



Yuana Consulting & Development Services

Programming - Introduction

Welcome to Your Programming Journey





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Programming - Introduction

Yuana

Yuana Consulting & Development Services was founded in 2014. Our main business has been administrative software development with an emphasis on Tax software. We have been working for the Tax Departments of the islands and also developed a Tax application for accountants and consultants. Besides this, we have developed numerous applications for all kinds of businesses.





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Who Am I?

- Joost Stolk, 25+ years of programming experience
- Desktop apps and web apps in various programming languages
- Mostly administrative software and databases
- Keeping my knowledge and tools up-to-date





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Who Are You?

- Short introduction round
- What is your programming experience?
- What do you expect from this course?





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What This Course Is About

- What is programming?
- Different kinds of development
- Programming basics
- Tools & exercises



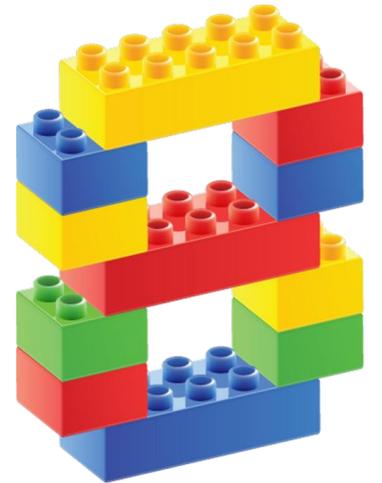


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Programming - Introduction

What Is Programming?

- Programming is a part of software development
- Giving instructions to computers
- Solving (business) problems, automating tasks
- Modular design (digital Lego)





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Programming is a part of software development

Programming is like writing the script for a play, but software development is the entire production: casting, rehearsals, lighting, stage design, and finally, the performance. Code is crucial, but it's one piece of a much larger creative and technical puzzle.



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Programming is a part of software development

In 2023 I was hired to ‘just fix a few bugs’ in an existing application, but I ended up redesigning the whole thing. The code was a mess, the database even more so.

Programming solves problems, but software development defines which problems matter and how to build a clear and concise structure.



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Programming is a part of software development

Imagine building a to-do list app. Programming is writing the logic that adds, deletes, and saves tasks. But software development includes:

- Designing the interface so users don't get lost
- Planning how data syncs across devices
- Testing edge cases (like what happens when someone enters 10,000 tasks)
- Deciding whether to store data locally or in the cloud



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Giving instructions to computers

Programming is like writing a recipe for someone who's never cooked before, and who takes everything *literally*. If you say "boil water," they'll stare at the pot forever unless you also say "turn on the stove." Computers don't guess. They follow instructions exactly as written, no more, no less.



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Giving instructions to computers

There is a story about a developer who forgot to tell the computer to stop in time. It sent 10,000 emails... to the same person. The computer wasn't wrong—they just didn't give clear instructions. Programming is precision storytelling.



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Solving (business) problems, automating tasks

Programming is like giving your future self a break. Instead of manually copying data every Monday morning, you write a script that does it for you, flawlessly, every time. Businesses love this because it saves time, reduces errors, and lets humans focus on what they do best: thinking creatively.



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Solving (business) problems, automating tasks

Imagine a bakery that tracks daily sales in Excel. Every evening, someone manually 1. copies numbers from the register, 2. calculates totals, 3. emails the manager

With programming, you can 1. connect the register directly to a database, 2. auto-calculate totals, 3. send the report at 6pm sharp—without lifting a finger.



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Modular design (digital Lego)

Programming isn't just about writing code: it's about building reusable, interchangeable blocks. Like Lego bricks, each module has a clear shape and purpose. Stack them together, and you get a castle, a spaceship... or a web app. Change one brick, and the rest still fits.



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Modular design (digital Lego)

Imagine building a weather app. You might have different modules for fetching data, displaying the data, converting units (Celsius \leftrightarrow Fahrenheit).

Each part works independently. Want to switch from one data source to another? Just swap the data-fetching module. The rest of your app doesn't even notice.



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Kinds Of Development

- Desktop development
- Web development
- Mobile development
- IOT, embedded systems, games, ML & AI





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Desktop Development

Building software that runs on personal computers - like accounting tools, media players, or design apps. Think of it as crafting tools for a digital workbench, optimized for mouse, keyboard, and offline use.



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Web Development

Creating applications that run in a browser - accessible from anywhere, on any device. From online shops to interactive dashboards, it's like building digital storefronts and workspaces that live on the internet.



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Mobile Development

Crafting apps for smartphones and tablets, designed for touchscreens, small screens, and on-the-go use. Whether it's a fitness tracker or a food delivery app, mobile development brings software into your pocket.



