EDA095
Internet Addresses

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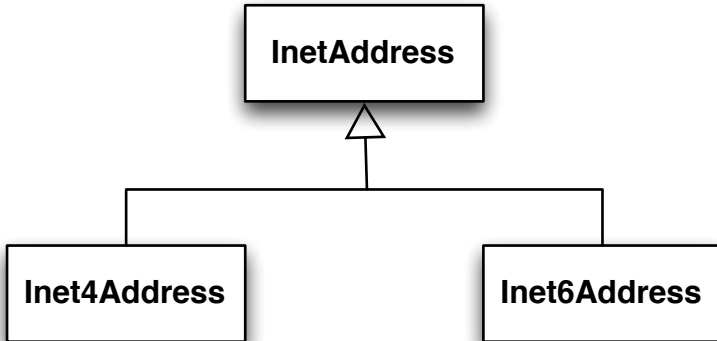http://cs.lth.se/roger_henriksson/

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Covers: Chapter 4, *Java Network Programming*, 4th ed., Elliotte Rusty Harold

The `InetAddress` Class Structure

The `InetAddress` class is an abstraction of `Inet4Address` and `Inet6Address`

InetAddress

The `InetAddress` class uses the factory pattern.

- `InetAddress address = InetAddress.getByName("")`
- `InetAddress[] address = InetAddress.getAllByName("")`
- `InetAddress address = InetAddress.getLocalHost()`

Programs: OReillyByName.java, MyAddress.java

See also: `nslookup`

InetAddress Getters

Getter methods extract values from an `InetAddress` object

- `public String getHostName();`
- `public String getCanonicalHostName();`
- `public byte[] getAddress();`
- `public String getHostAddress();`

Program: ReverseTest.java

Address Types

Boolean functions that determine the type of an IP address

- `isAnyLocalAddress();`
- `isLoopbackAddress();`
- `isLinkLocalAddress();` //IPv6
- `isSiteLocalAddress();` //IPv6 and IPv4: 10/8, 172.16/12 and 192.168/16.
- `isMulticastAddress();`
- `isMCGlobal();`
- `isMCNodeLocal();`
- `isMCLinkLocal();`
- `isMCSiteLocal();`
- `isMCOrgLocal();`

Program: IPCharacteristics.java

Some useful methods:

- `isReachable();`
- `equals();`
- `hashCode();`
- `toString();`

Program: IBiblioAliases.java

NetworkInterface

This class represent the hardware connection devices: Ethernet and Wifi.
Factory pattern:

- `NetworkInterface.getByName("en0");`
- `NetworkInterface.getByInetAddress(InetAddress);`

Program: InterfaceLister.java
See also: `ifconfig -a`

Application: Spam detection
SpamHaus.org maintains a register of known spammers.
Accessible through DNS:

```
java SpamCheck 78.30.194.176
176.194.30.78.sbl.spamhaus.org
78.30.194.176 is a known spammer.
```

Program: SpamCheck.java