FINAL GROUP PROJECT

Saint Louis University
School of Accountancy, Management, Computer, and Information Studies
Baguio City

IT - 222 - Integrative Technologies

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DOCUMENTATION OF THE NON-JAVA CLIENT PROGRAM

I. LANGUAGE USED: Python

II. IDE USED: PyCharm

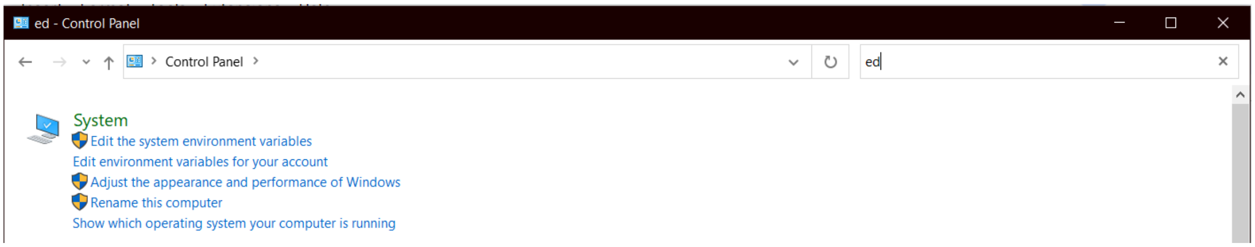
III. INSTALLATION PROCESS

A. Download and installation of the needed softwares for the python implementation.

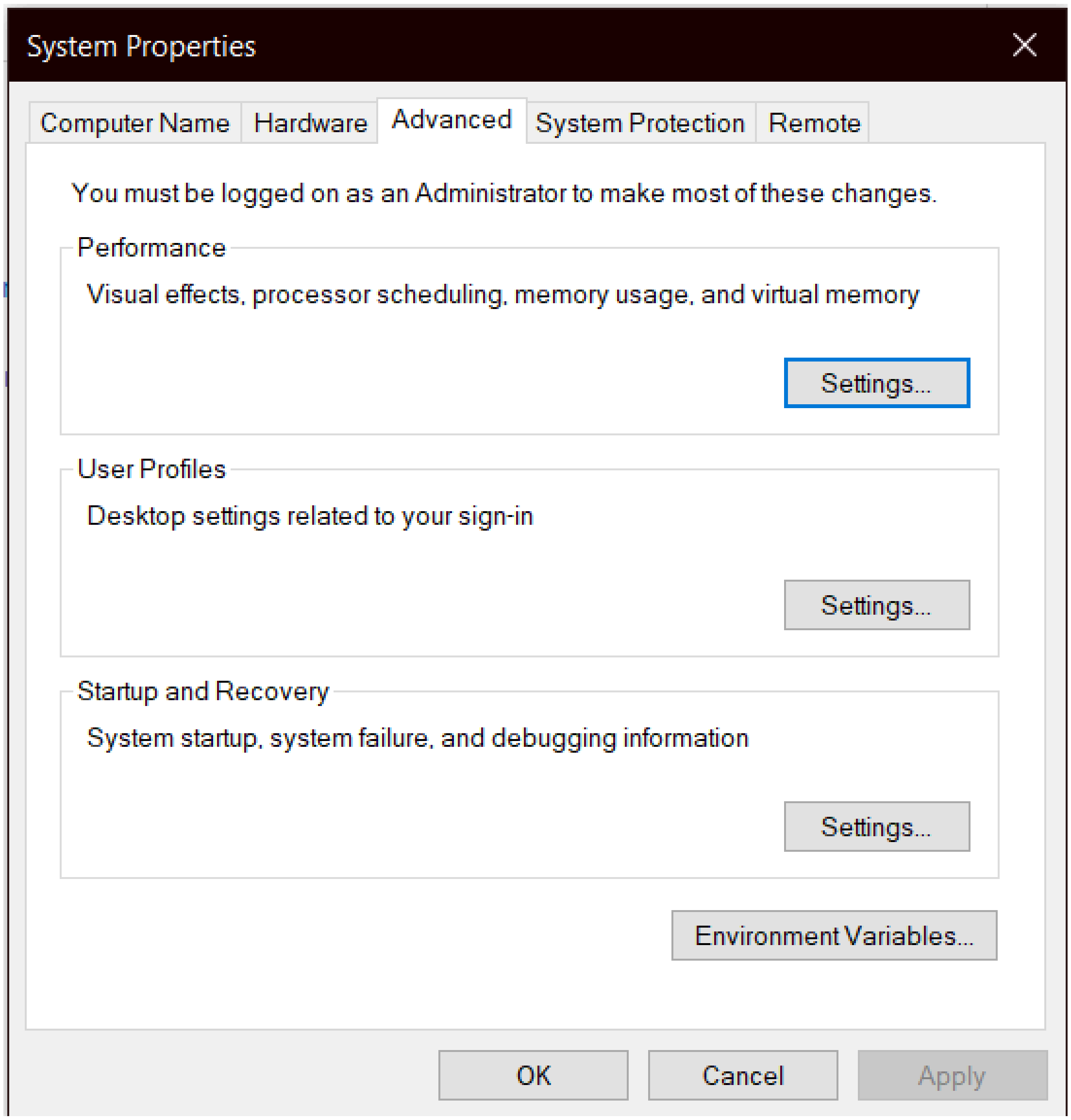
- First, download an IDE, in this case we chose PyCharm as our application which can be downloaded here: https://www.jetbrains.com/pycharm/download/?source=google&medium=cpc&campaign=14127625430&term=pycharm&content=536947779528&gad=1&gclid=Cj0KCQjwmN2iBhCrARIsAG_G2i5Qp0aJREzKXIVUiMUdJZReRmYgRFO29fU-aMZb0X9sk-oQFVAfe-oaAiyXEALw_wcB#section=windows
- Second, download a python executable installer, which is an executable file that runs the Python setup process, the following link was used to follow the process on how to run the pip command: https://www.youtube.com/watch?v=KtxCiaDjQgw
  The python executable installer can be downloaded here: https://www.python.org/downloads/
- Third, download Python310 which can be downloaded here: https://www.dll-files.com/python310.dll.html
- Fourth, download omniORB and omniORBpy for the configuration of the IDL, both should be the same version and download it as zip file. After downloading, extract it under the Program Files directory: https://omniorb.sourceforge.io/

B. Setting the system environment variables

- After successfully downloading all needed materials, go to the Control Panel then in the search bar, type ed. After typing ed, click "Edit the system environmental variables".


ed - Control Panel
Control Panel
ed
System
Edit the system environment variables
Edit environment variables for your account
Adjust the appearance and performance of Windows
Rename this computer
Show which operating system your computer is running

- After clicking, it will show the System Properties window. Click the “Environment Variables”.



You must be logged on as an Administrator to make most of these changes.

