Lujia Zhang
CSSE 477
CM 1405
Lab4

1. What is the job of Compute and Task interfaces?.

The Compute interface provides a framework for the server to execute and respond to the task. The Task interface provides a framework for a client to submit a task to a server.

2. The Compute interface extends the Remote interface but the Task interface does not. When a client creates these objects, explain how they get sent to the server? [Hint: Slide# 9 .]

In the Client, the broker, or the Registry, finds the compute class based on the agruments given at runtime. Then, in order to compute a task, the client creates a Pi object, which implements the Task interface. Then the compute class calls executeTask on the Pi object.

3. Which object is equivalent to a Broker (of the Broker Architecture) in ComputeEngine and why?

java.rmi.registry.Registry because it is in charge of storing servers (line 75-78 in ComputeEngine) and looking them up (line 65 in ComputePi).

4. When a client gets hold of a stub of ComputeEngine, which method of the class will be remotely called by the client?

The executeTask method.

5. List all of the high-level steps involved in creating a RMI server object.

The server needs to register itself with the registry by creating a stub from a new instance of that class. Then the server is then mapped to some string determined by the class.

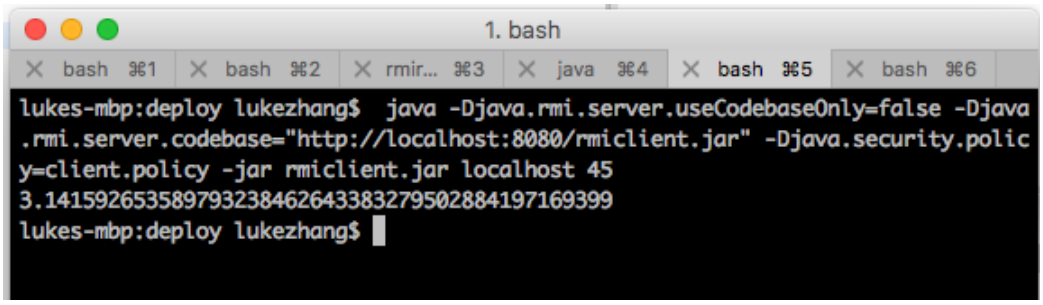
6. List all of the high-level steps involved in creating a RMI client.

The client just needs to connect to the registry and pull the server with the string key

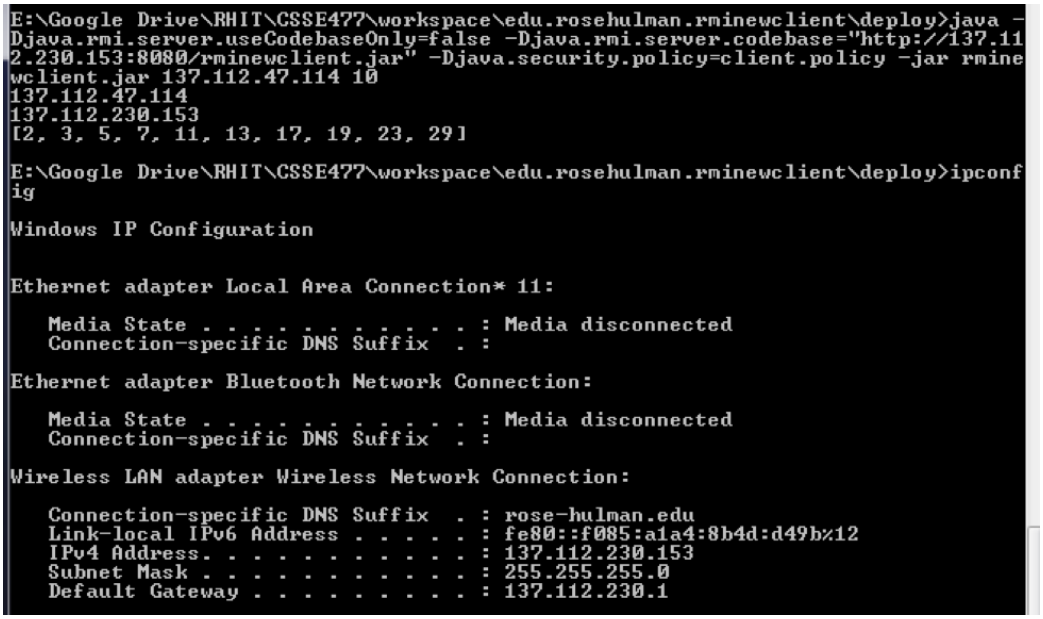
7. Why is the PI class implementing both Task and Serializable interfaces

So it can be broken down, sent over the network, and re-established.

Screen shot of Running the RMI Client



Screen shot of Running with other winodws machine, prime number


E:\Google Drive\RHIT\CSSE477\workspace\edu.rosehulman.rminewclient\deploy>java -Djava.rmi.server.useCodebaseOnly=false -Djava.rmi.server.codebase="http://137.112.230.153:8080/rminewclient.jar" -Djava.security.policy=client.policy -jar rminewclient.jar 137.112.47.114 10
137.112.47.114
137.112.230.153
[2, 3, 5, 7, 11, 13, 17, 19, 23, 29]
E:\Google Drive\RHIT\CSSE477\workspace\edu.rosehulman.rminewclient\deploy>ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connection* 11:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Ethernet adapter Bluetooth Network Connection:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Wireless LAN adapter Wireless Network Connection:
Connection-specific DNS Suffix . : rose-hulman.edu
Link-local IPv6 Address . . . . . : fe80::f085:a1a4:8b4d:d49b%12
IPv4 Address. . . . . : 137.112.230.153
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 137.112.230.1