While we teach, we learn

- Seneca

(Roman Philosopher)

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Peer Instruction

Flipped Classroom **+** Active Learning **+** Social Collabotaion

Perusall is a platform where teacher upload course material and exercises and **students collaborately engage** with with the material when preparing for lessons.

1 What are Subroutines?

Subroutines are a set of sequential statements which are packaged together to perform a particular task. They are implemented once, and **used** multiple times in the program. Typically, repetitive tasks are good candidates of becoming subroutines, so as to avoid code redundancy. Subroutines help decomposing the program into cohesive units; units which perform specific and concrete tasks. They are *callable*; you can call them when you need in the program.

Imagine a scenario where you need to perform a task repetitively. Assume for simplicity, that you have to take input from user. Depending upon the type of input, you might need to perform some extra tasks (remember skipping next line after taking an integer input?). Every time you need to take user input, you do the following:

1. Print a message for the user e.g., "Please enter your name".

2. Declare a variable to store the user input.

3. Call the appropriate method for the datatype of input.

4. Perform tasks on the input (e.g., trim a string, skip the next line for an int etc)

5. Store the input in the declared variable.

Now assume you need to do this for different users (for example student, teacher, TA),

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How are subroutines different to loop and in particular do while loops? When should you use one or the other?
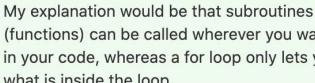
Sep 10 9:00 pm

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the term "repetitively" here does not mean "iteratively" in the sense of loops. It means that instead of coding something to do or to calculate a special case, we can build a "subroutine", or a "method", or a "function" that can do the task not only for that special case but but also for other instances. +2

Sep 10 9:20 pm

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My explanation would be that subroutines (functions) can be called wherever you want in your code, whereas a for loop only lets you repeat what is inside the loop. +2

Sep 10 9:34 pm

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Perusall has made a positive impact in the course.

Ongoing research, but it **seems to improve learning**.

Teaching becomes more fun and engaging.

Great for **practical exercises** (pair programming)

Requires more design and **preparation on the teacher**.