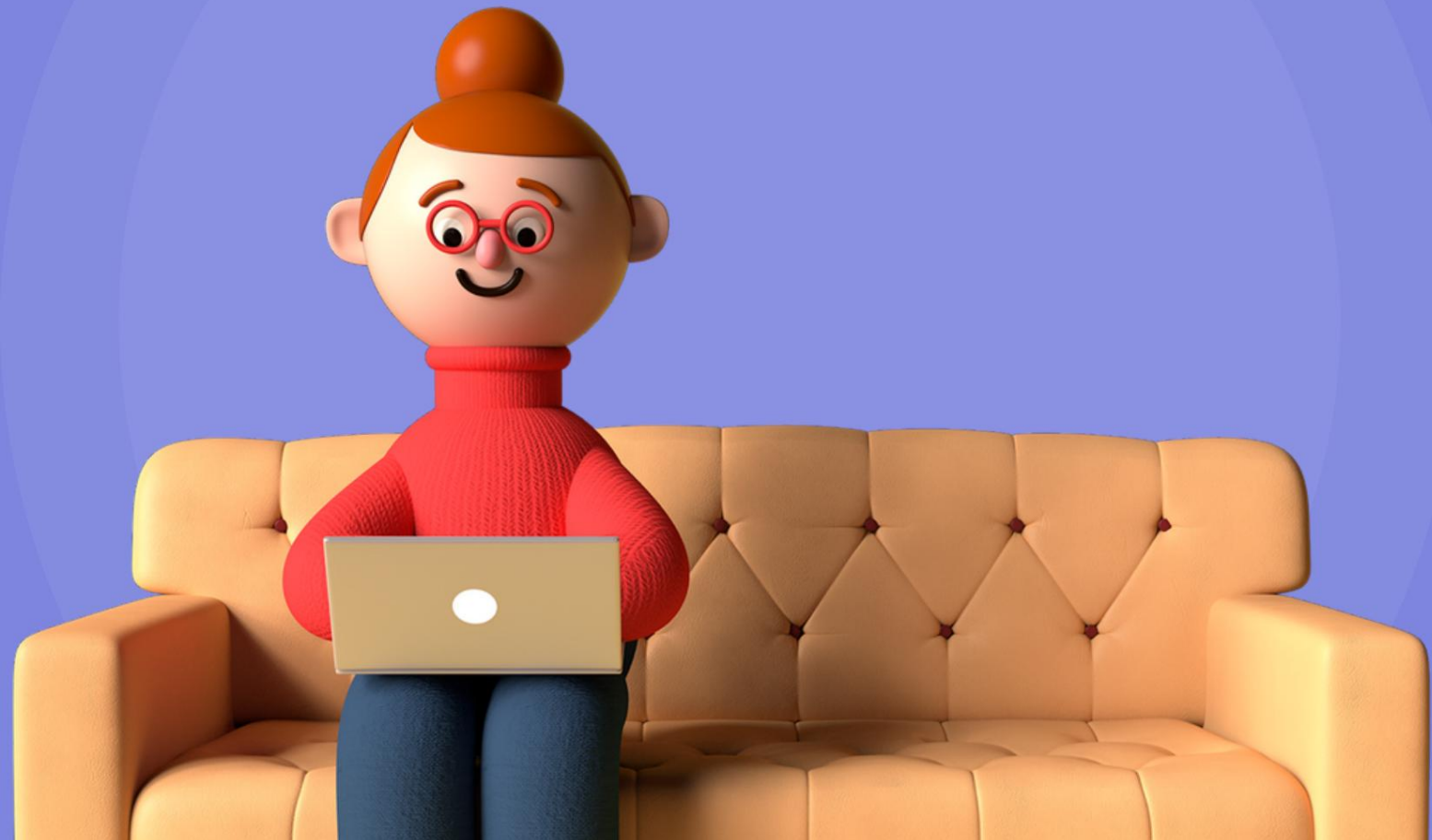# COURSE PROGRAM

Python Programming

EASYSKILLS

HOW DOES TRAINING GO?

The course consists of 4 modules

16 lessons once a week

1.5 hours each (2 academic hours)

DESCRIPTION

COURSE

This course focuses on learning the basics of programming with Python.

