

Fall 2005 CS 440/540 Operating Systems  
Homework-2 Part-II

The following instructions show how to invoke a C function from Java using the Java Native Interface (JNI).

1. Login to one of the blazer machines and then copy the JNI examples to your directory (note the space after jni-example.tar and also the period after the space):

```
puri@hestia:~/cs440[513]$ cp ~puri/cs440-html/software/jni-example.tar .
```

2. Extract the tar file:

```
puri@hestia:~/cs440[514]$ tar xvf jni-example.tar
drwxr-xr-x 511/10    0 Sep 28 10:58 2005 jni/
-rw-r--r-- 511/10   727 Sep 28 10:34 2005 jni/ProcessInfo.h
-rw-r--r-- 511/10  1295 Sep 28 10:58 2005 jni/out
-rw-r--r-- 511/10   276 Sep 28 10:55 2005 jni/commands
-rw-r--r-- 511/10   774 Sep 28 10:50 2005 jni/ProcessInfo.java
-rw-r--r-- 511/10  1748 Sep 28 10:54 2005 jni/ProcessInfo.c
puri@hestia:~/cs440[515]$
```

3. Change to the directory jni and execute the following commands:

```
puri@hestia:~/cs440[517]$ cd jni
puri@hestia:~/cs440/jni[518]$ javac ProcessInfo.java
puri@hestia:~/cs440/jni[519]$ javah -jni ProcessInfo
puri@hestia:~/cs440/jni[520]$ gcc -G -I/usr/java/include -I/usr/java/include/solaris
ProcessInfo.c -o libprocess.so
puri@hestia:~/cs440/jni[521]$ java ProcessInfo /bin/ls
argc = 1
argv[0] = /bin/ls
Child process starting for "/bin/ls"
=====Output fro new process=====
PID of new process is 13248ProcessInfo.c  ProcessInfo.h  commands  out
ProcessInfo.class ProcessInfo.java  libprocess.so

=====Process Details=====
name of execed file:
initial argument count: 0
initial characters of arg list:
process id: 13248
process parent id: 13247
real user id: 511
real group id: 10
number of lwps in the process: 0
size of process image in Kbytes: 0
resident set size in Kbytes: 0
=====End Details=====
```