

What is Alice?

Alice is free software that makes learning to program fun. It was developed by Carnegie Mellon University as an exciting way to learn to program by creating 3D animation.

In Alice you will create virtual 3D worlds. You will add characters, animate them, and interact with the user to create games and tell stories. The Alice gallery includes people, animals, and fantasy figures like witches and trolls. There are also props such as castles, bridges, vehicles, and scenery. After setting up the Alice virtual world, you add code to bring the 3D characters to life.

You will create programs by dragging and dropping graphic tiles. By animating and manipulation the 3D characters in the virtual world, you will learn to use the same programming tools that are typically taught in a beginning programming course.

The lessons guide you with videos, drills, self study questions and suggestions for experimenting and becoming proficient with the tools you have seen demonstrated.

In lesson 1, "Introduction to Alice", you will download and install Alice3 and explore the features of the Alice environment. You will learn how the gallery is organized and meet some of the 3D characters you will be learning to animate.

In lesson 2, "Your First Program: Hello World", you will create your first program. Traditionally, the first program you write is to display the words "Hello World." In Alice, you will display the words by having a character say them.



In lesson 3, "Start, Save, Reopen and modify your program" you learn to save a project, reopen it and start a new project. You will learn to add comments, an important way to leave notes for yourself. You will learn to add arguments (additional information) to the code, and make other changes to the code.

In lesson 4, "Understanding the Alice Virtual World" you will learn how objects view the world and how to move them in the Alice virtual world. You will be able to move, turn and roll the objects that make up your scene.

Lesson 5, "Setting up the Alice Virtual World" shows you how to change the properties and position of the objects and camera in the Alice virtual world. You will learn to use some of the tools that allow you to make changes to the virtual world.

In lesson 6, "Variables in Alice3" You will learn to use variables. Variables allow you to store values in memory and reuse those values. You will learn to create (declare) variables, including how they must be named and selecting the correct data type.



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In lesson 7, "User Input in Alice3" you learn how to get input from the user and store those values in variables. You will be able to ask the user for information such as his name and age, and then use that information later in the program.

In lesson 8, "Posing Objects in Alice3" you learn to pose the subparts such as arms, legs, and car doors. You will be able to pose the characters both in the design view and by using code.

In lesson 9, "Boolean Expressions", you learn about Boolean (true or false) expressions. You will learn to use the if/else control structure to create different paths or branches in the code. You can use if/else control structures to ask the user a riddle, tell them if they got the answer right, or let them choose the next path in the story.

In lesson 10, "Creating Animation", you learn to use control structures, such as loops to animate the characters. You will be able to make them wave 3 times, stomp their feet twice, or move back and forth.

In lesson 11, "The Software-Lifecycle" you learn tools for designing larger programs. You will create storyboards, learn to draw flowcharts and create a truth table. These tools will help you create a large project such as a fairy tale or fable.

In lesson 12, "Procedures" You learn to use procedures to write Top-Down Code and to create procedures for walking, jumping, and other actions that you want to reuse multiple times and for multiple characters.

In lesson 13, "Calculations", you learn to do calculations, use counters, and find totals. These calculations will enable you to move the characters more precisely in the Alice virtual world.

In lesson 14, "Random Numbers" you will learn to use random numbers. Random numbers make it possible to create games and to make the movements of the characters more natural.

In lesson 15, "Arrays" you learn to use arrays (lists) to act on groups of objects together. You will learn to create an array of strings, numbers and objects. You will use control structures that operate on arrays. You can create a school of fish, or a flock of birds that move in unison.

In lesson 16, "Advanced Techniques" you will add special effects like sound, scene changes and moving the camera with a character.

In lesson 17, "Events" you will learn to make your program more interactive by allowing the user to control the action using the keyboard and the mouse. You will also use a timer event to make a dog wag its tail continuously or add events that happen at random intervals.

It's an exciting adventure. Let's get started!



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