

Problem Solving Session

- The remainder of today's class will comprise the **problem solving session (PSS)**.
- Your instructor will divide you into **teams of 3 or 4 students**.
- Each team will **work together** to solve the following problems for the time remaining in today's class.
 - You may work on paper, a white board, or digitally as determined by your instructor.
 - You will submit your solution by pushing it to GitHub before the end of class.
- Your instructor will go over the solution before the end of class.
- If there is any time remaining, you will begin work on your homework assignment.



Class participation is a significant part of your grade (20%). This includes in class activities and the problem solving session.

Your graders will grade your participation by verifying that you pushed your solutions before the end of the class period each day.

Name: Wendy	Major: Software Engineer
Place of origin: queens nyc	
One interesting fact about me: I play the cello	

Name: Nick	Major: Human Centred Computing
Place of origin: New Jersey	
One interesting fact about me: I've lived in 9 different cities in NJ	

Name: Yousaf	Major: SE
Place of origin: Lahore, Pakistan	
One interesting fact about me: Came to US when I was 4 years old.	

Problem 1

Getting to know your classmates helps to form a community of students and faculty with a shared goal: helping **everyone** to succeed in this course.

Creating a network of friends and colleagues will give you a base of support if you need help on your assignments or developing a better understanding of the material.

Providing help and explaining concepts to your peers is also a **great** way to get a more solid grasp on material. It's a win-win!

Spend some time getting to know your team. Fill out the table to the left with information about each member of your problem solving team.

If you are working digitally and need more space, duplicate this slide.

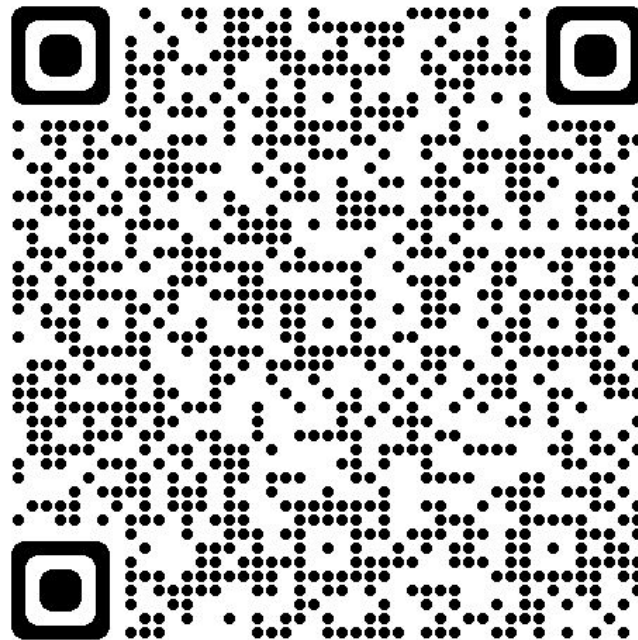
Problem 2

Software Development & Problem Solving is designed for students of **all** levels of experience. There are students in this classroom with little or no programming experience, students who have been coding for years, and every skill level in between.

Spend a few minutes talking with your team members about your prior experience with programming (in any language, not just Python).

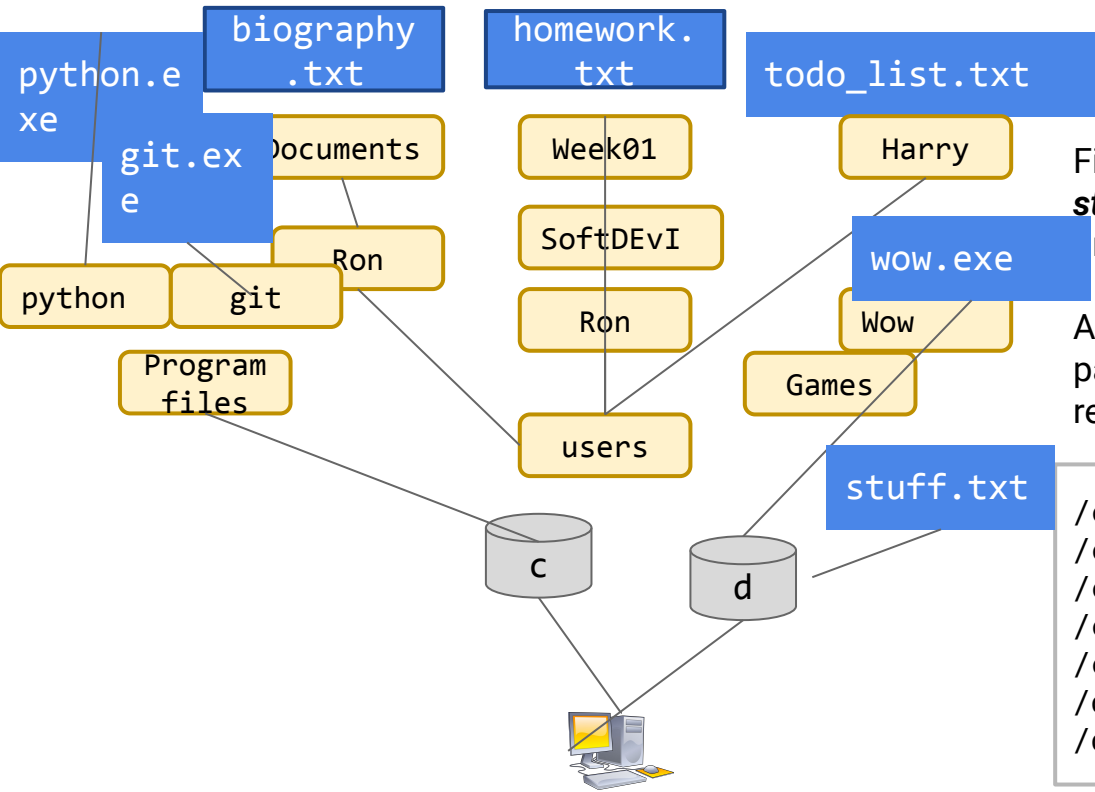
Rate yourselves on a scale of **0** (very little or no experience) to **10** (you should be teaching this class!).

