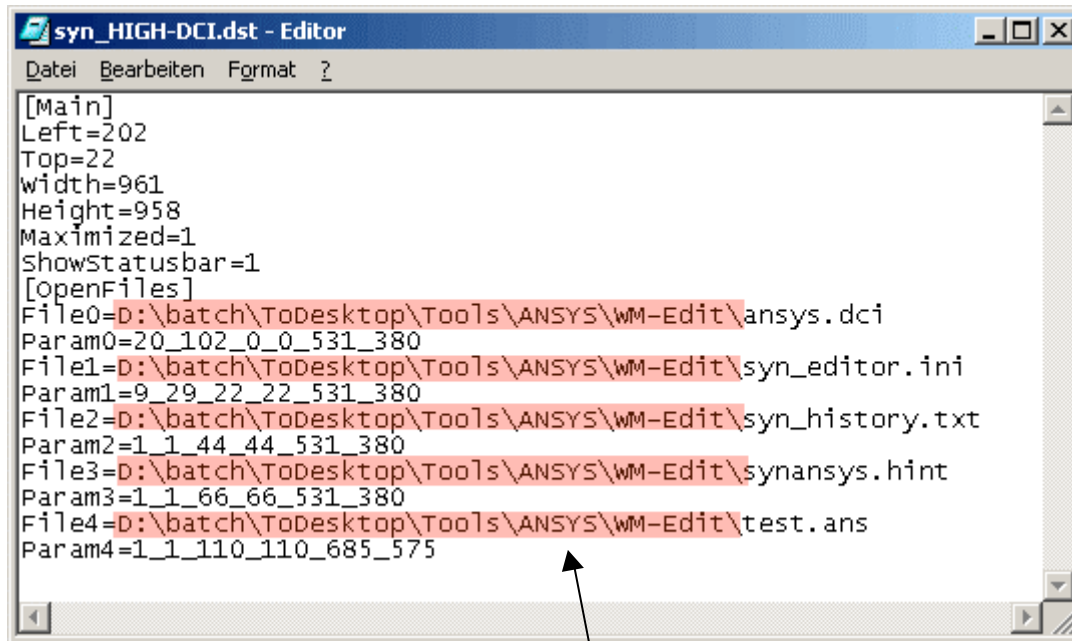
Installing the editor

Note:

The programs needs no registry-entries.

This means very simple installing by copying all files in one directory.

We recommend to edit the File `syn_HIGH-DCI.dst` first:



```
[Main]
Left=202
Top=22
width=961
Height=958
Maximized=1
ShowStatusBar=1
[OpenFiles]
File0=D:\batch\ToDesktop\Tools\ANSYS\WM-Edit\ansys.dci
Param0=20_102_0_0_531_380
File1=D:\batch\ToDesktop\Tools\ANSYS\WM-Edit\syn_editor.ini
Param1=9_29_22_22_531_380
File2=D:\batch\ToDesktop\Tools\ANSYS\WM-Edit\syn_history.txt
Param2=1_1_44_44_531_380
File3=D:\batch\ToDesktop\Tools\ANSYS\WM-Edit\synansys.hint
Param3=1_1_66_66_531_380
File4=D:\batch\ToDesktop\Tools\ANSYS\WM-Edit\test.ans
Param4=1_1_110_110_685_575
```

Installation folder

Details for configuring (available, but not fully documented yet) :

The pre-defined workspace HIGH-DCI loads all needed files:

Some adjustments are automatically done using the Dialog-Window

Other settings are shown here :