Performance

Visual effects, processor scheduling, memory usage, and virtual memory

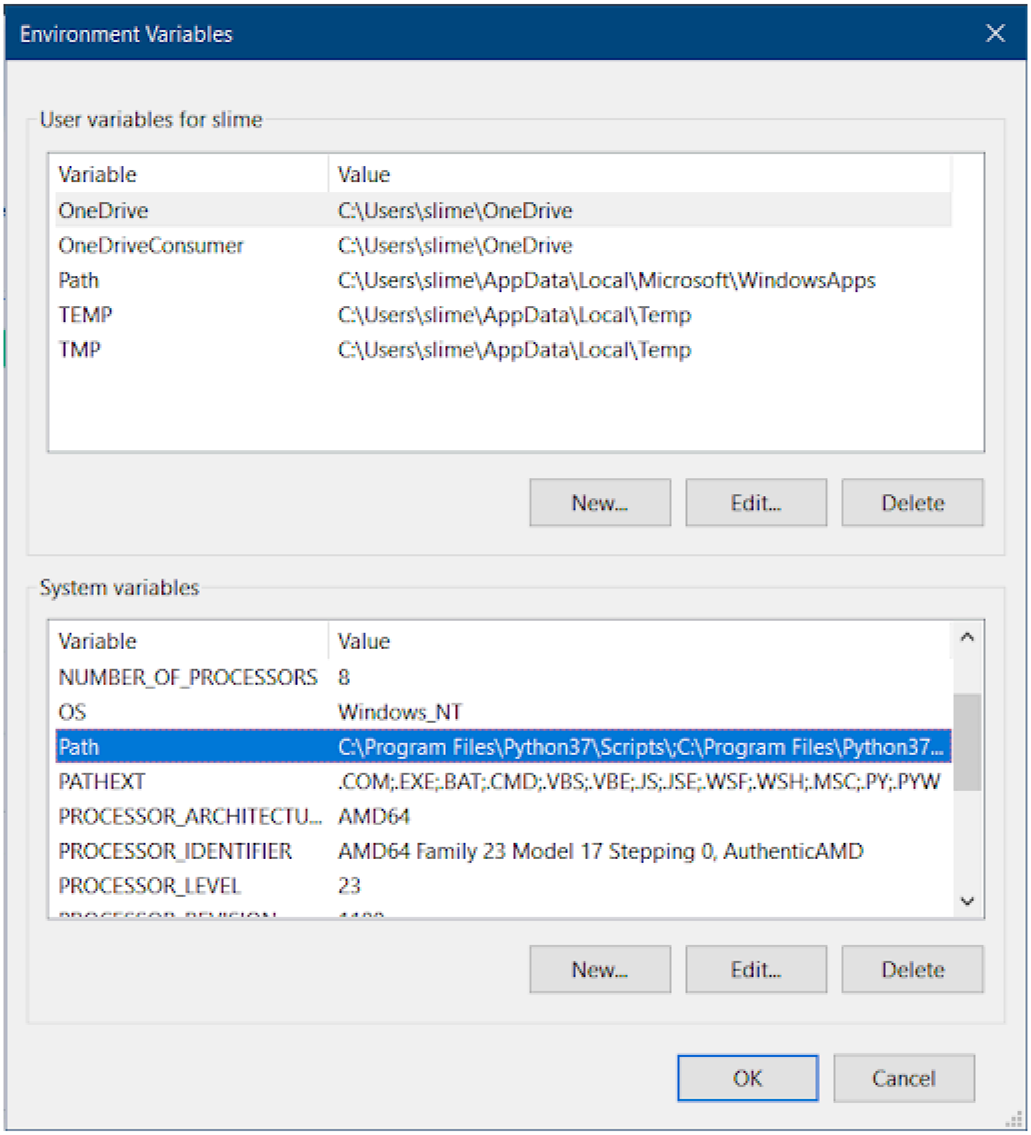
User Profiles

Desktop settings related to your sign-in

Startup and Recovery

System startup, system failure, and debugging information

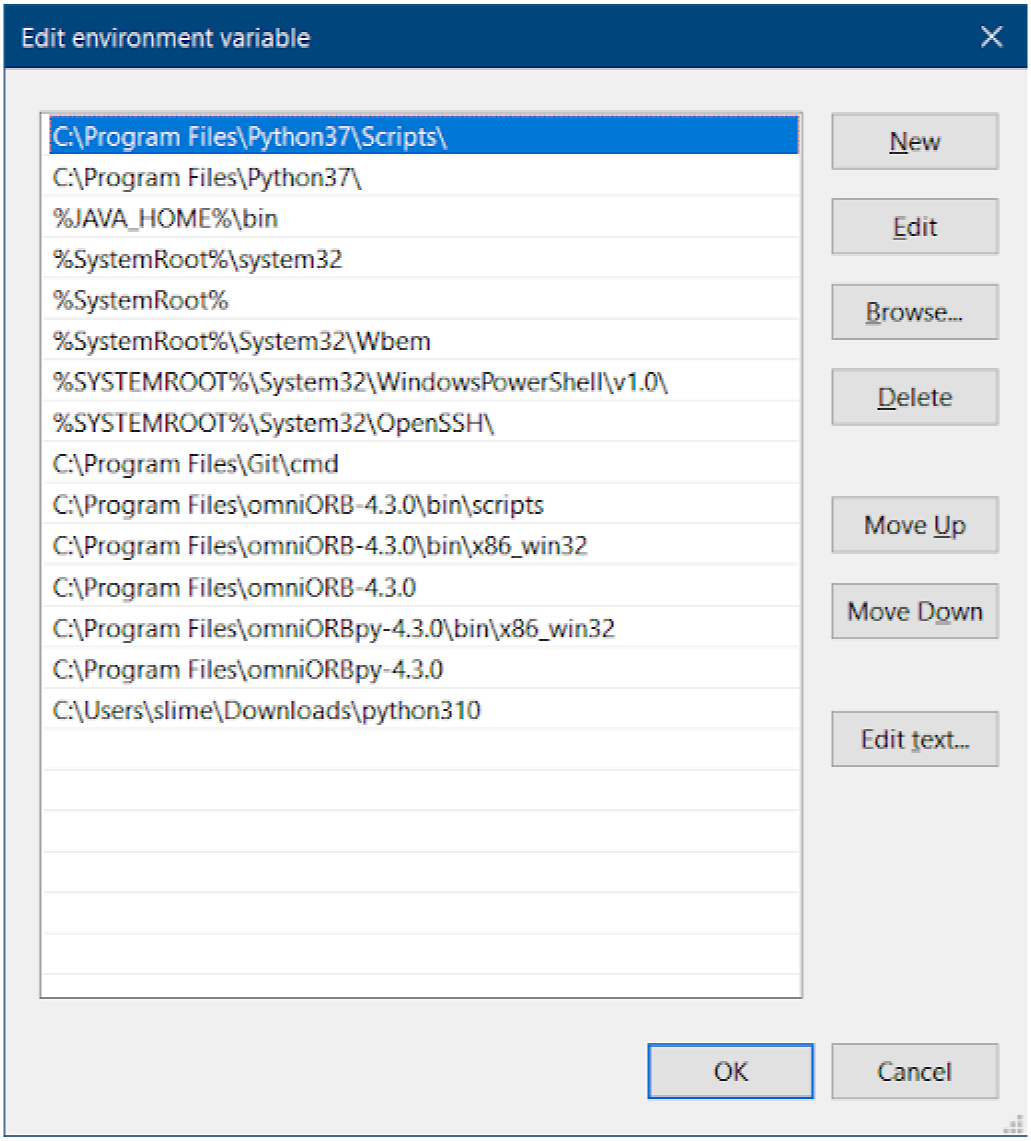
- After clicking, the Environment Variables window will be showed. In this window, creating, editing, and deleting a system variable can be executed. Click Path > Edit to edit your path and set your path to the omniorb and omniorbpy and python310.



