



Python Programming Game Development

AGES 12+



1 : Game Programming

2 : Ai- Vision & Speech

3 : Ai Raspberry PI

The Ultimate Programming Curriculum for Future AI

The Python & AI curriculum introduces Python programming through game development before moving onto Artificial Intelligence (AI) courses. Like all Exceed Robotics curriculums, programming concepts and languages are taught through relevant applications – Python is the leading coding language for Big Data, Advanced Robotics and Artificial Intelligence.

Higher level courses move onto programming for image manipulation, object detection and text to speech before integrating these elements in a final AI project. The end goal of this program is to teach Python towards creating advanced devices with Artificial Intelligence

PROGRAM DETAILS

8-month curriculum (online)

Classes once per week classes

One-hour in duration

6 max students per class

The Python and Artificial Intelligence curriculum was created by a team of software engineers working in the tech industry, with years of experience in teaching and course development. The program's vision is to create a community of young innovators by developing relevant computer science & engineering skills with industry-related experience to kickstart their career in STEM

PY-01: INTRODUCTION TO PYTHON GAME PROGRAMMING

Prerequisite: ages 12+ (no experience required)

Designed to introduce student to coding in Python through a fun application – Game Programming. Students learn programming fundamentals using an object-oriented language. Concepts such as variables, if statements, while loops, mouse input, and basic shapes are taught in the first course. Students complete the course by creating a simple game with Python.

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"Guess the Number"
Programmed by Zachary Fruhling
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import random
correctAnswer = random.randint(1, 100)
gameOver = False

while gameOver == False:

    playerGuess = int(input("Guess a number between 1 and 100: "))

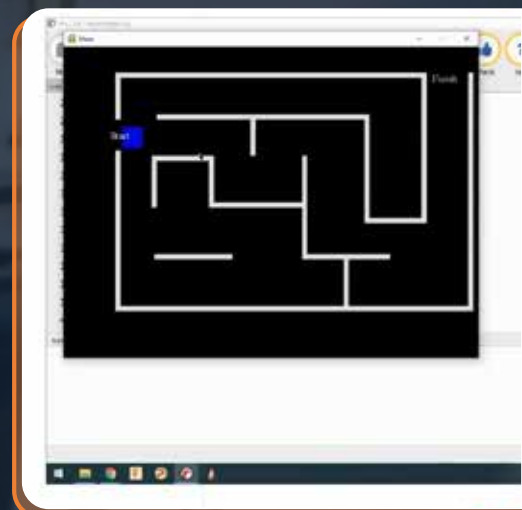
    if playerGuess == correctAnswer:
        compareAnswer = "Right"
        gameOver = True
    elif playerGuess > correctAnswer:
        compareAnswer = "High"
    elif playerGuess < correctAnswer:
        compareAnswer = "Low"

    if compareAnswer == "Right":
        print("Correct! You Win!")
    elif compareAnswer == "High":
        print("Too High! Guess Again!")
    elif compareAnswer == "Low":
        print("Too Low! Guess Again!")
  
```

PY-02: GAME PROGRAMMING FUNDAMENTALS I

Prerequisite: PY-01

Students are introduced to more advanced concepts including Functions, Lists and Keyboard input. The material covered in this course could be extended to any object-oriented programming language and serve to advance our game development skills. Students will complete the course by creating a new game applying the learned fundamentals.



PY-03: GAME PROGRAMMING FUNDAMENTALS II

Prerequisite: PY-03

Our third game programming course focuses on one of the most important concepts of object-oriented programming – classes. Classes play a big role in game programming by simplifying code and have extensive uses in non-game programming applications. Students will create several games throughout this course to better understand and practice this concept.



PY-04: GAME PROGRAMMING APPLICATION

Prerequisite: COD-03

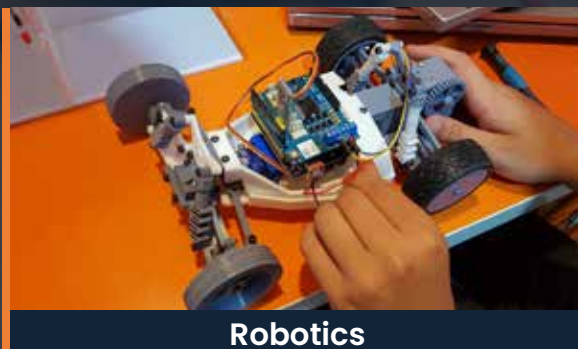
The final Game Programming course has an open project to provide students with the opportunity to apply the learned concepts for programming a game on their own. Students receive a project outline with game requirements and options to make the game more interesting. At the end of this series of courses, students would have built a solid understanding in programming and coding in Python.



What's Next?



Python & Artificial Intelligence is suitable for students who wish to take their learning to the next level by joining Python and Artificial Intelligence curriculum where they learn AI applications such as Face Detection or Speech Detection using Raspberry Pi.



The Robotics curriculum was created by a team of mechatronics engineers with 25+ years of global industry experience with the aim of advancing STEM education amongst Canada's youth. The Robotics program's vision is to create a community of young innovators by developing computer science and engineering skills and directing them towards solving real-world problems