Introduction to Programming

Duration: 3 Days   **Course Code: ITP**   **Delivery Method: Company Event**

Overview:

The Introduction to Programming course comprises sessions dealing with variables,expressions,conditional statements,collections,iterative statements,functions,objects,compilation and execution,and best practices.
This hands-on course does not concentrate on any one language in particular,rather its aim is to familiarise delegates with standard programming terminology,structures,and principles. Examples are given in three languages - Python,Java,and JavaScript - and delegates may choose any one of these languages with which to carry out the practical exercises.
Exercises and examples are used throughout the course to give practical hands-on experience with the techniques covered.
The delegate will learn and acquire skills as follows:

Writing to reading from the consoleDeclaring and initialising variablesConstructing expressionsConstructing conditional statementsWorking with arrays/listsConstructing iterative statementsDeclaring and invoking/calling functionsWriting procedural programsWorking with classes and objectsWriting object oriented programsCompiling and executing code

Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

Target Audience:

This Introduction to Programming course is designed for those new to programming,who want to learn about the terminology,structures,and principles of programming generally.
Attending this course will provide delegates with the prerequisite knowledge and required skills to go on to learn any programming language in detail,e.g. Java,JavaScript,Python,C,C++,C#,PHP,Perl,Ruby,etc.

Objectives:

- This course aims to provide the delegate with the knowledge to be able to produce simple computer programs that demonstrate an understanding of the three core principles of programming - sequence,selection,and iteration. Delegates will also be exposed to functions,objects,and both procedural and object-oriented programming paradigms. The course further aims to prepare delegates to go on to learn any one of many programming languages in detail.

Prerequisites:

Delegates should be able to navigate the filesystem,edit a file,and browse the web. No programming experience is necessary.

Follow-on-Courses:

- Java Programming 1 (JAVA1)
- C# Programming (C-SHARP)
- C++ Developer (CPLUSDEV)
- Python Programming 1 (PYP1)
- PHP Programming (PHP)
- Ruby Programming (RUBYP)
- Perl Programming (PERL)
- JavaScript 1 (JS1)
- Object Oriented Analysis & Design (OOAD)

ITP
www.globalknowledge.com/en-gb/
info@globalknowledge.co.uk
01189 123456

Content:

Introduction to Programming Training Course
Course Contents - DAY 1

Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

Session 1: INTRODUCTION

- Thinking Like a Computer
- Input/Output
- Storage
- Arithmetic
- Comparison
- Decisions
- Repetition
- Reuse
- What is a Program?
- Statements
- Comments
- What is Code?
- From Source Code to Runtime
- Why So Many Languages?
- What Does a Programmer Do?
- Hello World
- stdin and stdout
- The Console

Session 2: VARIABLES

- Variables - What and Why
- Name and Value
- Literals
- Data Types
- Declaration
- Initialisation
- Assignment
- Constants

Session 3: EXPRESSIONS

- Expressions - What and Why
- Operators and Operands
- Unary and Binary Operators
- Arithmetic Operators
- Assignment Operators
- Precedence
- Associativity
- Complex Expressions
  Introduction to Programming Training
  Course   Course Contents - DAY 2

Session 4: CONDITIONAL STATEMENTS

- Conditional Statement - What and Why
- Comparison/Relational Operators
- Logical Operators
- if else
- switch
- The Ternary Operator
- Code Blocks
- Variable Scope

Session 5: COLLECTIONS

- Collections - What and Why
- Strings
- Arrays/Lists
- Declaration
- Initialisation
- Getting and Setting Elements

Session 6: ITERATIVE STATEMENTS

- Iterative Statements - What and Why
- while
- do
- for
- break
- continue
- Array/List Traversal

Session 7: FUNCTIONS

- Functions - What and Why
- Declaration
- Parameters
- Return Type
- Invocation/Call
- Arguments
- Return Value
- Variable Scope (Review)
- Modules
- Libraries
- Procedural Programming
  Introduction to Programming Training
  Course   Course Contents - DAY 3

Session 8: OBJECTS

- Object - What and Why
- Object Literals
- Object Properties
- The Trouble with Object Literals
- Classes
- Fields
- Methods
- Instances
- Reference Variables
- Primitive Variables
- Passing by Val/Ref
- Object Oriented Programming
- The Three Principles

Session 9: COMPILATION ; EXECUTION

- From Source Code to Runtime (Review)
- Compilation
- Debugging
- Linking
- Execution
- Interpretation
- Platform Dependence
- Compilation and Interpretation (Bytecode)

Session 10: BEST PRACTICES

- Program Design
- Stating the Problem
- Devising the Solution
- Pseudocode
- Coding Conventions
- White Space
- Indenting
- Naming
- Coding Style
- Readability
- Flexibility
- Scalability
- Unit Testing
- Test Driven Development (TDD)

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

info@globalknowledge.co.uk

www.globalknowledge.com/en-gb/

Global Knowledge, Mulberry Business Park, Fishponds Road, Wokingham Berkshire RG41 2GY UK