e. Native Method

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- If the method is declared with native keyword then it is known as native method in java.

- Native method is used to communicate java application with different language like C/C++.

- Java ---> Library ---> C/C++

Application <--- <--- Application

Steps to create native application

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1. Create a java application

class Test

{

native void fact();

static

{

System.loadLibrary("lit");

}

public static void main(String[] args)

{

Test t = new Test();

t.fact();

}

}

Note:

- In the above program, fact() is a native method.

- If the method is native it indicates to java compiler, do not check the method existance at the time of compilation but check at runtime.

- native method also indicates, method present in a different environment (C/C++) but calling from java.

- loadLibrary() is a static method of System class which is responsible to load the library into JVM.

- Here "lit" is the library name.

2. Compile the java program

javac -h . Test.java

-h : Create a header file

. : In the current directory (instead of . we can write the complete directory name)

Note:

The above command will create 2 files

1. Test.class

2. Test.h

3. Open header file (Test.h) and copy the function prototype related to fact() method.

4. Design a C program (demo.c) within the copied function prototype.

#include "Test.h"

#include "jni.h"

#include "stdio.h"

JNIEXPORT void JNICALL Java\_Test\_fact (JNIEnv \*p, jobject q)

{

int num , f = 1, i = 1;

// logic of C program

printf ("Enter into C environment\n");

printf ("Enter a number to findout factorial\n");

scanf("%d",&num);

for (i = 1; i <= num; i++)

f = f\*i;

printf ("Fact of is : %d \n",f);

printf ("Exit from C and enter into Java again..\n\n");

}

5. Download the C software (MinGw) from www.thetechpoint.in

Extract MinGw in current folder.

6. set the path of gcc compiler.

set path=;C:\MinGW\bin;

7. Install JDK 1.8 32bits

Set the path of JDK home

set JAVA\_HOME=C:\Program Files (x86)\Java\jdk1.8.0\_25

8. Compile the C program

gcc -c -I"%JAVA\_HOME%\include" -I"%JAVA\_HOME%\include\win32" demo.c

Note: The above command will create demo.o file

9. Create a library (lit.dll) from demo.o file

dll : dynamic linking library

gcc -Wl,--add-stdcall-alias -shared -o lit.dll demo.o

10. Compile the Java program by setting the path of javac compiler.

set path=;C:\Program Files (x86)\Java\jdk1.8.0\_25\bin;

javac Test.java

11. Execute the java program

java Test

In CMD

D:\JAVA LIT CORE\NativeApplication>javac -h . Test.java

D:\JAVA LIT CORE\NativeApplication>set path=;C:\MinGW\bin;

D:\JAVA LIT CORE\NativeApplication>set JAVA\_HOME=C:\Program Files (x86)\Java\jdk1.8.0\_25

D:\JAVA LIT CORE\NativeApplication>gcc -c -I"%JAVA\_HOME%\include" -I"%JAVA\_HOME%\include\win32" demo.c

D:\JAVA LIT CORE\NativeApplication>gcc -Wl,--add-stdcall-alias -shared -o lit.dll demo.o

D:\JAVA LIT CORE\NativeApplication>set path=;C:\Program Files (x86)\Java\jdk1.8.0\_25\bin;

D:\JAVA LIT CORE\NativeApplication>javac Test.java

D:\JAVA LIT CORE\NativeApplication>java Test

Enter into C environment

Enter a number to findout factorial

5

Fact of is : 120

Exit from C and enter into Java again..