Hack Overflow

All-in-one toolkit for beginner coders

Problem Statement Drafts

Assumption
- Beginner progammers have a hard time switching syntax between languages (they're only comfortable with one)

"Inexperienced programmers that are familiar with 1 programming language need to switch the code in the language they know into another language to meet job/school requirements."

Assumptions
- People care less about who gave an answer and more about finding the correct answer
- Beginners get lost/confronted if they get too much info

"People new to programming need to have a source to answer their questions that doesn't have lots of irrelevant suggestions (they don't have the experience yet to sift through those, so they'll end up wasting time or getting confused otherwise)."

As a result, make a site like stack overflow, but less about a live community of Q&A about coding that has a lot of garbage in it, making it hard to use.
Instead make one which is simplified down to show the core question and the top answer, or top few solutions (if there's more than one). This is much more intuitive for users.

"Non-programmers need a way to find the stack-overflow type info they need without knowing any programming vocab."

- Ex: An expert would google "python cast int to string" but a novice would google "how can i make a variable from an integer to a string" (Google will probably help, but make things easy to find without vocab)
- Ex: An expert would google "concatenate two strings" but a novice would google "how can i combine one string on the end of another"

Assumption:
Beginner programmers can spend a ton of time dealing with error code
and exceptions and they could have a hard time to start the project in an IDE.

We will be creating an wesbite that has Exception Encyclopedia and startup - where people can enter the error code, and the website would provide some solutions and
explaination of the errors/exceptions.

Interviews

Interview Questions

- (TA/Professor) What are the most common issues students face while working on their labs?
- (Student) What languages are you comfortable coding in?
- (Student) How comfortable are you learning other languages?
  - Where do you commonly get stuck when trying to learn a new language?
- (Student) Compared to your fellow classmates, how would you say your skills stack up?
- (Student/TA) When you run into a coding bug/problem, what's your process for solving it?
  - What issues do you run into with those resources?

Interview Notes

- Students struggle connecting/applying concepts if they haven't practiced them enough
- Setting up projects
- Setting up and using the IDE

Interview w/ Nephi

💡 See 'Nephi Interview' file on phone for full details

- When you're looking to convert syntaxes between languages, you want to see the following in this order
  1. Code examples / generated code
  2. Explanations
  - You care less about finding info about the concept (because you already know it in a language)
- When you're looking to find a bug in a program / hole in your understanding, it's the opposite order that's ideally seen
  1. Explanations
  2. Code examples
  - You care less about the code at first since you want to make sure you understand conceptually, so show explanations first
- He cares less about the clutter on stack overflow like the title of the post, upvotes, tons of solutions. Would prefer just the question and just the answer.
- Says that he struggles most with
  1. concepts he's just barely learning
  2. concepts that he learned too long ago
  - Common theme — concepts that haven't been practiced sufficiently

Final Problem Statements

Variation 1

200-Level CS Students with little coding experience need to find quick fixes for their frequently encountered problems so they can avoid wasting time on trivial issues.

Variation 2

It's difficult for 200-level CS Students with little coding experience to keep up with their experienced peers when they need to finish projects but keep wasting time on trivial issues.

Color Palette

Color styles

○ Background

○ Navbar+Surface

● Primary

● Accent

● Dark Text Color

● Primary Light

● Primary Dark

● Accent Dark

● Secondary

● Secondary Dark

User Stories

- As a 200-level CS student with no coding experience outside of school, I want to quickly convert syntax from my comfortable language to the one I'm learning without needing to see explanations initially so I can focus on the code itself.
- As a 200-level CS student with no coding experience outside of school, I want to quickly find information of an exception or error code and the possible solutions of it so that I can quickly find appropriates resources to solve my bug.
- As a 200-level CS student with no coding experience outside of school, I want to set up a project in an IDE so I can reduce the time it takes to set up for an assignment or lab.
- As a 200-level CS student with no coding experience outside of school, I want to be able to easily review concepts and syntax from my last class so I can apply them to my new one.
- As a 200-level CS student with no coding experience outside of school, I want to be able to practice the new concepts I'm learning so I'll be able to apply them to the right situation.
- As a 200-level CS student with no coding experience outside of school, I want to lookup concepts related to my bug so that I can validate my logic before seeing example code.

- As a beginner programmer in college, I want to get my code working within a reasonable time-frame so I can finish everything I need to get accomplished without gettung too frustrated/stressed.
  - Given these students have a bug, when they search for their issue on our website, they will receive the correct fix for their issue in a matter of < 3 min and have a deeper understanding.

Demo

Gift

- (1) Switching to a new language
- (2) Finding simple answers to bugs
- (3) Reviewing and practicing concepts

Now Dax doesn't have to waste time on his labs running into menial issues!

Call To Action / Problem Setting

Intro

- You are a 200 level CS student at BYU going from Python to C++.
- For his lab, he needs to loop through an array of students to see which has the best grade.

1 - Language Switcher

- He's like, "I know how to do this in Python, but not C++."
- "I wish I had a way to type this in Python and switch it to C++."

