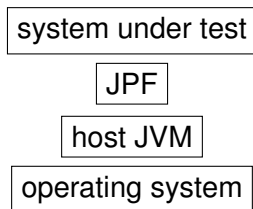


Handling Native Methods

EECS 4315

www.cse.yorku.ca/course/4315/

Native peers are the JPF analogue of native code.



Native peers are executed by the host JVM (recall that model classes are executed by JPF).

Model Java Interface (MJI)

MJI is the JPF analogue of JNI. It provides the infrastructure for interaction between JPF and the host JVM when executing a native peer.

Naming

MJI uses a specific name pattern to establish the correspondence between the original class (containing the native method) and its native peer, similar to JNI.

```
package java.lang;
```

```
public class StrictMath
```

corresponds to

```
package gov.nasa.jpf.vm;
```

```
public class JPF_java_lang_StrictMath  
    extends NativePeer
```

MJI uses a specific name pattern to establish the correspondence between the original class (containing the native method) and its native peer, similar to JNI.

```
public static native double sin(double a);
```

corresponds to

```
@MJI
```

```
public double sin__D__D(MJIEnv env,  
    int clsObjRef, double a)
```

Naming

boolean	Z
byte	B
char	C
short	S
int	I
long	L
float	F
double	D

To ensure that JPF uses the native peer, rather than the original class, we need to add the native peer to the host JVM's classpath. Note that we do not have to change the application properties file.

- Due: Tuesday March 1
- Weight: 5% (counted as one of the quizzes)
- Length: 1-2 pages
- Content:
 - Description of the goal of the project
 - Description of possible extensions (if time permits)