Variable	Value
OneDrive	C:\Users\slime\OneDrive
OneDriveConsumer	C:\Users\slime\OneDrive
Path	C:\Users\slime\AppData\Local\Microsoft\WindowsApps
TEMP	C:\Users\slime\AppData\Local\Temp
TMP	C:\Users\slime\AppData\Local\Temp

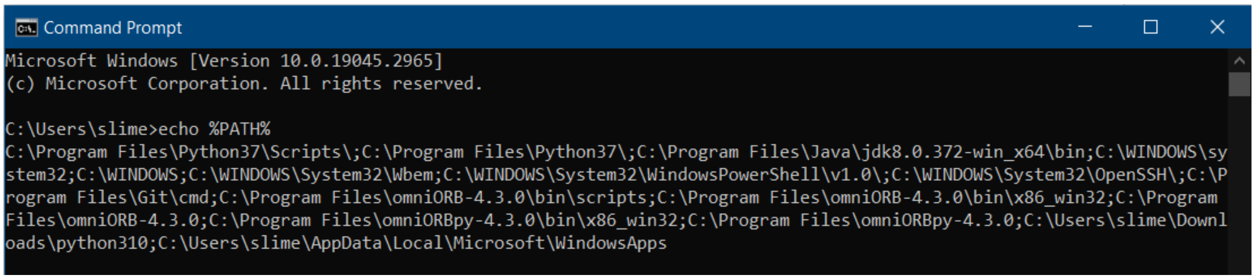
Variable	Value
NUMBER_OF_PROCESSORS	8
OS	Windows_NT
Path	C:\Program Files\Python37\Scripts\;C:\Program Files\Python37...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC;.PY;.PYW
PROCESSOR_ARCHITECTU...	AMD64
PROCESSOR_IDENTIFIER	AMD64 Family 23 Model 17 Stepping 0, AuthenticAMD
PROCESSOR_LEVEL	23

- After adding the downloaded materials in the Path's System Variables, it should look like the photo below.



```
C:\Program Files\Python37\Scripts\
C:\Program Files\Python37\
%JAVA_HOME%\bin
%SystemRoot%\system32
%SystemRoot%
%SystemRoot%\System32\Wbem
%SYSTEMROOT%\System32\WindowsPowerShell\v1.0\
%SYSTEMROOT%\System32\OpenSSH\
C:\Program Files\Git\cmd
C:\Program Files\omniORB-4.3.0\bin\scripts
C:\Program Files\omniORB-4.3.0\bin\x86_win32
C:\Program Files\omniORB-4.3.0
C:\Program Files\omniORBpy-4.3.0\bin\x86_win32
C:\Program Files\omniORBpy-4.3.0
C:\Users\slime\Downloads\python310
```

- To check if the variables were set up correctly, open the command prompt and use the command **"echo %PATH%".** As you can see below, the variables were set up correctly

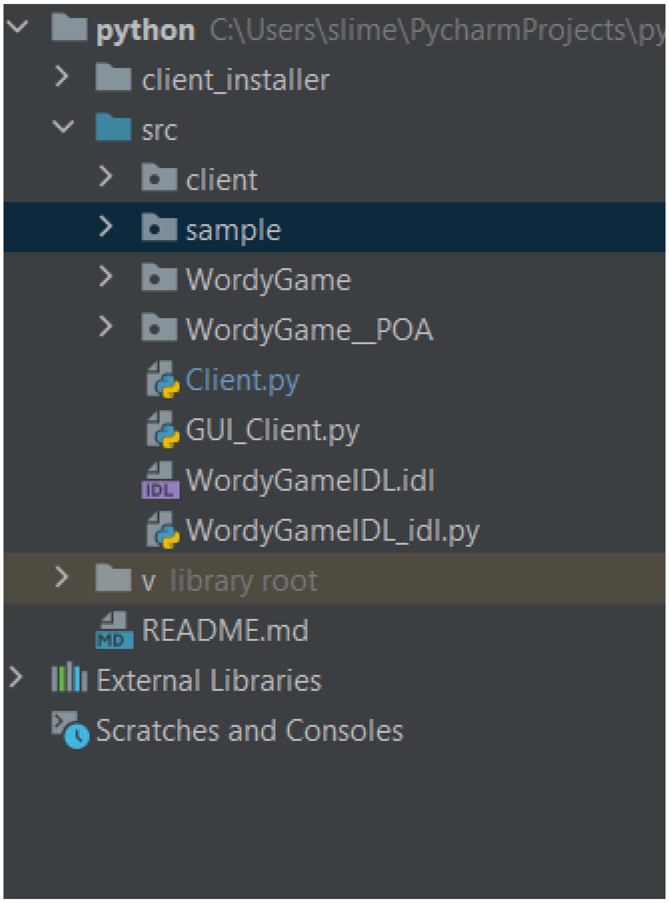


```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\slime>echo %PATH%
C:\Program Files\Python37\Scripts\;C:\Program Files\Python37\;C:\Program Files\Java\jdk8.0.372-win_x64\bin;C:\WINDOWS\sy
stem32;C:\WINDOWS;C:\WINDOWS\System32\Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\WINDOWS\System32\OpenSSH\;C:\P
rogram Files\Git\cmd;C:\Program Files\omniORB-4.3.0\bin\scripts;C:\Program Files\omniORB-4.3.0\bin\x86_win32;C:\Program
Files\omniORB-4.3.0;C:\Program Files\omniORBpy-4.3.0\bin\x86_win32;C:\Program Files\omniORBpy-4.3.0;C:\Users\slime\Downl
oads\python310;C:\Users\slime\AppData\Local\Microsoft\WindowsApps
```

C. pip command implementation and idl compilation

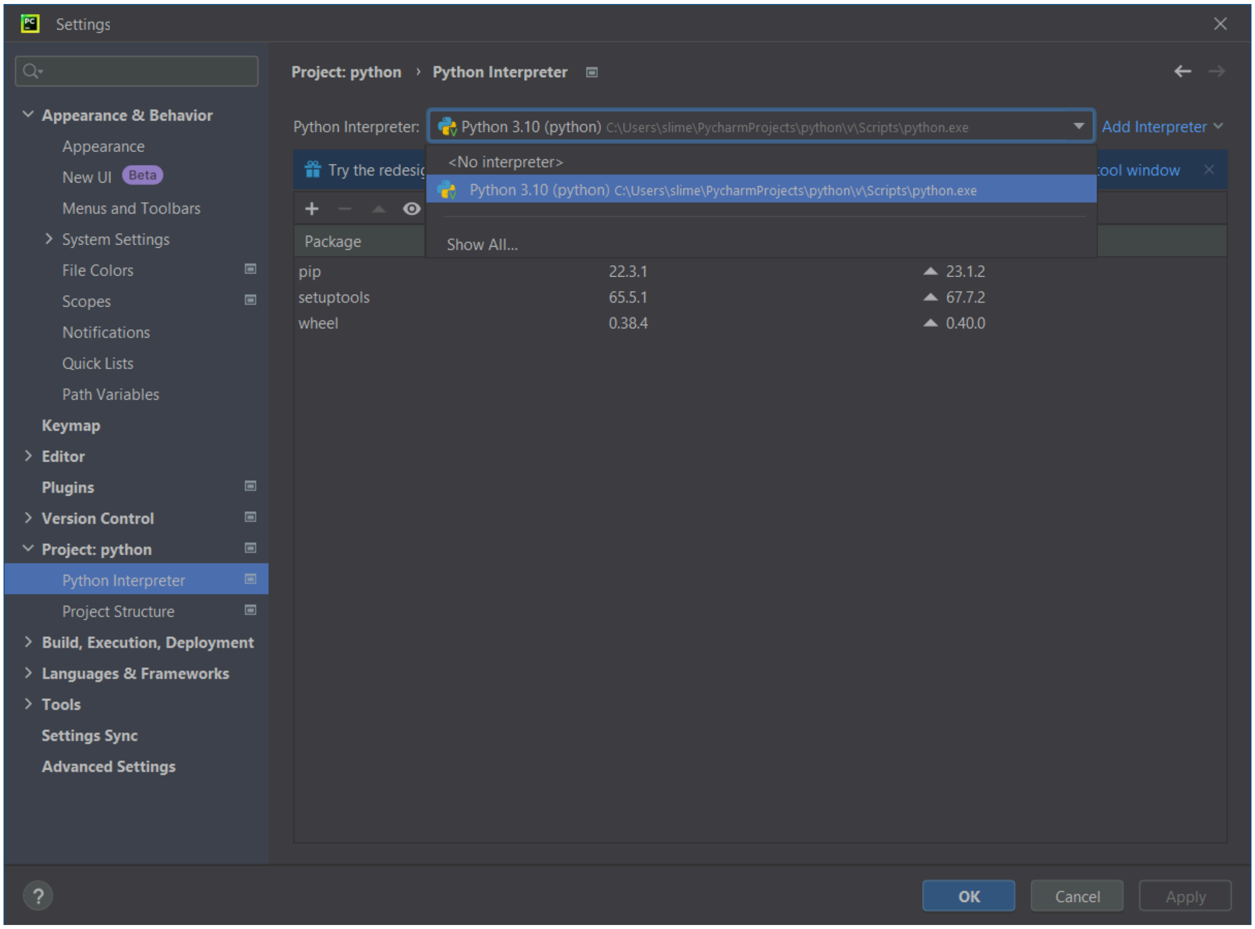
- After setting your variables, open the command prompt to test to see if it successfully downloaded the executable installer of python to use the command **“pip”.**
- If it showed no error, type the command **"pip install omniidl"** then **"pip install omniORB"** to compile the IDL into the python language.
- After installing the omniidl and omniORB, go to the path of the idl in your pycharm project folder then use this command to compile idl to python: **"omniidl -bpython WordyGameIDL.idl"**
- After compiling the IDL into python, it is time to make and arrange the directories in the program.



```
python  C:\Users\slime\PycharmProjects\py
  client_installer
  src
    client
    sample
    WordyGame
    WordyGame__POA
    Client.py
    GUI_Client.py
    WordyGameIDL.idl
    WordyGameIDL_idl.py
  v  library root
  README.md
External Libraries
Scratches and Consoles
```

