



Drone Coder with Programming Language C

Course Outline:

Jumping Right In

1 What Is C Programming, and Why Should I Care?

- What Is a Program?
- What You Need to Write C Programs
- The Programming Process
- Using C

2 Writing Your First C Program

- A Down-and-Dirty Chunk of Code
- The main() Function
- Kinds of Data
- Characters and C
- Numbers in C
- Wrapping Things Up with Another Example Program

3 What Does This Do? Clarifying Your Code with Comments

- Commenting on Your Code
- Specifying Comments
- Whitespace
- A Second Style for Your Comments

4 Your World Premiere—Putting Your Program's Results

- Up on the Screen
- How to Use printf()
- The Format of printf()
- Printing Strings
- Escape Sequences





- Conversion Characters
- Putting It All Together with a Code Example

5 Adding Variables to Your Programs

- Kinds of Variables
- Naming Variables
- Defining Variables
- Storing Data in Variables

6 Adding Words to Your Programs

- Understanding the String Terminator
- The Length of Strings
- Character Arrays: Lists of Characters
- Initializing Strings

7 Making Your Programs More Powerful with #include and #define

- Including Files
- Placing #include Directives
- Defining Constants
- Building a Header File and Program

8 Interacting with Users

- Looking at scanf()
- Prompting for scanf
- Problems with scanf()

Putting C to Work for You with Operators and Expressions

9 Crunching the Numbers—Letting C Handle Math for You

- Basic Arithmetic
- Order of Operators
- Break the Rules with Parentheses
- Assignments Everywhere

10 Powering Up Your Variables with Assignments and Expressions

- Compound Assignment
- Watch That Order!





• Typecasting: Hollywood Could Take Lessons from C

11 The Fork in the Road—Testing Data to Pick a Path

- Testing Data
- Using if
- Otherwise...: Using else

12 Juggling Several Choices with Logical Operators

- Getting Logical
- Avoiding the Negative
- The Order of Logical Operators

13 A Bigger Bag of Tricks—Some More Operators for Your Programs

- Goodbye if...else; Hello, Conditional
- The Small-Change Operators: ++ and --
- Sizing Up the Situation

Fleshing Out Your Programs

14 Code Repeat—Using Loops to Save Time and Effort

- while We Repeat
- Using while
- Using do...while

15 Looking for Another Way to Create Loops

- for Repeat's Sake!
- Working with for

16 Breaking in and out of Looped Code

- Take a break
- Let's continue Working

17 Making the case for the switch Statement

- Making the switch
- break and switch
- Efficiency Considerations





18 Increasing Your Program's Output (and Input)

- putchar() and getchar()
- The Newline Consideration
- A Little Faster: getch()

19 Getting More from Your Strings

- Character-Testing Functions
- Is the Case Correct?
- Case-Changing Functions
- String Functions

20 Advanced Math (for the Computer, Not You!)

- Practicing Your Math
- Doing More Conversions
- Getting into Trig and Other Really Hard Stuff
- Getting Random

Managing Data with Your C Programs

21 Dealing with Arrays

- Reviewing Arrays
- Putting Values in Arrays

22 Searching Arrays

- Filling Arrays
- Finders, Keepers

23 Alphabetizing and Arranging Your Data

- Putting Your House in Order: Sorting
- Faster Searches

Files and Functions

24 Saving Sequential Files to Your Computer

• Disk Files





- Opening a File
- Using Sequential Files

25 Saving Random Files to Your Computer

- Opening Random Files
- Moving Around in a File

26 Organizing Your Programs with Functions

- Form Follows C Functions
- Local or Global

27 Passing Variables to Your Functions

- Passing Arguments
- Methods of Passing Arguments
- Passing by Value
- Passing by Address

28 Returning Data from Your Functions

- Returning Values
- The return Data Type
- One Last Step: Prototype

Drone Coder

First you will need to get comfortable just controlling the drone with your smartphone/tablet and will give you an extremely simple and quick way to have an AR Parrot Drone 2.0 fly autonomously with code written by you using Node JS! The best part of this project is it only requires the drone and a laptop (mac or windows).