Avoiding multi-changing on
single user-system

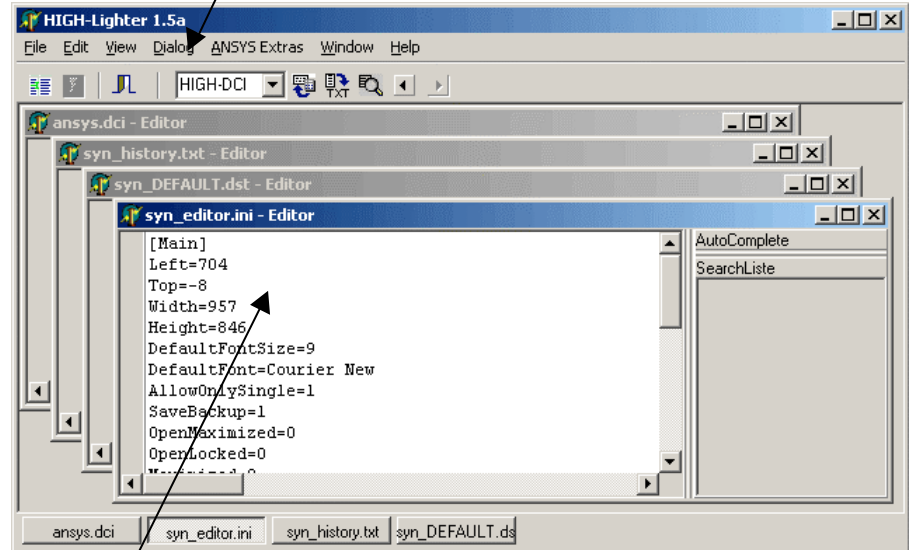
```
AllowOnlySingle=1
SaveBackup=1
```

Automatic backups when saving

Do not edit Syn_editor.ini
inside of the Highlighter
(program reads ini-File at
start and writes at the end)

File-Extensions for Highlighting:

```
[HighlighterFilter]
SynANSYS=ANSYS files (*.ans,*.inp,*.log,*.mac)|*.ans;*.inp;*.log;*.mac
```



See Print preview:

```
PrintHeaderLine=Title first line
PrintFooterLine=Printed by Wilfried Matthis
```

Important for UNIX-users:

```
SaveNoTabs=1
```

Details for configuring Auto-completion :

There are two methods:

a) Highlight-Window based (under construction)

b) manual administration:

Also use pre-defined workspace HIGH-DCI and changing ANSYS.dci.
ANSYS.dci is describing the hierarchical outline and APDL-templates

Semicolon “;” is a reserved char, followed by the outline level and outline title

```
ansys.dci - Editor
;1 Schleifenbefehle
[ife | if then elseif else endif]
*IF, |,Oper,VAL2,THEN

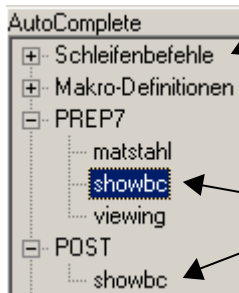
*ELSEIF ,VAL1,Oper,VAL2

*ELSE
*ENDIF      |

[do | do-loop]
```

Template Block:

“[“ is a reserved word, followed by AutoCompletion word and “|” and Hint, ended with “]”



Multiple Template Name is only a reference:

If the reference name is used more than one time, only the first definition is used, all others are using the same block

```
[showbc |boundary conditions)
/PSF,DEFA, ,1
/PBF,DEFA, ,1
/PSYMB,CS,1
```

Highlight-Window based Auto-completion configuration

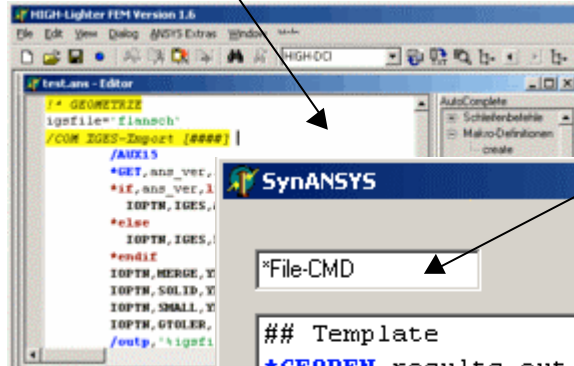
(still under construction)

use the Tree-Admin-Button in the Toolbar



(only available if Cursor is in Edit Window)

1. Choose the position in the tree
2. Edit title, comment, template



*File-CMD Filehandling

```
## Template
*CFOPEN,results,out,,APPEND
*VWRITE,i,Fx,Fy,Fz
(15x,F3.0,',1+2 =>Fx=',F8.1,',Fy=',F8.1,',Fz=',F8.1)
*CFCLOSE
```

c:\temp

Close UpdateNode NewCommand NewTreeNode SaveMacroFile

- Schleifenbefehle
- Makro-Definitionen
- CATS-APDL-Struktur
- PREP7
- POST
- WPLane
- *get
- *vwrite / PARSAV
 - *File-CMD
- Zus