- Make the src directory as your source directory and arrange your packages like the photo above. Make sure that the classes that you will be using are outside of these packages so that it would call the needed methods/classes. The “v” library root is where your needed imports are stored.

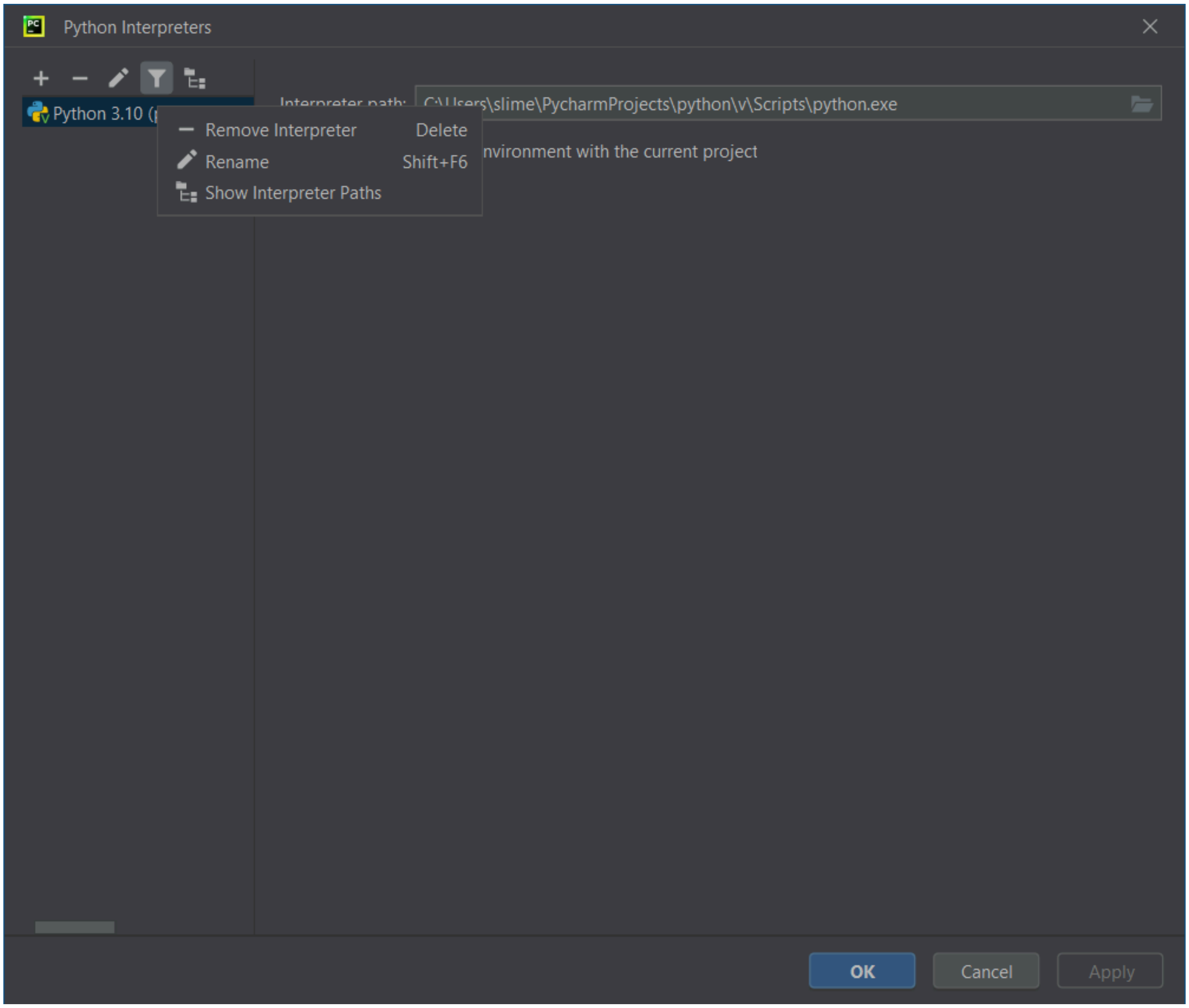
- Press **Ctrl+Alt+S** to open Settings and go to Project: <project name> | Python Interpreter.



Python Interpreter: Python 3.10 (python) C:\Users\slime\PycharmProjects\python\v\Scripts\python.exe

