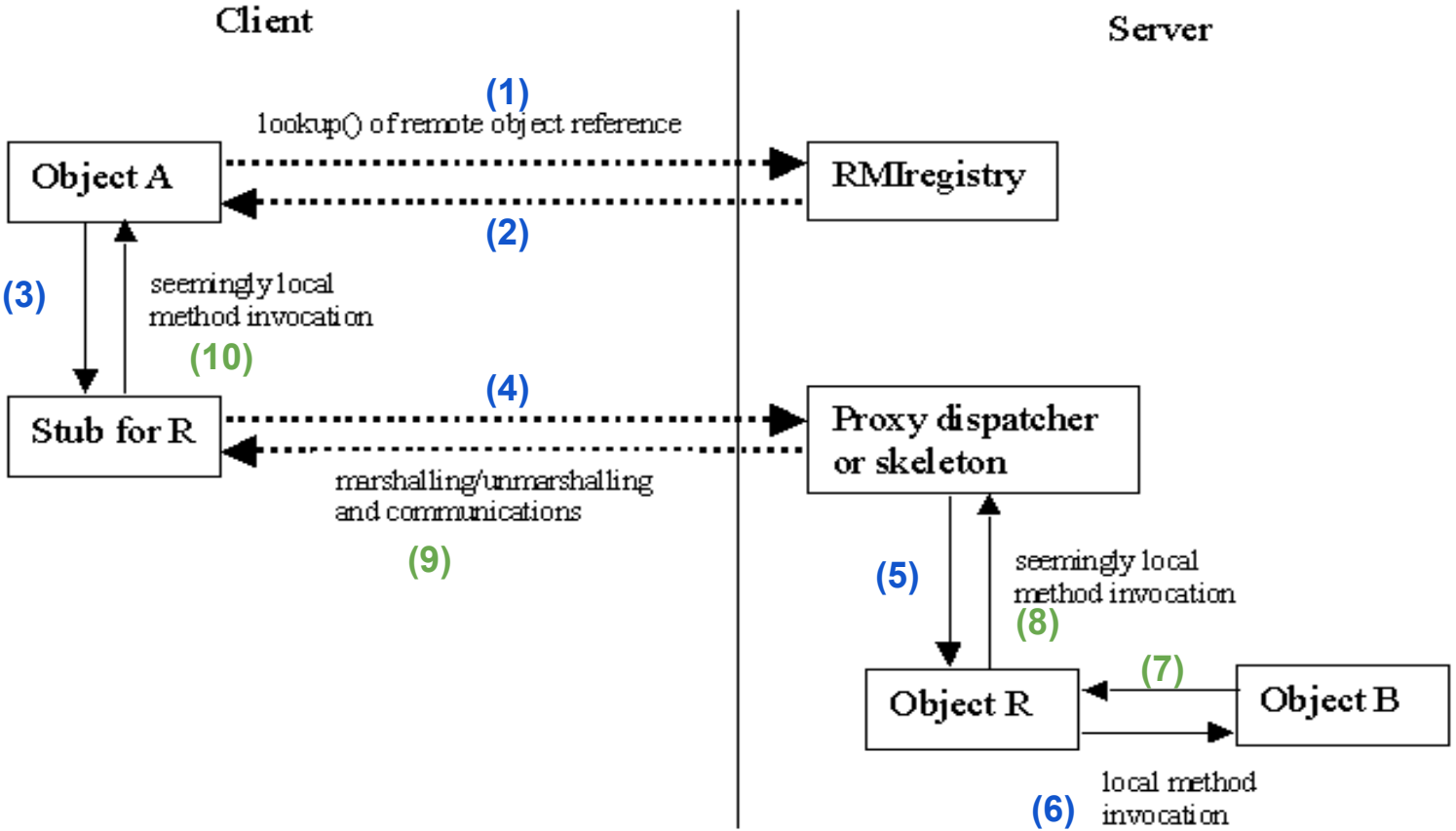
RMI/RPC Project Session

2014 Sep 25

P1 Grading - Comments and Status

- We’re working on it!
- Some common issues:
  - Jar files are not a substitute for build instructions
  - Misnamed handin files
  - Please compile and test your code on GHC/Andrew machines



