[Motivational] Computer Science in Context: What you can achieve after taking this course

discussion posted 5 days ago by Kiara-Elizabeth (Community TA)

Welcome to... Computer Science in Context!

Welcome to the amazing world of computer science! On this very moment you are embarking on a journey to one of the most amazing disciplines in our current and future world.

Computation, programming and Computer science are essential in our daily lives.

I hope this post will give you the context you need to visualize where you can go with what you’ll learn in this course, what you can create and how amazing it can be to learn computer science.

FIRST, LET ME TELL YOU THIS: EVERYTHING YOU LEARN IN THIS COURSE WILL BE VITAL FOR YOUR FUTURE IN COMPUTER SCIENCE. THIS COURSE TEACHES THE PRINCIPLES THAT CAN BE APPLIED TO ALL PROGRAMMING LANGUAGES, AND THE THINKING AND PROBLEM SOLVING SKILLS YOU LEARN IN THIS COURSE CAN EASILY BE TRANSFERRED TO OTHER TECHNOLOGIES.

Do not give up when you can’t figure something out immediately. Instead, try to break down the problem into smaller components and a solution will soon come to your mind.

You may have come here out of curiosity for the world of programming, you’ve watched TV shows, you’ve been amazed by technology you own, or you may feel like computers are incredible tools that can transform the world.

Throughout this course you will learn the basics of programming and at the end of the course you will have the necessary foundations to go anywhere you’d like with your programming skills. You can continue expanding your Python skills and/or dive into other programming languages.

Let’s discuss what you can do with the skills you’ll learn in the course:

Web development: everything you are interacting with right now is the product of web development. There are two main components in this discipline: Front-End and Back-End. Front End deals with everything you can see right now, how information is presented to the user and how interactions occur. JavaScript is the programming language used for this purpose. Back-End web development deals with everything related to storing and processing data and delivering it at the proper moment to the user. JavaScript, Python and PHP are programming languages that can be used for this purpose. The principles that you will learn in this course will be easily transferable to learn other programming languages.

Can you imagine creating a web app? Just Picture the moment!

Machine Learning and Artificial Intelligence: Python is used in these two amazing areas of Computer Science. Machine Learning is used to design models that make predictions based on existing data and patterns. Every time that you watch a video on YouTube and you see customized video suggestions, you are witnessing the power of machine learning. You could be the next developer to design a system like this.

Android development: Android is the most popular operating system in our current world. With what you learn in this course, you can start learning Java, the programming language used for Android development. Can you imagine deploying your first app to the Android store? Picture the moment!

Data science: you will be learning Python, a programming language used in scientific computing for statistical analysis. You can analyze data and processes by creating simulations in Python that display data visually to better understand phenomena like population dynamics or virus spread, or perhaps global warming, you name it and I’m sure it can be modeled with Python! Can you imagine analyzing data for a company with scientific simulations YOU developed? Picture the moment!

Bioinformatics: a field that combines mathematics with computer science to model biological processes. Amazing discipline!

Robotics: the future will be code! Robots and autonomous vehicles need software to understand the world they are surrounded by and how to respond to external stimuli. YOU could be the next software engineer for an autonomous vehicle!

All these disciplines require the foundations of programming you will learn in this course, and this is an incredibly important step in you ladder to the world of computer science. I am constantly amazed by the depth of this field, about how complex it can be and amazing as well.

Every minute spent in understanding a bug, a better algorithm for your solution or even better commenting skills will not be wasted, for you will be one step closer to your goal!

Read this context when you feel stressed, frustrated or when you feel you can’t learn programming, and I’m sure that if you truly want to succeed in this field, you will do what it takes to master these concepts, even when things get hard.

Don’t think of bugs as a failure. Think of them as an opportunity to learn, to correct, to become a better programmer. Go at your pace. Understand the concepts, and if you feel like you need help, simply ask in the forums. Community TAs and your classmates will always be there to help you.

You are not alone in this, there are thousands of students all over the world embarking on this journey with you at this very moment.

Use every resource you can find. Learn to read documentation (It can be daunting at first but you’ll learn it’s your best ally because it truly gives you the power to create anything you can imagine)

With this being said… I really wish you luck!! I’m sure you will have so much fun with the challenges presented in the course.

Estefania.

The edX Grader

discussion posted 6 days ago by ApplePieGiraffe (Community TA)

Hello, everybody!

Unfortunately, quite a few people have a little extra trouble with the automatic grader used in this course. This is due both to a lack of understanding of the grader and a few bugs that haven't yet been fixed. Here are a few helpful points to keep in mind...

1. The grader uses Python 3.5.

Don't forget this! You won't be to take advantage of some of Python's newer features such as f-strings or ordered dictionaries (but, don't worry, you'll still be able to solve all the problems in this course just fine).

2. Known grader bugs.

The Terminator

This is the unofficial nickname given to a bug where your code disappears from the code window after you hit the "Submit" button. There really isn't any way to avoid this, so it's recommended that you ALWAYS store your code in some spare place before you hit the "Submit" button.

The grader processes your code forever... and ever.

Once in a while, the grader will keep processing your code, and processing your code, and processing your code, and not stop for several hours.

If, after several minutes, the grader is still processing your code, try (1) closing your browser, (2) reopening your browser and clearing its cache, (3) closing your browser once more, (4) opening your browser again and navigating to the page where you left off. If the grader is still processing your code, hit the "Reset" button in the lower-left corner of the code window and then resubmit your code.

That usually does it. (Feel free to reach out if you still need help.)

3. The grader is wrong.

No, just kidding, the grader is very seldom "wrong," but many people who are new to programming or Python are convinced it might be because it says their code is incorrect when their code seems to run correctly on their machine.

The grader is EXTREMELY picky.

You may get marked 100% wrong for an answer that was 99% "correct" (e.g., you may have forgot to include a semicolon somewhere or something). That's not an error and neither is it "unfair." Computers are, in general, very picky, and you'll find that simple mistakes can cause huge errors. Don't worry, however—just be extra careful!

The grader runs many tests.

You may only test your code with one test (and find no problem) while the grader tests your code with twenty tests (and it finds lots of errors). You will often be able to click "Show full output" on the results tab and see the test cases the grader runs and find out which ones you passed or got wrong.

With that said, just be aware of a few of the quirks of learning to program and the grader, be patient with yourself (learning to code is a little challenging at times), and enjoy the course and discover and create new things!