Package		
pip	22.3.1	▲ 23.1.2
setuptools	65.5.1	▲ 67.7.2
wheel	0.38.4	▲ 0.40.0

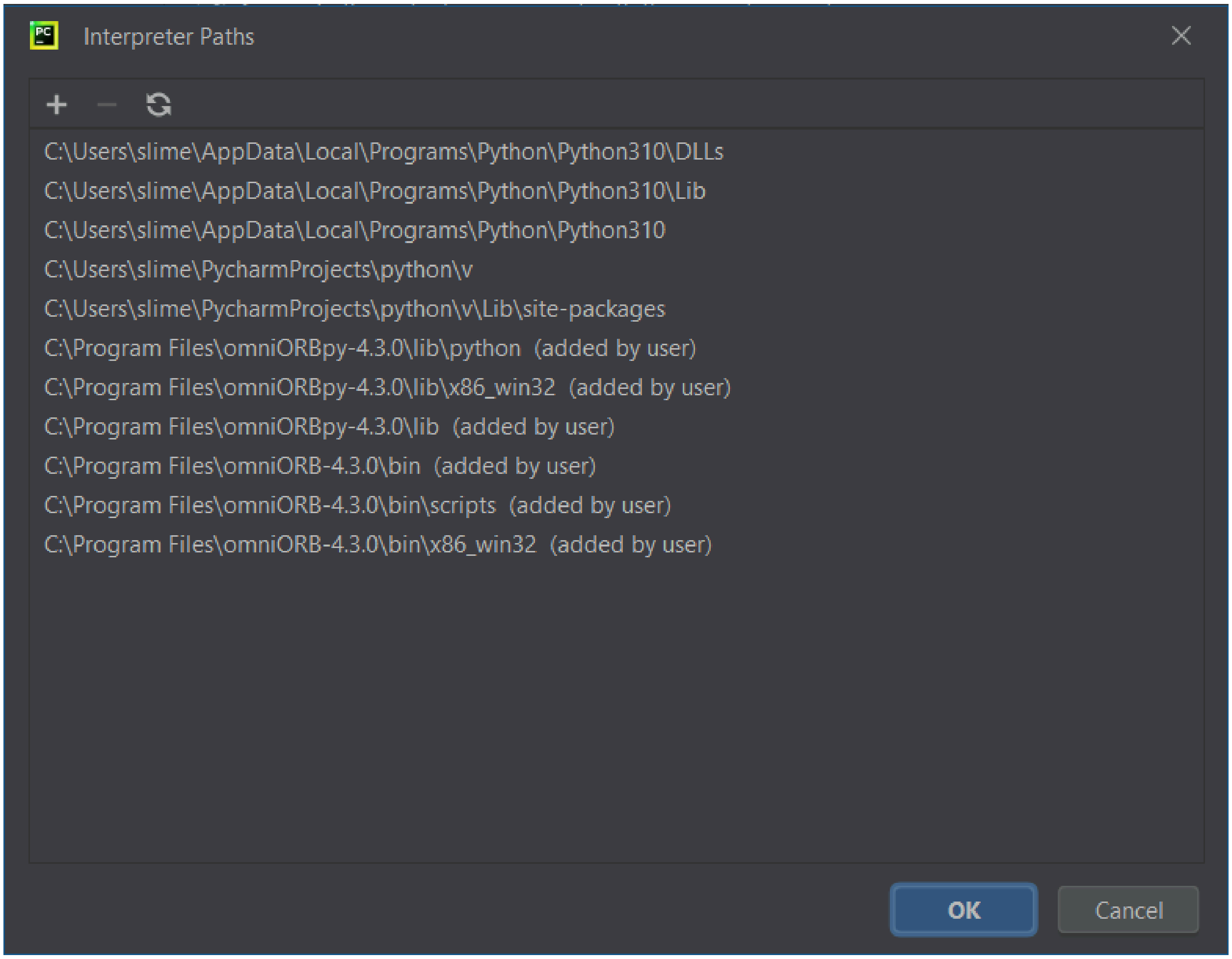
- Click the **“Show All”** and you will be directed to the Python Interpreters window. Right click the installed Python in your Python Interpreter. And click **“Show Interpreter Paths”.**



Interpreter path: C:\Users\slime\PycharmProjects\python\v\Scripts\python.exe

nvironment with the current project

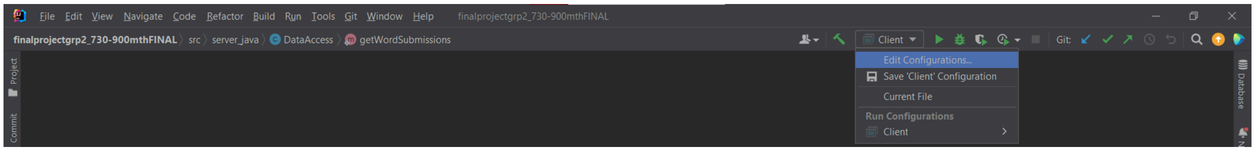
- After clicking, add the needed omniorb files and omniorbpy files. After adding it should look like the photo below.



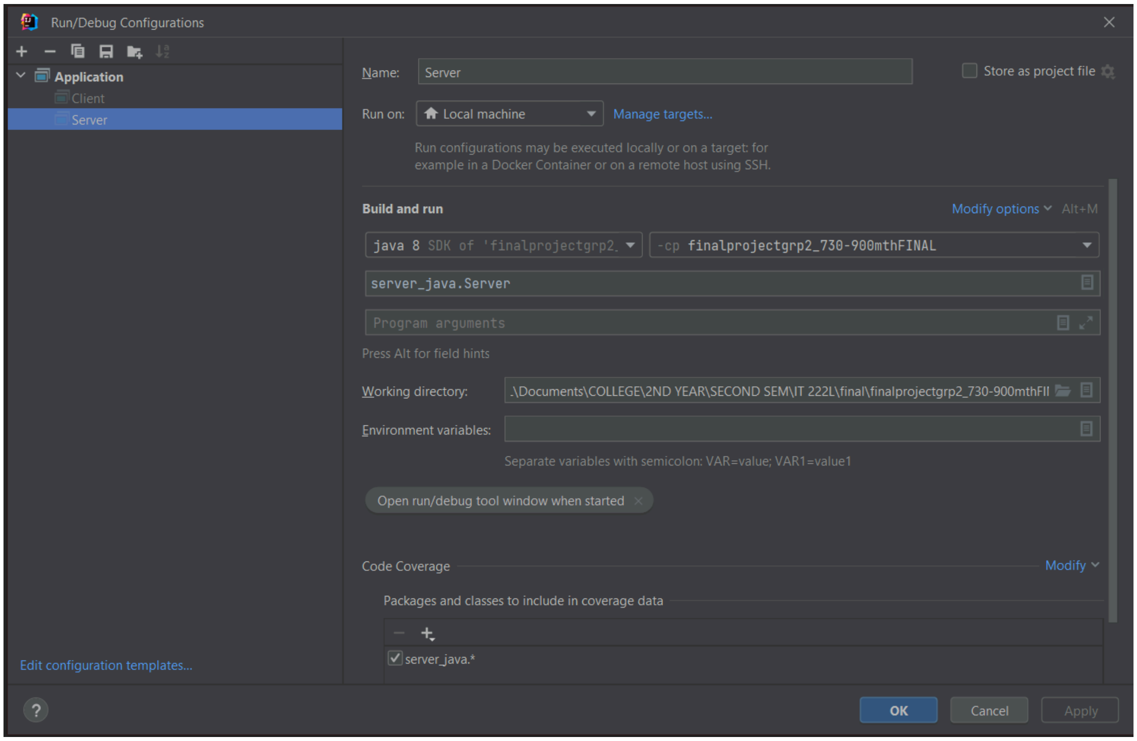
```
C:\Users\slime\AppData\Local\Programs\Python\Python310\DLLs
C:\Users\slime\AppData\Local\Programs\Python\Python310\Lib
C:\Users\slime\AppData\Local\Programs\Python\Python310
C:\Users\slime\PycharmProjects\python\v
C:\Users\slime\PycharmProjects\python\v\Lib\site-packages
C:\Program Files\omniORBpy-4.3.0\lib\python  (added by user)
C:\Program Files\omniORBpy-4.3.0\lib\x86_win32  (added by user)
C:\Program Files\omniORBpy-4.3.0\lib  (added by user)
C:\Program Files\omniORB-4.3.0\bin  (added by user)
C:\Program Files\omniORB-4.3.0\bin\scripts  (added by user)
C:\Program Files\omniORB-4.3.0\bin\x86_win32  (added by user)
```

D. Connection for Server side (Java) and Client side (Python)

- In the Server side (Java) make sure to set to edit your run configuration. To edit your run configuration, navigate to the Toolbar, and find the hammer icon, beside the icon, click the drop down menu then click **“Edit Configurations”.**


File Edit View Navigate Code Refactor Build Run Tools Git Window Help
finalprojectgrp2_730-900mthFINAL
finalprojectgrp2_730-900mthFINAL 〉 src 〉 server_java 〉 DataAccess 〉 getWordSubmissions
Client
Git:
Edit Configurations...
Save 'Client' Configuration
Current File
Run Configurations
Client
Project
Commit
Database

- After clicking, the Run/Debug Configurations window will be showed, where you can set the program arguments to **-ORBInitialHost <hostname> -ORBInitialPort <port number> -port <port number>**. Then click Apply > OK. *Note that the ports are created by the programmer, make sure to put your desired port number. In this case, port number 10000 is used.


