

Tutorial 1 - Internet Addressing

1 The InetAddress Class

One of the classes within the Java package `java.net` is called `InetAddress`, which handles Internet addresses both as host names and as IP addresses. Static method `getByName` of this class uses the Domain Name Server (DNS) to return the Internet address of a specified host as an `InetAddress` object.

In order to display the IP address from this object we can simply use method `println` (which will cause the object's `toString` method to be executed). Since method `getByName` throws the checked exception `UnknownHostException` if the host name is unrecognised, we must either throw this exception or (preferably) handle it with a catch clause. The code in Listing 1 illustrates this.

Compile this code and run it. Try a number of different host names.

It is sometimes useful for Java programs to be able to retrieve the IP address of the current machine. Listing 2 does this. Again, compile and run it. Have you any observations about the IP address it displays?

Listing 1: IPFinder

```
import java.net.*;
import java.io.*;

public class IPFinder {
    public static void main(String[] args) throws IOException {
        String host;
        BufferedReader input = new BufferedReader(new
            ↪ InputStreamReader(System.in));

        System.out.print("\n Enter host name: ");
        host = input.readLine();
        try {
            InetAddress address = InetAddress.getByName(host);
            System.out.println("IP address: " + address.toString());
        }
        catch (UnknownHostException e) {
            System.out.println("Could not find " + host);
        }
    }
}
```

Listing 2: IPAddrDemo

```
import java.net.*;

public class IPAddrDemo {
    public static void main(String args[]) {
        System.out.println ("Looking up the IP address of the local
            ↪ host");
        try {
            // Get the local host
            InetAddress localAddress = InetAddress.getLocalHost();
            System.out.println("IP address of this machine: "
                ↪ +localAddress.getHostAddress());
        } catch (UnknownHostException uhe) {
            System.out.println ("Error - unable to resolve localhost");
        }
    }
}
```