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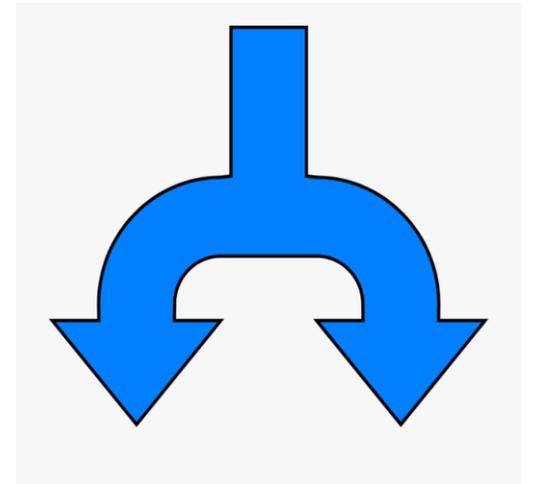
IOT, Embedded Systems, Games, ML & AI

Not all programming happens on websites or apps. Some developers build software for smart devices (like fridges that text you when the milk's low), tiny computers inside machines (like the one that controls your washing cycle), video games (where code creates worlds and rules), or even systems that learn from data, like AI that recommends your next favorite song. These areas might sound advanced, but they all start with the same basic skills you will learn.



Programming Basics

- Variables
- Functions
- Conditional branches
- Loops





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Variables

A variable is like a labeled jar where you store information. You give it a name (like “score” or “userName”), and you can put something inside - like a number, a word, or even a list. Later, you can open the jar, change what’s inside, or use it in a recipe (your code). It’s how programs remember things while they run.



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Functions

A function is like a magic spell you write once. You give it a name (like `makePizza`), define what it does (mix dough, add toppings, bake), and then you can cast that spell anytime - just by calling its name, without repeating all the steps. It helps keep your code clean, reusable, and easy to understand: a shortcut for doing something complex, quickly and consistently.



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Conditional Branches

Conditional branches are how your code makes decisions. It's like asking, "If it's raining, take an umbrella. Otherwise, wear sunglasses." The computer checks a condition and chooses a path - just like you do every day without realizing it.

Conditional branches let your program respond to different situations - like a smart storyteller who adapts the plot based on what's happening.



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Loops

A loop lets your code repeat something over and over, until it's done. Instead of writing the same instruction ten times, you write it once and tell the computer, "Do this ten times." It's how programs handle big tasks with tiny effort.

Think of a loop like a merry-go-round. You hop on, and it spins until the music stops. Each time around, the horse goes up and down the same way, but you only had to start it once. In code, loops are your way of saying, "Keep going until I say stop."



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Programming Tools

- Languages
- IDE's & SDK's
- Backup, sharing, testing and publishing tools
- Third party packages





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Languages

Programming languages are how we talk to computers. Each one has its own grammar and style, like Python (simple and friendly), JavaScript (great for web stuff), or C# (powerful for apps and games). Just like human languages, they all help you express ideas, but some are better suited for certain tasks. Once you learn one, picking up others gets easier.



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IDEs & SDKs

An **IDE** (Integrated Development Environment) is like your programming cockpit, it gives you tools to write, test, and debug code all in one place. Think of it as a super-powered notebook with spellcheck, autocomplete, and a built-in magnifying glass for finding bugs.

An **SDK** (Software Development Kit) is more like a toolbox with pre-made parts, instructions, and helpers for building specific kinds of software - like mobile apps or games. It's what you grab when you want to build something fast, with the right tools already in place.



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Backup, Sharing, Testing And Publishing Tools

These tools help you protect your work, collaborate with others, and get your software out into the world. Backup tools (like version control systems) keep track of changes so you don't lose progress. Sharing tools let you work with teammates or show your code to others. Testing is done to make sure your code works the way you want it, and that there are no errors (bugs). Publishing tools help you launch your app, website, or project so people can actually use it.



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Third Party Packages

These are pre-built chunks of code made by other developers that you can plug into your own project. Need to send an email, draw a chart, or connect to a database? Chances are, someone's already built a package for that. Instead of reinventing the wheel, you just install it and roll.

Think of third-party packages like frozen pizza dough. You could make it from scratch—but if someone's already nailed the recipe, why not use it and focus on the toppings? Packages save time, reduce bugs, and let you build cool stuff faster.



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Thank You

You've just taken your first steps into a world where ideas become tools, and tools become solutions.

Programming isn't just about code, it's about solving problems, telling machines what to do, and building things that matter.

Whether you're here to automate a task, build an app, or change the world... you've already started.

The best way to learn programming is to start building. So—what will we build next?