Name: Server

Run on: Local machine

Run configurations may be executed locally or on a target: for example in a Docker Container or on a remote host using SSH.

Build and run

java 8 SDK of 'finalprojectgrp2_

-cp finalprojectgrp2_730-900mthFINAL

server_java.Server

Program arguments

Press Alt for field hints

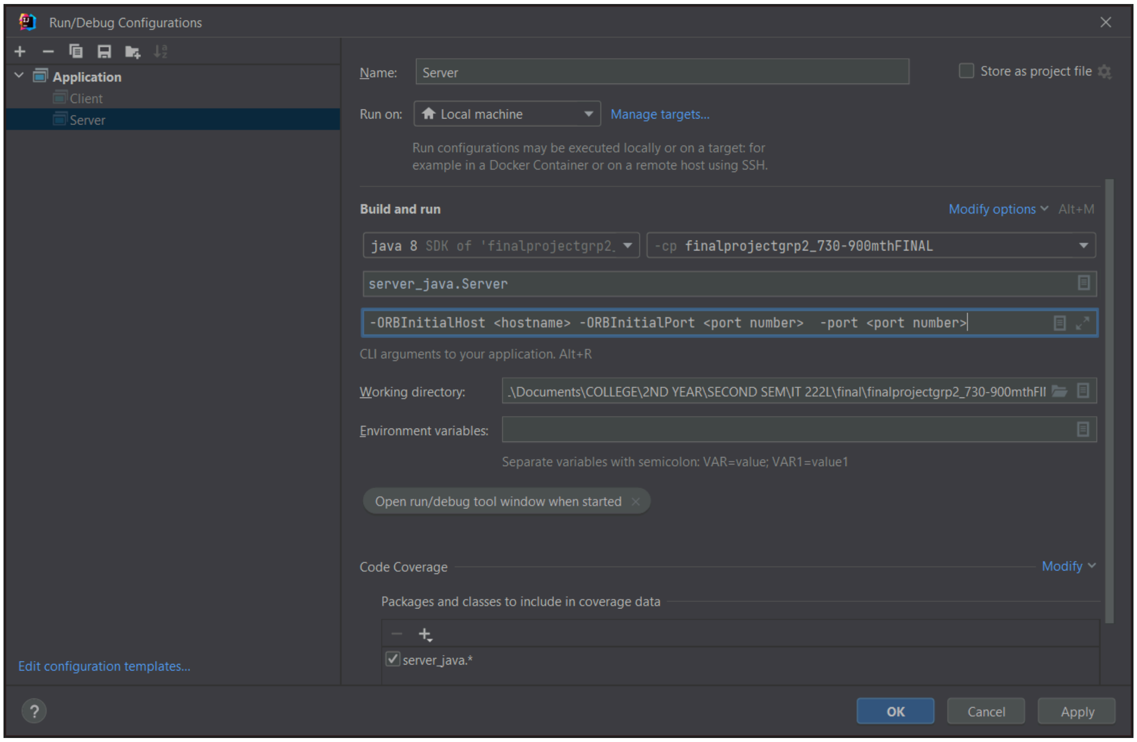
Working directory: .\Documents\COLLEGE\2ND YEAR\SECOND SEM\IT 222L\final\finalprojectgrp2_730-900mthFII

Environment variables:

Separate variables with semicolon: VAR=value; VAR1=value1

Packages and classes to include in coverage data

☑ server_java.*



Name: Server

□ Store as project file

Run on: Local machine ▾ Manage targets...

Run configurations may be executed locally or on a target: for example in a Docker Container or on a remote host using SSH.

Build and run

Modify options ⌄ Alt+M

```
java 8 SDK of 'finalprojectgrp2_
-cp finalprojectgrp2_730-900mthFINAL
server_java.Server
-ORBInitialHost <hostname> -ORBInitialPort <port number>  -port <port number>
```

CLI arguments to your application. Alt+R

Working directory: .\Documents\COLLEGE\2ND YEAR\SECOND SEM\IT 222L\final\finalprojectgrp2_730-900mthFII

Environment variables:

Separate variables with semicolon: VAR=value; VAR1=value1

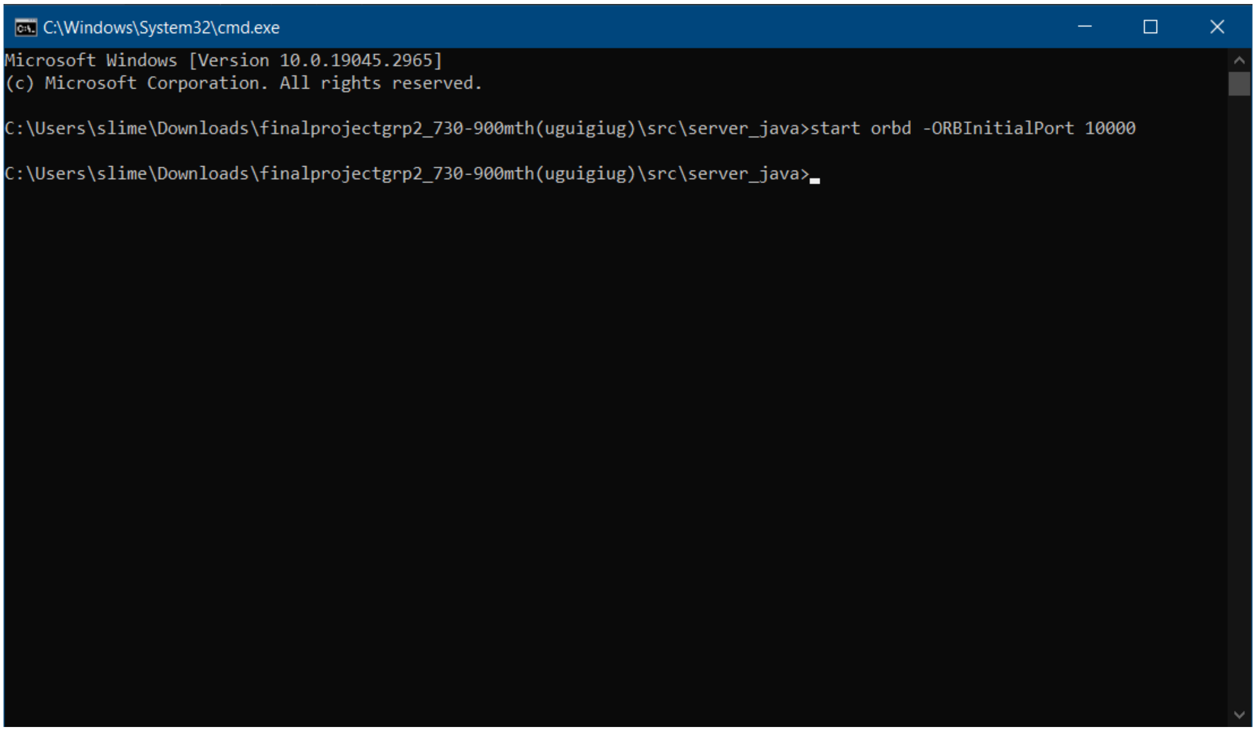
Open run/debug tool window when started ×

Code Coverage — Modify ⌄

Packages and classes to include in coverage data

☑ server_java.*

- After setting the program arguments, open command prompt and type the command "**start orbd -ORBInitialPort <port number>".**
  *Note that the ports are created by the programmer, make sure to put your desired port number. In this case, port number 10000 is used.