TreeChars: # ^ - _

3. Update Node (if changed)
node must be selected in tree,
(otherwise copy to new position)

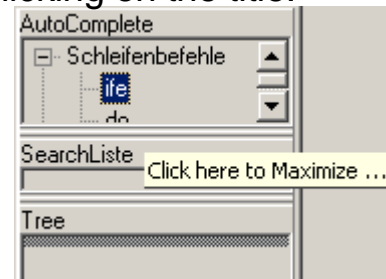
Change tree-structure

(At Work)

Other Functions:

- Column block (use ALT+Mouse-Select)
- Fill Block with specific character using STRG+ALT+F
- Set Marker (1..9) using STRG+SHIFT+1..9
- Goto Marker (1..9) using STRG+1..9 (use it instead of tiling the window)
- Match Bracket (see match-example.ans) :
place the cursor in front of "(" or ")" and press STRG+SHIFT+B :
`y12=ARG1*(1-cos(ARG2))`
- Still at work
First public version was distributed on the ANSYS-UserMeeting 2001 in Berlin
- For interested ANSYS-Users:
 - visit the CATS-Homepage (there will be a Email-Newsgroup for updates)
 - visit a training Workshop at Bahlingen (near Freiburg)
 - user-specific training (we travel to you)

Quick resizing the List-Windows
by Double-clicking on the title:



APDL-rules (in German: “Leitfaden”):

means standardization of APDL-Inputs => our strategy:

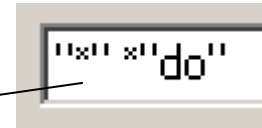
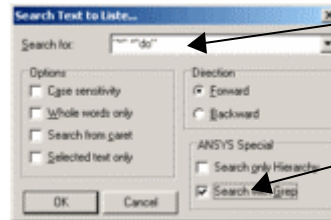
- macros and templates in a hierarchical library
- !- for Online-Tree
- !@ for Links (pictures, drawings and more..)
- and many more... we will initiate an APDL-workshop in 2002 to discuss it.

Editing synansys.hint gives personal help tips:

```
wpcsys, -1, 0  
wprot, |
```

```
WPROTA, THXY(z), THYZ(x), THZX(y)
```

Finding Start and end of *if / *do-loops
using grep-Search



```
SearchListe  
91 *do,k,1,7,1  
215 *enddo  
432 *do,i,1,7  
440 *enddo  
497 *do,j,1,7  
510 *do,i,na,ne  
528 *enddo  
530 *enddo  
572 *do,k,1,nt  
579 *enddo  
631 *do,l,1,nt  
633 *enddo  
635 *do,m,1,nt  
639 *enddo  
646 *do,j,nt+1,ntlw  
671 *enddo  
677 *do,n,nt+1,nz+1,-1  
681 *enddo  
893 *do,i,1,n  
902 *enddo
```

Start [grep-loops.ans](#) and test ist !!

Very often answered question:

How to indent a line / paragraph without using tabs ?

Solution (test with [indent-example.ans](#))

(A) Good APDL-stuff
but not easy to read:

```
*do,rii,1,10
*if,dtb/2-dpb/2,lt,rii,then
*if,dtb/2+dpb/2,lt,rii,then
  numstr,area,1
  fall=1 ! Fall 1
*elseif,dtb/2+dpb/2,lt,raa,then
  lcs1,all
  fall=2 ! Fall 2
*elseif,dtb/2+dpb/2,gt,raa,then
  fall=3 ! Fall 3
*endif
*endif
*enddo
```

(B) select block and
STRG+SHIFT+K+I for
indenting
(K+U as opposite)

```
*do,rii,1,10
*if,dtb/2-dpb/2,lt,rii,then
  *if,dtb/2+dpb/2,lt,rii,then
    numstr,area,1
    fall=1 ! Fall 1
  *elseif,dtb/2+dpb/2,lt,raa,then
    lcs1,all
    fall=2 ! Fall 2
  *elseif,dtb/2+dpb/2,gt,raa,then
    fall=3 ! Fall 3
  *endif
*endif
*enddo
```

(C) at the end:

```
*do,rii,1,10
  *if,dtb/2-dpb/2,lt,rii,then
    *if,dtb/2+dpb/2,lt,rii,then
      numstr,area,1
      fall=1 ! Fall 1
    *elseif,dtb/2+dpb/2,lt,raa,then
      lcs1,all
      fall=2 ! Fall 2
    *elseif,dtb/2+dpb/2,gt,raa,then
      fall=3 ! Fall 3
    *endif
  *endif
*enddo
```