C++ Programming
Step-by-Step

Asadullah Shah

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INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
C++ Programming: Step by Step

Editors

Asadullah Shah

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# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEDICATION</td>
<td>iii</td>
</tr>
<tr>
<td>PREFACE</td>
<td>viii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>ix</td>
</tr>
<tr>
<td>1. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td><em>Asadullah Shah and Assadullah Shaikh</em></td>
<td></td>
</tr>
<tr>
<td>2. ARITHMETIC EXPRESSIONS AND DATA TYPES IN C++</td>
<td>5</td>
</tr>
<tr>
<td><em>Asadullah Shah and Assadullah Shaikh</em></td>
<td></td>
</tr>
<tr>
<td>3. SENDING THE OUTPUT TO A PRINT FILE</td>
<td>11</td>
</tr>
<tr>
<td><em>Asadullah Shah and Assadullah Shaikh</em></td>
<td></td>
</tr>
<tr>
<td>4. DECISION MAKING: IF-ELSE STATEMENTS AND RELATIONAL OPERATORS</td>
<td>17</td>
</tr>
<tr>
<td><em>Asadullah Shah and Assadullah Shaikh</em></td>
<td></td>
</tr>
<tr>
<td>5. LOGICAL OPERATORS AND SWITCH STATEMENTS</td>
<td>25</td>
</tr>
<tr>
<td><em>Asadullah Shah and Assadullah Shaikh</em></td>
<td></td>
</tr>
<tr>
<td>6. REVIEW, SUMMARY &amp; BUILDING SKILL</td>
<td>33</td>
</tr>
<tr>
<td><em>Asadullah Shah and Khamran Khowaza</em></td>
<td></td>
</tr>
<tr>
<td>7. ITERATIVE STRUCTURES</td>
<td>39</td>
</tr>
<tr>
<td><em>Asadullah Shah and Khamran Khowaza</em></td>
<td></td>
</tr>
</tbody>
</table>
8. THE FOR LOOP
Asadullah Shah and Khamran Khowaza ......................................................... 49

9. THE DO-WHILE LOOP
Asadullah Shah and Khamran Khowaza ......................................................... 55

10. REVIEW OF VARIABLES, FORMATTING
Asadullah Shah and Khamran Khowaza ......................................................... 59

11. REVIEW OF ITERATIVE STRUCTURES
Asadullah Shah and Sumbul Khowaza ............................................................ 63

12. POST-TEST AND NESTED LOOPS
Asadullah Shah and Sumbul Khowaza ............................................................ 73

13. FUNCTIONS
Asadullah Shah and Sumbul Khowaza ............................................................ 83

14. CALL-BY-VALUE AND REFERENCE
Asadullah Shah and Sumbul Khowaza ............................................................ 91

15. MORE ON FUNCTIONS
Asadullah Shah and Sumbul Khowaza ............................................................ 99

16. STRUCTURES (STRUCT) AND FILES
Asadullah Shah and Muniba Shaikh ............................................................. 111

17. ARRAYS
Asadullah Shah and Muniba Shaikh ............................................................. 119

18. EXERCISE OF ARRAY
Asadullah Shah and Muniba Shaikh ............................................................. 127
30. C++ REFERENCES
Asadullah Shah and Ejaz Ahmed .............................................................. 223

31. CONST CORRECTNESS
Asadullah Shah and Osama Mahfooz ....................................................... 229

32. MORE ON CONST KEYWORDS
Asadullah Shah and Osama Mahfooz ....................................................... 235

33. GOTO STATEMENT
Asadullah Shah and Osama Mahfooz ....................................................... 241

34. HANDLING ERRORS IN C++
Asadullah Shah and Osama Mahfooz ....................................................... 249

35. STATIC: THE MULTIPURPOSE KEYWORD
Asadullah Shah and Osama Mahfooz ....................................................... 253
10. REVIEW OF VARIABLES, FORMATTING

Asadullah Shah and Khamran Khowaza
Department of Computer Science, Faculty of Information and Communication Technology, International Islamic University Malaysia, Malaysia

Abstract

The variables are names assigned to data types, each variable once declared within a program is assigned to a memory space. Some variables might occupy less space than others. All variables are equality important and computer programs once make use of these variables stick to their types throughout the program executions.

10.1 Variables

A variable is a name assigned to the first byte of the memory to store a value. During compilation the compiler reserve required memory for each variable. For some variables the compiler may reserve more than one byte to store a value. This is why a type is always associated with a variable. For example in a 16-bit processor 2 bytes are used to store an integer, 4 bytes for floats, 8 bytes for double, and 1 byte for character and bool. The size of memory can be determined by the operator sizeof.

For example, cout << sizeof(x): if x is an float, 4 bytes will be reserved and for an integer 2 bytes are displayed.

Variable types can be signed or unsigned. For example, in a signed integer variable the range of values are -32,768 to +32,767. In an unsigned integer this range is from 0 to 65,535. Float and double are real numbers and contain factional parts of the number, the difference among them is their precision.