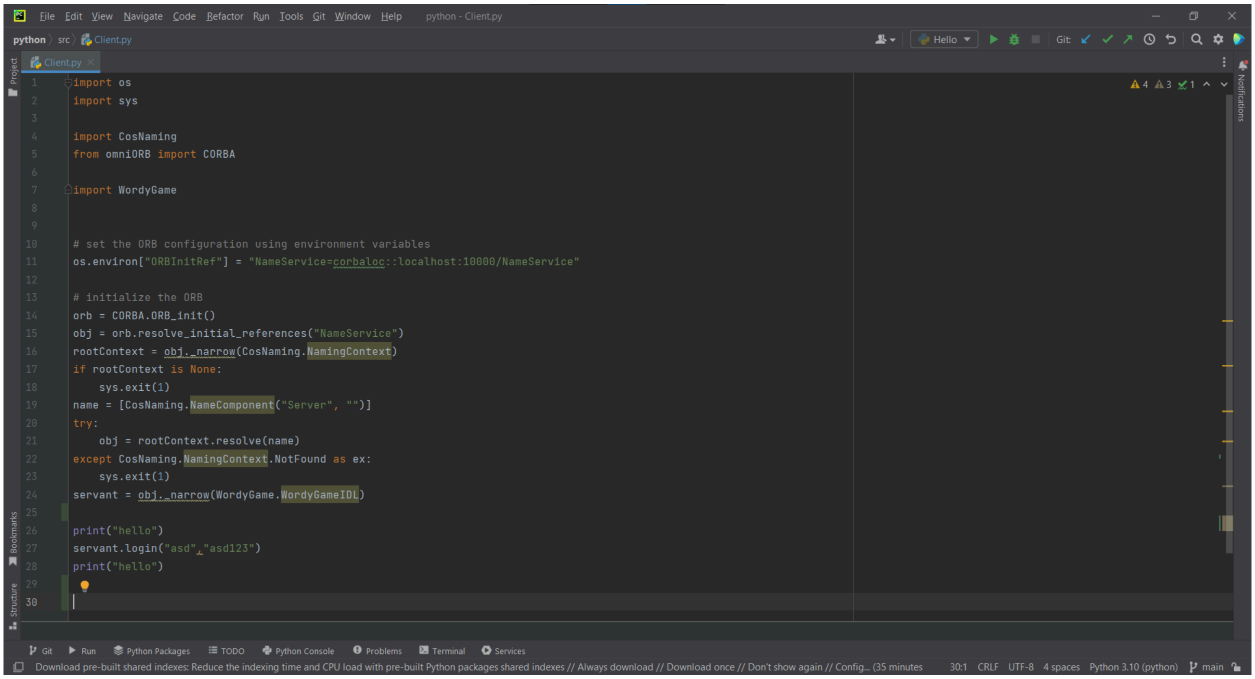


```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\slime\Downloads\finalprojectgrp2_730-900mth(uguigiug)\src\server_java>start orbd -ORBInitialPort 10000

C:\Users\slime\Downloads\finalprojectgrp2_730-900mth(uguigiug)\src\server_java>
```

- After setting up the server side (Java), the client-side (Python) should have the argument: **os.environ["ORBInitRef"]="NameService=corbaloc::localhost:10000/NameService".**
  *Note that there is no need to modify its configuration since the nameservice is in the code itself, proceed on running the code.



```python
import os
import sys

import CosNaming
from omniORB import CORBA

import WordyGame


# set the ORB configuration using environment variables
os.environ["ORBInitRef"] = "NameService=corbaloc::localhost:10000/NameService"

# initialize the ORB
orb = CORBA.ORB_init()
obj = orb.resolve_initial_references("NameService")
rootContext = obj._narrow(CosNaming.NamingContext)
if rootContext is None:
    sys.exit(1)
name = [CosNaming.NameComponent("Server", "")]
try:
    obj = rootContext.resolve(name)
except CosNaming.NamingContext.NotFound as ex:
    sys.exit(1)
servant = obj._narrow(WordyGame.WordyGameIDL)

print("hello")
servant.login("asd","asd123")
print("hello")

```

Download pre-built shared indexes: Reduce the indexing time and CPU load with pre-built Python packages shared indexes // Always download // Download once // Don't show again // Config... (35 minutes

DIFFICULTIES/ISSUES ENCOUNTERED AND HOW THEY WERE RESOLVED

A. Difficulty in installing the needed materials for the python and pycharm IDE.

- **Solution:** Downloaded the needed materials and sought tutorials in properly installing the needed materials for the project.

B. Difficulty in connecting the client class of the python with the server class of the java program.

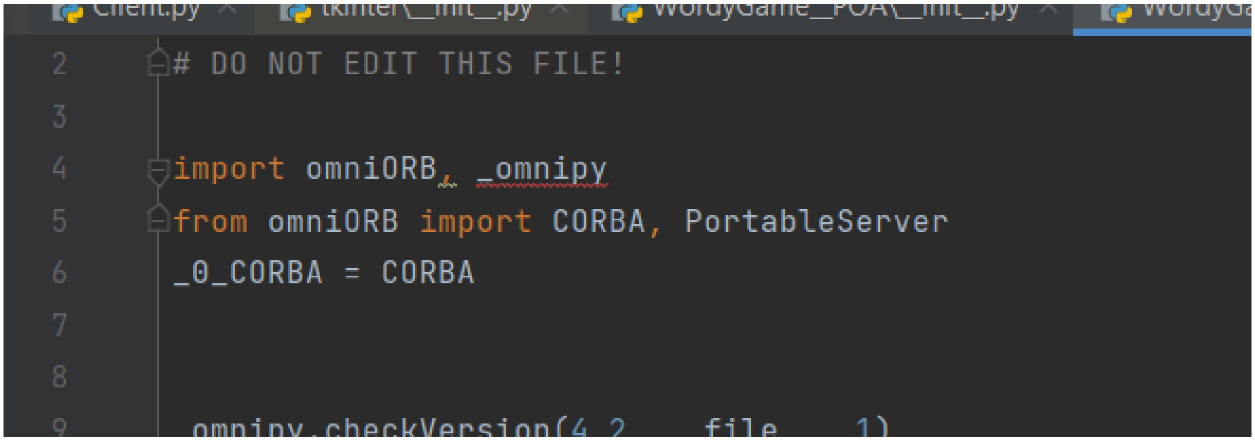
- **Solution:** Added the proper packages in the program interpreter in pycharm. Modified the Client class to connect to the Java Server.

C. Difficulty in setting up the school's computer laboratory since the programmers did not install/download the proper omnipy module.

- **Solution:** The omnipy that we downloaded was the python 3.7 which should've been python 3.10.

D. Error in import statement 'omnipy'.

- **Solution:** The omnipy that we downloaded was the python 3.7 which should've been python 3.10.
  Necessary installation of Modules were needed to make several methods functional.

