

Learning Coding

First, you may be wondering what Basic For Qt® exactly is.

Well, there is a simple answer - Basic For Qt® is a programming language based on well-known BASIC, which has been the accepted standard ever since its inception. Why? Because of its ease of use, its English-like commands, and its power.

Basic For Qt® stands for Beginner's All-Purpose Symbolic Instruction Code. Several of its commands are pure English. It has a simple structure for its programs

But why should you use Basic For Qt®? What's in it for you? Many things are in it for you. When you learn Basic For Qt®, you also learn many of the fundamentals of other programming languages. You also can create programs easily. Once you get into it, you'll find that the fun in creating programs is worth coming back to.

Let me show you some theory about programming languages.

The CPU of your computer is only able to execute machine code, therefore a compiler is needed to translate from a high-level programming language (human friendly = Basic For Qt®) into machine code.

Programming languages (Basic For Qt®) give you the ability to create computer programs, meaning solving problems with algorithms. Through programming languages it is possible to run calculations of mathematical expressions ($12 * 556 + 9$), to give your computer different kind of commands ("Open file", "Print document") and to control your own computer program regarding the way it is executed, which command comes first and so on ("repeat this command 10times").

Other examples of programs are the programs of your local theater (defined order of the movies) or good old board games (game rules).

Important parts of the Basic For Qt® programming language.

Mainly there are three parts:

1. math. calculations, variables, expressions, math. functions $n = 1 * 2 + 3 + 4 * 5$ $n = ABS(-99)$
2. commands, open/save file, move the mouse, play movie `saveFile(c:\bernd\thesenpapier.sdw)`
`playMovie(open hearts.mpg)`
3. program control, order and organisation

Some other rules

1. commands are executed from top to bottom
2. it is possible to define if a command is executed at all using commands like: IF THEN ELSE, SELECT
3. if a command should be repeated and how often using commands like: DO WHILE, FOR NEXT
4. if several commands should be grouped to a new single command using commands like:

FUNCTION, SUB

List of programming languages

Only a small list, probably there exist more than 65 different programming languages

Machine code (1943)	“in the beginning there was machine code”	10001111 10101110 10101110 10101100
Assembler	More human-friendly way of machine code	MOV AX, 13 JMP 66 INC BX
BASIC, (1964) Visual Basic (1990) and Basic For Qt® (2011)	Most known programming language, because it is also integrated in most office programs like word processors	If i = 0 Then
C (1969) und C++ (1984)	Most important programming languages, most important programs are written using one of them (operating system, office, games)	If (i == 0){ void startGame(void *p){
Java (1996)	For Internet und Server applications	public class Abspann { setFont(font);
C# (2001)	Yet another kind of C, C++ and Java	namespace TestParser { System.Console.WriteLine
Script languages	e.g. PHP / Perl (Internet)	echo “hello”

Glossary

Only a small list of the important notions

- algorithm, order of commands to solve a problem
- syntax, describes how to write commands
- compiler, computer program for translation of high-level to low-level = machine code, the translation result is a complete runnable computer program in machine code
- interpreter, computer program, which while executing a high-level program translates the next command“on the fly” into machine code
- expression, e.g. $1 + 23 * 5$
- variable, place to store the result of math. Expressions for later processing

To be continued...

That's it! Thanks for reading and trying and have lot of fun with Basic For Qt®.

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