OpcUaServerWrapper

PC

Controller

OPC UA

Telnet

CN2

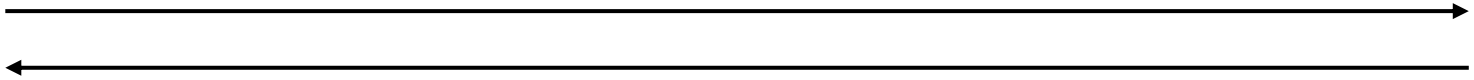
runs our software

Raspberry Pi

Robot

Telnet example (ASCII encoding)

‘1;1;TIME’



response info

‘QoK04-02-0917:54:32’

response status

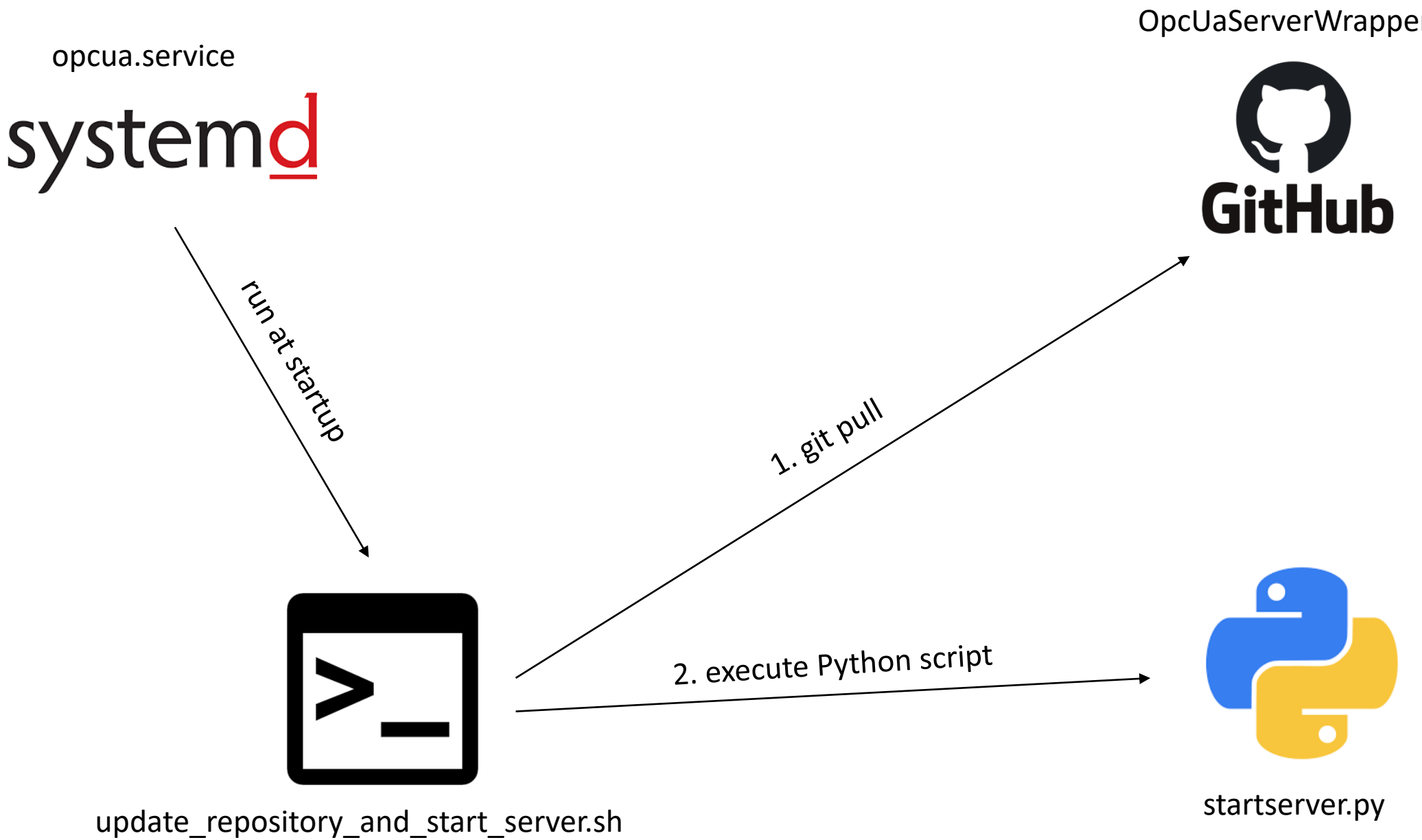
OR

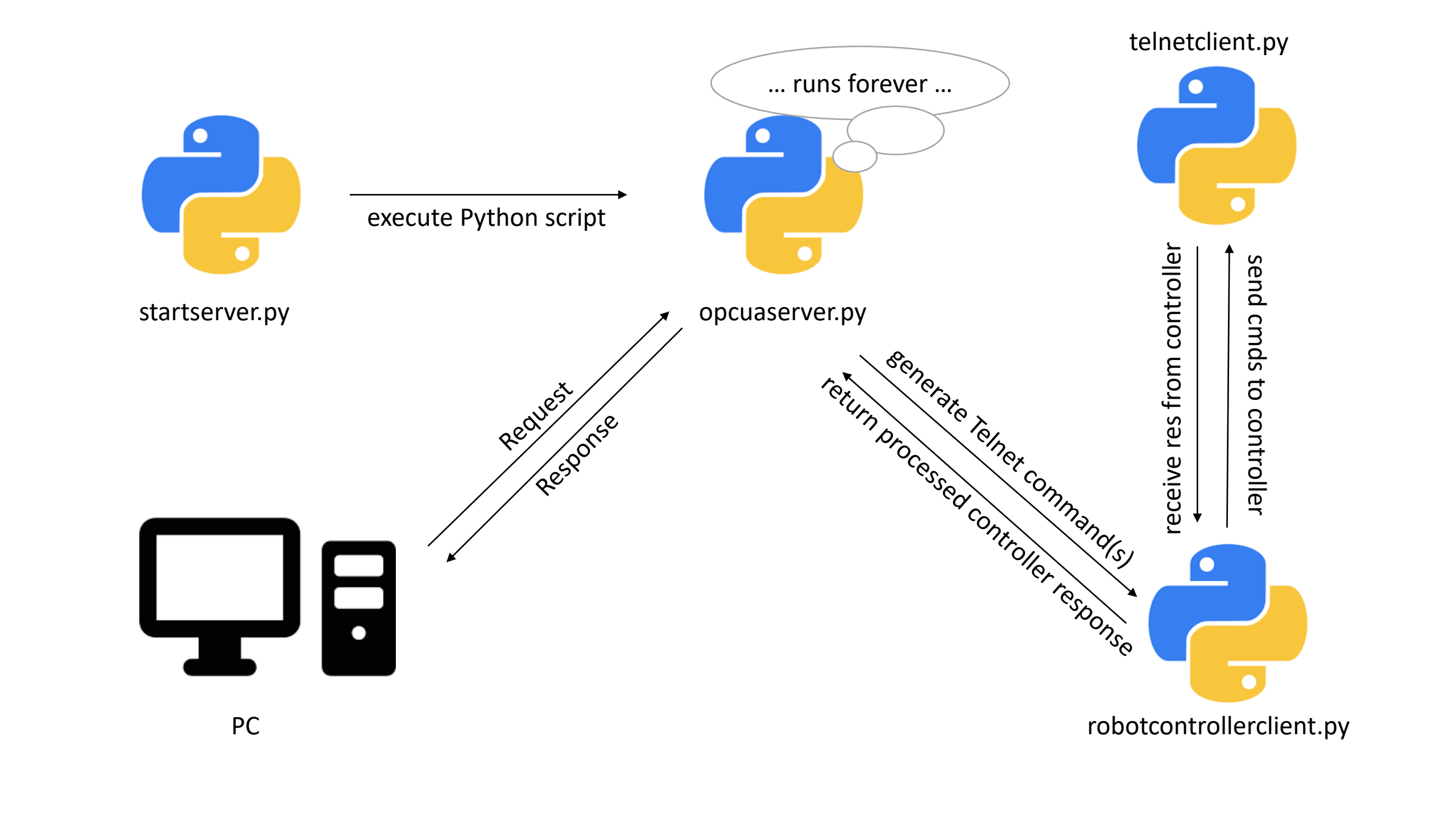
‘QeR4220000’

error code

our software is hosted on a public GitHub repo

git clone https://github.com/Oidlichtnwoada/OpcUaServerWrapper.git


opcua.service
systemd
OpcUaServerWrapper.git
GitHub
run at startup
1. git pull
2. execute Python script
update_repository_and_start_server.sh
startserver.py


telnetclient.py
… runs forever …
execute Python script
startserver.py
opcuaserver.py
Request
Response
generate Telnet command(s)
return processed controller response
receive res from controller
send cmds to controller
PC
robotcontrollerclient.py

used open-source Python OPC UA library

git clone https://github.com/FreeOpcUa/python-opcua.git

OPC UA method name	NodeId	Description
ReadInput(Index)	ns=4;i=1067	reads the input sensor with the corresponding Index
WriteOutput(Index, Value)	ns=4;i=1111	writes Value to the actuator with the corresponding Index
Move(X,Y,Z,A,B,C)	ns=4;i=1137	move to position (X,Y,Z) with rotation (A,B,C)
OpenGripper()	ns=4;i=1131	open the gripper attached to the robot
CloseGripper()	ns=4;i=1134	close the gripper attached to the robot
GetErrorLog(NumErrorLogs)	ns=4;i=1140	returns the most recent NumErrorLogs errors
ResetError()	ns=4;i=1108	resets the current error present in the controller

Code Walkthrough

Live Demo