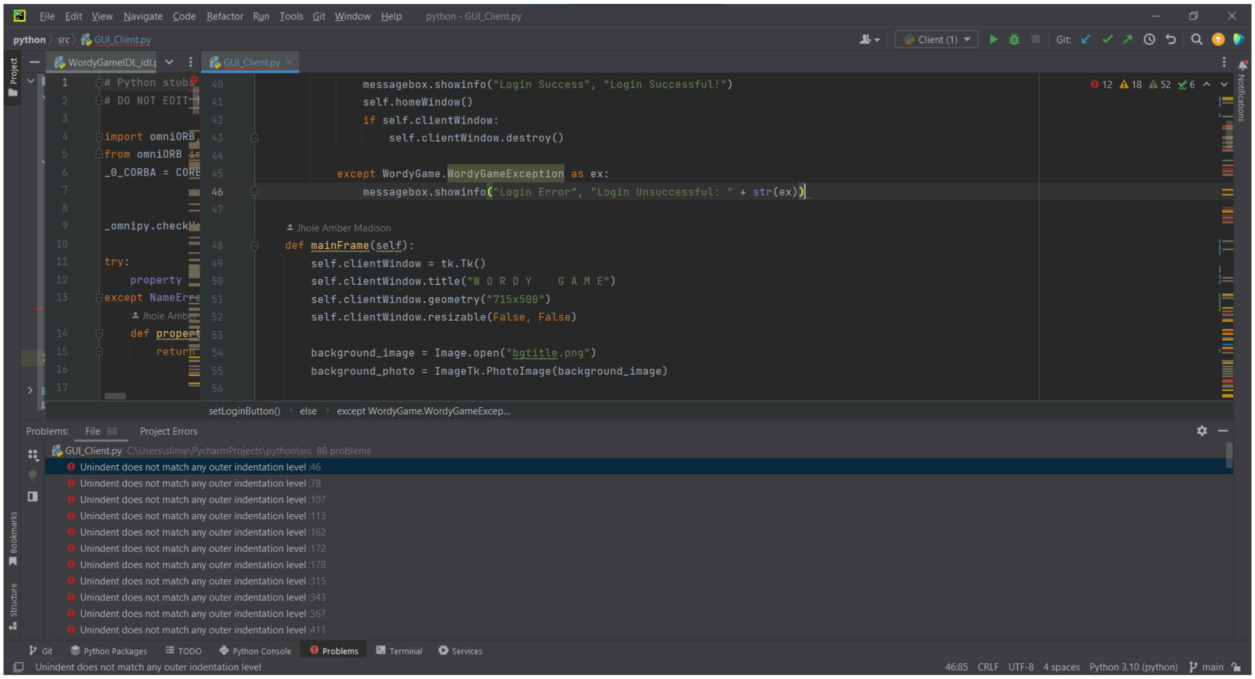


```
# DO NOT EDIT THIS FILE!

import omniORB, _omnipy
from omniORB import CORBA, PortableServer
_0_CORBA = CORBA


_omnipy.checkVersion(4,2, __file__, 1)
```

E. Unindent does not match any outer indentation level.



```
# Python stubs
# DO NOT EDIT

import omniORB,
from omniORB im
_0_CORBA = CORE


_omnipy.checkV

try:
    property
except NameErro
        def propert
            return
```

```
                messagebox.showinfo("Login Success", "Login Successful!")
                self.homeWindow()
                if self.clientWindow:
                    self.clientWindow.destroy()

            except WordyGame.WordyGameException as ex:
                messagebox.showinfo("Login Error", "Login Unsuccessful: " + str(ex))

    def mainFrame(self):
        self.clientWindow = tk.Tk()
        self.clientWindow.title("W O R D Y    G A M E")
        self.clientWindow.geometry("715x500")
        self.clientWindow.resizable(False, False)

        background_image = Image.open("bgtitle.png")
        background_photo = ImageTk.PhotoImage(background_image)
```

Jhoie Amber Madison
setLoginButton() › else › except WordyGame.WordyGameExcep...
Problems: File 88 Project Errors

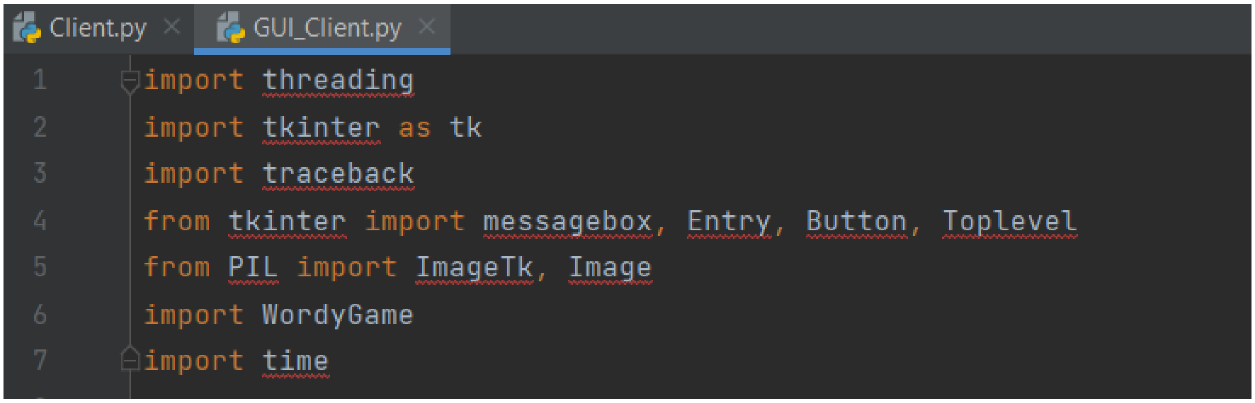
```
GUI_Client.py C:\Users\slime\PycharmProjects\python\src 88 problems
Unindent does not match any outer indentation level :46
Unindent does not match any outer indentation level :78
Unindent does not match any outer indentation level :107
Unindent does not match any outer indentation level :113
Unindent does not match any outer indentation level :162
Unindent does not match any outer indentation level :172
Unindent does not match any outer indentation level :178
Unindent does not match any outer indentation level :315
Unindent does not match any outer indentation level :343
Unindent does not match any outer indentation level :367
Unindent does not match any outer indentation level :411
```

```
Unindent does not match any outer indentation level
46:85 CRLF UTF-8 4 spaces Python 3.10 (python) main
```

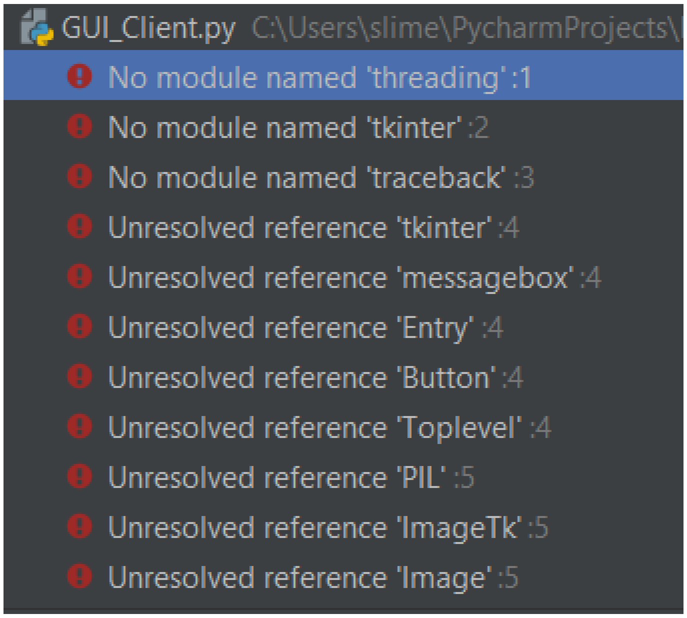
"IndentationError: unindent does not match any outer indentation level" occurs when we mix tabs and spaces in the same code block.

- **Solution: To solve the error, remove the spacing and only use tabs or spaces, but don't mix the two in the same code block.**

F. Import Errors



```
import threading
import tkinter as tk
import traceback
from tkinter import messagebox, Entry, Button, Toplevel
from PIL import ImageTk, Image
import WordyGame
import time
```



```
GUI_Client.py  C:\Users\slime\PycharmProjects\
    No module named 'threading' :1
    No module named 'tkinter' :2
    No module named 'traceback' :3
    Unresolved reference 'tkinter' :4
    Unresolved reference 'messagebox' :4
    Unresolved reference 'Entry' :4
    Unresolved reference 'Button' :4
    Unresolved reference 'Toplevel' :4
    Unresolved reference 'PIL' :5
    Unresolved reference 'ImageTk' :5
    Unresolved reference 'Image' :5
```

- **Solutions: Simply install its packages.**