MASM32 SDK Installation Guide

Instructor with 25+ Years of Experience

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Introduction

This guide provides step-by-step instructions to install the MASM32 SDK, set up the necessary environment variables, create a sample file called hello.asm, and verify the build process using the command line.

Step 1: Install MASM32 SDK

Download:
Visit the official website:
`http://www.masm32.com/`

Install:
Run the installer and install MASM32 SDK (default installation directory is C:\masm 32).

Step 2: Set Environment Variables

Open the System Properties (search for "environment variables" in Windows). Then add or edit the following variables:

- **INCLUDE:** C:\masm 32\include

- **LIB:** C:\masm 32\lib

- **PATH:** C:\masm 32\bin

These variables allow the system to locate the necessary include files, libraries, and executables.

Step 3: Create the hello.asm File

Create a file named hello.asm (for example, in the directory E:\masm 32\Folder) and insert the following content:

Content of hello.asm:

```
; Sample MASM program
.686
.model flat, stdcall

option casemap:none

include C:\masm32\include\windows.inc
include C:\masm32\include\kernel32.inc
include C:\masm32\include\masm32.inc

includelib C:\masm32\lib\kernel32.lib
includelib C:\masm32\lib\masm32.lib

.data
    message db "Hello boi!", 0

.code

main PROC
    invoke StdOut, addr message
    invoke ExitProcess, 0
    ret
main ENDP

end main
```

Note: Paths may vary – adjust them if MASM32 is installed in a different directory.

Step 4: Build Using the Command Line

Open cmd.exe and navigate to the directory containing hello.asm. Then run the following commands:

4.1 Assemble

```
ml /c /Zd /coff /I C:\masm32\include hello.asm
```

This command assembles hello.asm and produces the object file hello.obj.

4.2 Link

```
C:\masm32\bin\link.exe /subsystem:console /LIBPATH:C:\masm32\lib hello.obj
```

This command creates the executable hello.exe.

4.3 Run

```
hello.exe
```

Running this should display "Hello boi!" on the screen.

Step 5: Verify Installation

To verify that MASM32 is correctly installed, run the following command in the command prompt:

```
dir C:\masm32\include\windows.inc
```

If the file exists, then the installation and environment variables are set correctly.