

RUNNING EXTERNAL PROGRAMS ON EXCEL VISUAL BASIC

1. INTRODUCTION

Excel provides the capability to run external programs (such as MSC.NASTRAN) from the visual basic environment. Combining this capability with the possibility to send keys to these programs is very useful to perform automatic tasks.

2. PROCEDURE TO RUN EXTERNAL PROGRAMS

The procedure to run a external program is to execute the Shell function:

```
pad = Shell("c:\textpad.exe document.txt")
```

This function returns a variant that contains a reference to the program running. Any additional parameter of the program can be included in the string of the command (as on the example above the document.txt is opened). The string sent can be a variable.

3. PROCEDURE TO SEND KEYS TO THE EXTERNAL PROGRAMS

In order to interact with the external programs, any keys can be sent to the applications as if the user was writing in the keyboard. The command used for this purpose is Sendkeys:

```
SendKeys "{F8}"
```

This command sends the key F8 to the program with the focus. The menus of the programs are normally accessible by means of Alt+key. This combination is obtained by adding a % before the key sent:

```
Sendkeys "%F"
```

This command is equivalent to pressing Alt+F on the keyboard. You can navigate through the menus by the arrow keys and finally press enter when the option desired is selected:

```
Sendkeys "{DOWN}"
```

```
Sendkeys "{ENTER}"
```

Or simply send commands to a system command window to execute several tasks or run several programs:



AERSYS KNOWLEDGE UNIT

AERSYS-9002

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SendKeys "\$aral" & "{ENTER}"

You can give the focus to an application by means of the reference to the program:

AppActivate pad

This way you can run several programs in parallel and select the one that will receive the keys sent.

4. PROCEDURE FOR SLOW PROGRAMS

Some programs have difficulties to get all the keys when they are launched consecutively. When the programs are slow some keys can be missed. In order to avoid it the best option is to set a delay between consecutive keys. The delay should be set by the user according to the observations of the program behavior. The code will be like this:

```
If Application.Wait(Now + TimeValue("0:00:05")) Then AppActivate pad
    SendKeys CStr(Sheets("INPUT").Cells(1, 1)) & "{ENTER}"
If Application.Wait(Now + TimeValue("0:00:01")) Then AppActivate pad
    SendKeys CStr(Sheets("INPUT").Cells(2, 1)) & "{ENTER}"
If Application.Wait(Now + TimeValue("0:00:01")) Then AppActivate pad
    SendKeys CStr(Sheets("INPUT").Cells(3, 1)) & "{ENTER}"
```