

Why Learn Basics of Computing?

Computing in *your* studies

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Lots of possibilities:

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Lots of possibilities:

- Economics - R or Stata
- Sociology - Python
- Physics - Matlab, R, Python, Javascript
- Chemistry - Python
- English - Python
- Psychology - R

Benefits of understanding basic computing concepts

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- Easier to learn new languages
- Easier to switch between languages
- Easier to follow code examples and adapt that code to new problems
- Improves your understanding of problem solutions provided to you
- Helps you develop problem solutions of your own
- Helps you figure out why code isn't working as expected (or as desired)

The basic actions are....

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Sequential operations -- executed one at a time in order

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Sequential operations -- executed one at a time, in the order given

1. decide on paper topic
2. locate related materials
3. read materials and take notes
4. make outline
5. write paper
6. edit paper
7. turn in paper

The basic actions are....

Decisions - determine whether or not a set of operations should be carried out

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if it is raining, then take umbrella to class

if class is at 8:30 then get to breakfast by 7:45, otherwise get to breakfast by 9:00

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- based on a fixed count, or
- based on some condition being true

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while cake not fully frosted

 get more frosting on spatula and spread it on an
 uncovered section of the cake

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Creating and naming functions -- group together and name a group of operations

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define function FrostCake

 while cake not fully frosted

 get more frosting on spatula and spread it on an
 uncovered section of the cake

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Python

```
for counter in range(1, 10):  
    print(counter)
```

// Java

```
for (counter = 1; counter < 10; counter++) {  
    System.out.println(counter);  
}
```

Understanding basic computing concepts will...

1. help you learn new languages in the future
2. help you think about problem solutions in ways that can be expressed in code
3. help you do the computing work for your class!!!