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 over the course of ***20-30 minutes***.
  - 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.

Problem 1

Name: Luke Demi	Major: Cybersecurity
Place of origin: Pittsburgh Pennsylvania	
One interesting fact about me: I can shake my eyes very rapidly.	

Name: Logan Nickerson	Major: Software Engineering
Place of origin: The ancient swamps of the forsaken land known as Bergen	
One interesting fact about me: I was robbed in France and politely kidnapped in Hawaii	

Name:	Major:
Place of origin:	
One interesting fact about me:	

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 for Transfers is designed for students with some prior experience; either from a CS AP course or programming courses taken in another program or at another college.

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

Rate yourselves on a scale of *1* (total novice) to *10* (you should be teaching this class!).

Use [this Google form](#) to tell us about your prior experience. *This will require you to log in with your RIT Google account.* The results will be shared anonymously on the course Discord server.
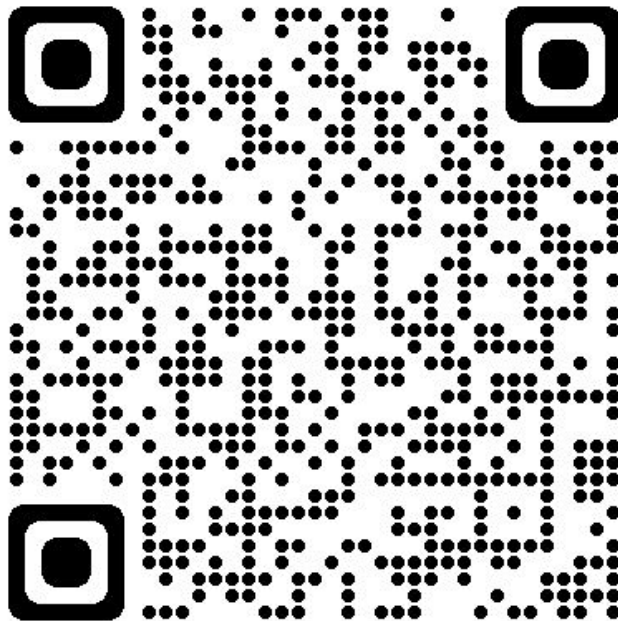
You will be required to log into your RIT Google account to access the form.

Problem Solving 3

```
def printTeamInfo(name, hometown):
    print(name)
    print(hometown,end="\n\n")


def main():
    printTeamInfo("Luke Demi", "Pittsburgh,
Pennsylvania")
    printTeamInfo("Logan Nickerson", "Bergen,
New York")


main()
```

In the space to the left, write the code to print the name and hometown of each of your team members. Include a blank line between each in the output.

```
Hermione Granger
Heathgate, Hampstead

Harry James Potter
Godric's Hollow

Ron Weasley
Ottery St Catchpole, Devon
```

Problem Solving 4

In this unit we saw that Python variables have **scope**, i.e. the places in the program where they can be accessed. In the space to the right, list the types of scope that variables can have along with a short code example.

```python
Global Scope, Local Scope, Parameter
Scope

global_variable = 10

def fun_function(parameter):
    local_variable = 20
    print(parameter)
    print(local_variable)
    parameter = 2 #local scope >
parameter scope

def main():
    fun_function(30)

main()
```

Problem Solving 5

```python
def mailingAddress(state, city, street, zip,
house):
    print("Your mailing address is: ")
    print(house, street)
    print(city, ",", state, zip)

def main():
    state = input("Enter your home state: ")
    city = input("Enter your home city: ")
    street = input("Enter your street name: ")
    zip = input("Enter your zip code: ")
    house = input("Enter your house number: ")
    print("", end="\n")
    mailingAddress(state, city, street, zip,
house)

main()
```

Write the code to prompt the user to enter the two letter abbreviation for their home state (e.g. "NY"), home city, street name, zip code, and house number (in that order). Then print their properly formatted mailing address.

```
Enter your home state: NY
Enter your home city: West Henrietta
Enter your street name: Dutchess Rd.
Enter your zip code: 14583
Enter your house number: 1347

Your mailing address is:
1347 Dutchess Rd.
West Henrietta , NY 14583
```

Problem Solving 6

Python provides functions that will convert between ASCII codes and characters. In the space on the top, define a function that declares a parameter for a character. The function should print both the character and it's ASCII code to standard output, e.g. `A = 65`

In the space on the bottom, define a function that declares a parameter for an ASCII code. The function should print both the ASCII code and its corresponding character to standard output, e.g. `123 = {`

```
def man_splain(a):
    print(a + " = " + ord(a))
```

```
def gaslight(index):
    print(index + " = " + chr(index))
```