2 - HackOverflow

- He finds solution using lang switcher, tries on his own, but accidentally makes out of range error in for loop by doing i <= length instead of i < length

3 - Review & Practice

- Now that he knows about the out of range issue, he wants to review and practice the concept real quick so he doesn't make the same mistake later.

Transformation

1 - Language Switcher

- HackOverflow -- Implement code in the language where you're comfortable, then it handles switching it to the new language you'd like.

2 - HackOverflow

- Simple search, finds Q&A page that's super simple, question matches his own, views solution, finds out about out of range issue and how to fix

3 - Review and Practice

- Starts with C++ practice playground
- back to review page

Challenges

1 - Language Switcher

- W3Schools -- Simple way to learn C++, but he wants Python working first

2 - HackOverflow

- StackOverflow -- He pastes his error into stack overflow but is bombarded by too much info -- too many comments, the question doesn't quite match his own, not sure which solution is right

3 - Review and Practice

- W3Schools -- limited to available practice options, sees what happens, but why?
- No Free play option
- does not have ability to test your understanding

Shots

Hack Overflow

All-in-one toolkit for beginner coders

Enter your question, error code, topic, or language 🔍

FAQs (Frequently Asked Questions to Encountered Problems)

Q: Convert **For Loop** from **Python** to any Language

Q: How to Solve **Array Out of Range** Error

Q: Practice: Using **For Loop** in Python

c++ array out of range

Keywords: Array   For loop   Indexing

How to Solve **Array Out of Range** Error

The array out of range issues are very common and mainly happens when the index used is equal or greater than the size of the array.

Tutorial: How to Use **Array** Loop?

With for-each loop, we can avoid using index to access an item in an array, and completely avoid the issue of array out of range.

Error Code: 1209 Array Index Out of Range

1209 is a common error code in IDEA IntelliJ when looping through an array or list.

Q: How to solve **Array Out of Range** error?

This is a common error code when looping through an array or list. Array out of range means that the code is trying to access an array or list outside of its bounds.

A: ### Explanation

An array ranges from 0 to (size - 1). Because it is zero-based, the index starts from 0 and ends 1 before the size of it. Therefore, if an array = [0, 1, 2, 3], then the available indices would be 0 - 3...

Read More

Example Code

```
// declare and initialize an array
string fruits[3] = ["apple", "banana", "cherry"]

// example for loop using index
// print out the index and values for each element
for (int i = 0; i < 3; i++) {
  cout << "At Index: " << i << " value: " << fruits[i] << "\n";
}
```

TRY IT!

🐍 Python ⌄

```
count = 1

if count == 1:
  print("count is", count)
```

⧉

C++ ⌄

```
int count = 1;

if (count == 1) {
    std::cout << "count is "
    << count << std::endl;
}
```

⧉

Stuck? Drag in common code blocks

`if`   `else`   `for`   `while`

Code Output (Verify your logic)

```
count is 1
```
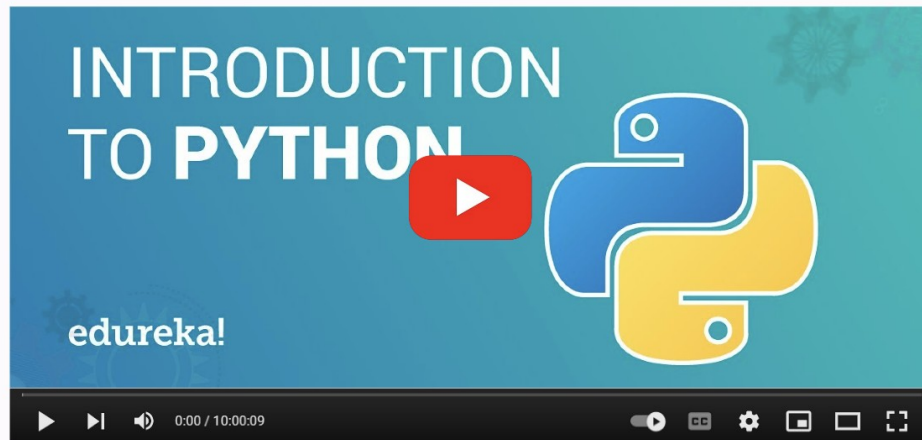
Messed up?

START OVER ↺

🔍 Enter your question, error code...

Language: Python ⌄

Python Introduction

INTRODUCTION TO **PYTHON**

edureka!

▶ ⏭ 🔊 0:00 / 10:00:09   ⊙ CC ⚙ ◱ ▭ ⛶

Transcript

What is Python?

Python is a popular programming language. It was created by Guido van Rossum, and released in 1991. Read More ...

Practice:

Here is example code for printing your first "Hello, World!". Click "Try it!" to try it yourself and see the outcome!

Topics

Intro

For loops

While loops

Variables

If else statements

Switch cases

Try/catch blocks

Printing

Tuples

Arrays

...

Practice Playground

Python ⌄

```
print("Hello, World!")
```

Switch this code to a different language!

RUN ▶

What do you think the answer will be?

"Hello, World!"

Check yourself:

Hello, World!