RMI Overview

Major Components

- Remote object references
- Registry
- Stubs
- Dispatcher/Skeletons
- Client/Server

Remote Object Reference

- The information you need to “find” an object
- All objects which implement “Remote” are passed by reference
- Other objects are passed by value (serialized)

Registry

- bind() - Adds a remote reference for an object to the registry
- lookup() - Gets a remote object reference for an object based on a “name”
- rebind() - Updates a reference in the registry
- unbind() - Removes a reference from the registry

Stubs

- Responsible for marshaling method invocations
- Can be created by a stub compiler or use an invocation handler (optional for you for the RMI)
- Clients need the .class files for the stubs

Dispatcher/Skeletons

- Both are responsible for unmarshaling the method invocation
- Skeletons - like stubs, one for each method
- Dispatcher - single object which can unmarshal any method invocation
- Up to you which to implement

Client/Server

- Client
  - Looks up objects from server
  - Requests remote method invocations
- Server
  - Hosts some objects by adding references to the registry
  - Runs a registry, dispatcher
- Please provide working, runnable examples of a client and a server in your project

Where do I start?

- Do try out using Java RMI first to get an idea of how your library should look (in terms of the interfaces it provides, usage, etc)
- Follow the plan of action presented in the writeup

What is expected

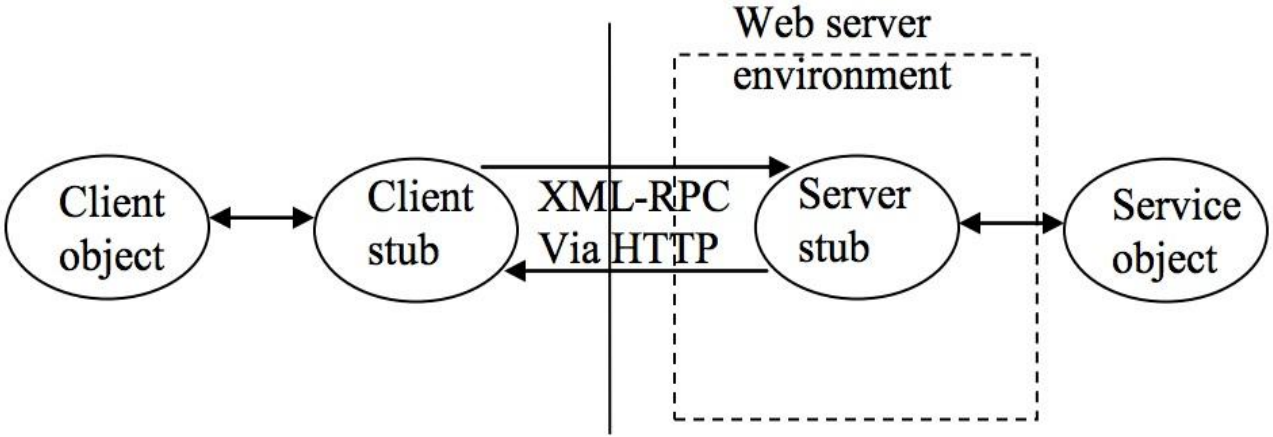
- Remote object references
- Registry
- Dispatcher/Skeletons
- Stubs/Invocation handler
- Example server and client
- A report with instructions on how to run the examples

Report

- Talk about your major design decisions, things that are likely different from project to project. What are the tradeoffs of your decisions?
- Tell us about bugs, unimplemented pieces.
- Tell us how to build, run, test your code. This should work on GHC/Andrew machines. *Please* make this easy for us! :)
- Tell an application programmer how to set up servers and clients using your RMI facility.

What is not required

- Stub compilers
- Mechanism for downloading .class files
- Garbage collection of remote objects


Web server
environment
Client
object
Client
stub
XML-RPC
Via HTTP
Server
stub
Service
object

XML RPC

Other FAQ

- Allowed to work with one partner
- Code can use libraries as long as it does not do RMI/RPC for you ;)
- Report is an important part of your grade

Questions