Coding Tips

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Get started!

- Every day, aim to spend "at least 5 minutes" working on your code.
  - If you become ambitious and say "I will spend at least 1 hour", you will never get started.
  - Once you get started, the momentum will get you through the day.

- Important thing is to Get Started!
  - See this TED talk: https://www.youtube.com/watch?v=TQMbvJNRpLE&t=10s
  - From the talk: "Aim to read one word in a book everyday" (to ultimately read 50 books in a year).
Learning quick

- Start small
  ```php
  <?php
  echo "hello world!";
  ?>
  ```

- Search for what you need, only when you need it.
  ```php
  for ($i=0; $i<10; ++$i) {
  echo "$i \n";
  }
  # is this the correct syntax??
  ```
Test at every step! (for your peace of mind)

- Add one thing at a time and test the result.
- Befriend `print_r()`
- Test with `sandboxes`, before putting it in your code.
- Example: regular expressions

```php
<?php
    $str = "hello,world,bye,now";
    $words = preg_split("","\$str");    # what's wrong with this?
    print_r($words);
?>
```
Errors hard to fix, Stuff hard to install, etc.

- Search on Google(!) with the error message. Make this a habit!
  - People make similar mistakes
- Search on Google with any keywords, and just add "reddit".
  - Reddit tend to have higher signal-to-noise ratio
- Example: `feof()` vs `$str=fgets()` .. in a while loop?

```php
$fp = fopen("data.dat","r");
while (!feof($fp)) {
    ...
}
```

```php
$fp = fopen("data.dat","r");
while ($str=fgets($fp)) {
    ...
}
```

Due to this, I spent several hours trying to figure out why hosting server and docker gave different behavior!
Be lazy (relatively speaking!)

● Why do we write code?
  ○ To automate
  ○ To avoid repeated manual work -- "I'm lazy!"
  ○ To have fun! (see the next slide)

● Example: task that you can do manually in 20 minutes (writing an HTML only web page) but takes 1 hour to code (write program to produce HTML).
  ○ If it is a one-time gig, do it manually and be done in 20 minutes.
  ○ If it is a recurring job, you will quickly accumulate over 1 hour of work if you did it manually.
  ○ Example: My course web page. :-)

● "I got too lazy I wrote code to do my job!"
  ○ Be lazy in a productive way!
Have fun!

- Coding is fun!
  - Don't think of it as an obligation or a burden
  - Figuring out a difficult bug or getting something to finally work can be really fun and rewarding!
  - Coding for the sake of coding!
  - Finding out new stuff is fun: new languages
  - Also, allows you to be lazy (see previous slide)

- Example: Project 1
  - If you make it look really professional, you'll have no problem landing a great job! :-)

- Example: golang, docker
  - To automate google drive upload, got an open source code written in golang. Had to figure out cross-compile features, etc.
  - In finding out web server alternatives, finally bit the bullet and tried docker!