Remote Method Invocation

**Quiz 3:**

Consider:
- Java RMI – specific to Java – not a standard
- CORBA – low level comm. protocol – IIOP
- SOAP – uses XML transport (HTTP)

1) What is the essential thing that all 3 of these provides? **All provide remote method invocation.**

2) What, specifically, is different about the way that each of them provides this? **(Write one sentence for each)**

*WRITE YOUR NAME & LAB SECTION AT THE TOP.*
Motivation:
TCP/IP — comm by sending/receiving messages
Different programming model

Standard way of doing things:
(in one process)

What happens if $x + y$ are on different machines?
1) No shared stack or heap — can't refer to $y$!
Can't put param on stack!
Remaining issues:

1. Format of messages
   - Java RMI
   - CORBA - IIOP (Standard)
   - SOAP - over HTTP using XML (text)

2. Finding & getting references to remote objects. (Knowing what you can call on them.)
Registry:

- Known service (widely publicized location)
  - Lookup by name $\rightarrow$ returns an IP address, port
  - Provide interface definitions
    - Java Interfaces (Java RMI)
    - IDL - interface definition language (CORBA)
    - WSDL - SOAP's interface spec.

Java RMI
- Start registry
- Server starts up & registers itself
- Client contacts the registry to get a remote reference
- Further remote references can be passed