Python is a programming language that is widely used and in demand in the modern IT community. Python has a fairly simple syntax compared to

other programming languages that makes it the ideal tool for learning the basics of programming.

PYTHON

RESULTS
TRAINING

As part of this course, your child will:

- learn the syntax and features of the Python programming language;

- gain practical writing skills

  program code, indispensable for further study of IT

  technologies; a variety of learn to solve arithmetic and

-
  logical problems;

- develop algorithmic thinking;

- learn to draw and animate

  drawn with code; write his own game; get to

- know the fundamentals

-

  concepts   And   rules

  programming.

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The goal of the course: learning the basics of programming using the popular Python programming language

EASYSKILLS

Course program: module 1

Lesson 1

Introduction to the Python programming language

- What is programming? Benefits and
- Ease of Python Programming Simple Variables in Pytnon Creating Your
- First Input and Output Program
-

Practical task: writing a simple program in Python, using the knowledge gained in the lesson.

Lesson 2

Computing in Python

- Arithmetic and Boolean Operations Data Types in
- Python Solving Math Problems with Python
-

Practical task: consolidating the information learned in the lesson. Solving problems discussed in the lesson.

Lesson 3

Conditional statements in Python

- What is a conditional operator?
- Understanding a block of code "if,
- else, elif" statements

Practical task: solving practical problems using conditional statements

Lesson 4

Loops in Python

- The concept of a cycle in programming The "for"
- loop Writing programs that solve algorithmic
- problems on the topic
  cycles

Practical task: consolidating the acquired knowledge, with the help of problem solving

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Course program: module 2

Lesson 5

Loops in Python

- Loop "while"
- Comparison of loops and identifying their
- differences Solving practical problems on this topic

Practical task: solving problems on the topic of enumeration of sequences of numbers

Lesson 6

Functions in Python

- Introduction to the data type "string" and "list" The
- concept of "function" in programming Syntax of
- functions in the Python programming language

Practice: Upgrading Previously Written Programs by Combining Code

Lesson 7

Complex data types. "List" and "tuple" The
- concept of an array or list in programming Methods for
- working with "lists" in Pytnon Solving practical problems on
- the topic of lists

Practical task: solving practical problems on this topic

Lesson 8

Working with files and strings

- Reading and writing to a
- file Working with "strings" in
- Python Processing and storing data, creating a simple database

Practical task: improvement of the program developed on lesson

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EASYSKILLS

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Course program: module 3

Lesson 9

Complex data types. Dictionaries.

- The concept of "dictionaries" and "sets"
- Methods for working with them in Python
- Solving practical problems on the topic of dictionaries

Practical task: solving problems on the topic studied

Lesson 10

Classes in Python

- The Concept of Classes in Programming An
- Introduction to Object-Oriented Programming Class Methods and Fields
-

Practical task: consolidating knowledge in practice

Lesson 11

Working with classes and functions. Fixing the material

- Repetition of class and def properties
- We continue to write a program, study libraries We analyze the main
- stages when writing a program

Practical task: performing practical tasks for this
topic

Lesson 12

Solving practical problems with Python

- Consolidation of knowledge on libraries
- Presentation of own program

Practical task: improving the developed program

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The goal of the course: learning the basics of programming using the popular Python programming language

Course program: module 4

Lesson 13   **Introduction to the Pygame library**

- Getting started with
- Pygame Creating a template for future
- games Drawing graphics primitives

Practical task: creating graphical primitives

Lesson 14   **Animation and Handling of Keystrokes**
- Getting Started with the Snake Game Project
- Handling Keystrokes in Pygame Creating
- Animated Object Motion Teleporting the Snake
- When Colliding with the Window Border

Practical task: figure out how to implement the appearance of apples on the game scene

Lesson 15   **Making bullseyes and a score counter**

- Connecting images in Pygame Creating
- a bullseye object Collising objects in
- Pygame Rendering text and scoring in
- the game

Practical task: review the topics "Functions in Python", "Lists in Python", prepare for test paper

Lesson 16   **Finalization of the game Snake**

- Increasing the number of snake segments
- Correcting bugs and improving the game
- Adding musical accompaniment to the game Summing
- up the course