Use [this Google form](#) to tell us about your prior experience. The results will be shared anonymously on the course Discord server.



You will be required to log into your RIT Google account to access the form.

Problem 3



Files in the file system are organized into a **tree structure**. Visualizing this structure can make finding files and directories more intuitive.

Assume that each of the following is an absolute path to a file in your file system. Draw the tree that represents the structure in the space on the left.

```
/c/Users/Ron/Documents/biography.txt
/c/Users/Ron/SoftDevI/Week01/homework.txt
/c/Users/Harry/todo_list.txt
/c/Program Files/Python/python.exe
/c/Program Files/Git/git.exe
/d/Games/Wow/wow.exe
/d/stuff.txt
```

Your instructor will determine if you should work digitally, on paper, or on a whiteboard. Use the icons to the left as references.

Problem 4

Understanding the status of the files in your repository is important! Have you made changes to any files that need to be committed? What has been added, modified, deleted, or staged since your last commit?

Consider the following commands executed in a Git repository on your computer. Together with your team, describe the status of the file at each step.

1. `vi new_file.txt`
2. `git add new_file.txt`
3. `git commit -m "adding a new file"`
4. `git push`
5. `vi new_file.txt (add text)`

1.Create a new text file

2.adding the new_file.txt into the staging area

3. Add a comment in git

4.Pushing a file into a repository

5.Adding text in the created file

1. To make sure all the files are in the correct state and they are not interfering with anything. Also so you know what state the files are in (git status).

2. Make sure you are in the git repository and go through the git workflow (add, commit, push) and submit the 1st version of the file to the repo to save any progress and the file.

3. The last thing you should do is go through the git workflow (add, commit, push) to make sure what you worked on is saved and available in the repo to avoid any conflicts when coming back from break.

4. First thing you should do is make a new directory and git clone your repo from github to get all your files and stuff available on that computer you are using.

Problem 5

Proper use of version control means understanding **why** we use it and not just memorizing **how** to use it.

Discuss the following questions with your team, and type or write your answers in the space on the right.

1. Why do you think that it is a good idea to check the status before staging files?
2. When starting a brand new assignment, what is the first thing you should do, and why?
3. What is the last thing that you should do before taking a break from working?
4. Assume that you are getting back to work on a different computer. What is the first thing you should do?

Problem 6

Making and overcoming mistakes is an essential part of problem solving.

Talk with your team and identify **at least three mistakes** that you made and overcame throughout any of the class activities or homework assignments in this unit. Did any of you make the same kind of mistake?

Be sure to describe specifically what you did to overcome each mistake. Did you look up the solution in the slides? Ask for help on the Discord server? Go to office hours? Something else?

1. Mistyping the commands because typing too fast. Solved by slowing down.

2. Git clone issues and github issues... got help by CA, professor, discord.

3. File issues?? Using VI or trying to copy, move, remove, files, etc. Solved in class, discord.

4. I was accidentally not in the repository file on the command line. I asked the professor for help

Commit token ... this string of letters and numbers is a unique token for each commit made in git. Can be useful to get back to different versions of the file using git restore or git checkout, etc.

Author ... this is the name of the creator of the repo and who committed the file, etc. Shows the full name/username and the email associated with it. Useful to determine who made the commit and their email to contact them, etc.

Date ... shows when the commit was made/done, time as well... Useful to determine when the commit was made and at what exact time it was done.

Comment of commit ... shows the comment made with the commit (git commit -m "..."), Can be useful to determine what the commit was for and what it has.

Problem 7

Each entry in a Git log contains 4 pieces of information.

Describe each piece of information and under which circumstances it might be useful.

Consider how the usefulness of the log would be affected by the frequency of commits and the quality of the comments that you use when you commit to the repository.

Problem 8

Together with your team, brainstorm a solution for each of the situations/problems listed to the left.

If you finish early, you should use the remaining class time to begin working on your homework.

You continue a work in progress on a new computer.

Make sure the work is committed first and then pull the document on the new computer

You accidentally delete the file `important.txt`.

Restore it from the most recently saved state committed to the repository using `git restore important.txt`

You want to reuse a file from a previous assignment.

Copy the document into a new file and

You want to throw away recent changes that you made to a file.

Use `git restore <filename>`

You forgot to push your solution before the assignment deadline.

Push the solution and talk to the professor after