# Interesting facts about **switch** statement in C

Switch is a control statement that allows a value to change control of execution**.**

#include <stdio.h>

int main**()**

**{**

int x **=** 2**;**

**switch** **(**x**)**

**{**

**case** 1**:** printf**(**"Choice is 1"**);**

**break;**

**case** 2**:** printf**(**"Choice is 2"**);**

**break;**

**case** 3**:** printf**(**"Choice is 3"**);**

**break;**

**default:** printf**(**"Choice other than 1, 2 and 3"**);**

**break;**

**}**

**return** 0**;**

**}**

Output**:**

Choice is 2

Following are some interesting facts about **switch** statement**.**

## 1) The expression used in **switch** must be integral type **(** int**,** char and enum**).** Any other type of expression is not allowed**.**

// float is not allowed in switch

#include <stdio.h>

int main**()**

**{**

float x **=** 1.1**;**

**switch** **(**x**)**

**{**

**case** 1.1**:** printf**(**"Choice is 1"**);**

**break;**

**default:** printf**(**"Choice other than 1, 2 and 3"**);**

**break;**

**}**

**return** 0**;**

**}**

Output**:**

Compiler Error**:** **switch** quantity not an integer

## 2**)** All the statements following a matching **case** execute until a **break** statement is reached**.**

// There is no break in all cases

#include <stdio.h>

int main**()**

**{**

int x **=** 2**;**

**switch** **(**x**)**

**{**

**case** 1**:** printf**(**"Choice is 1\n"**);**

**case** 2**:** printf**(**"Choice is 2\n"**);**

**case** 3**:** printf**(**"Choice is 3\n"**);**

**default:** printf**(**"Choice other than 1, 2 and 3\n"**);**

**}**

**return** 0**;**

**}**

Output**:**

Choice is 2

Choice is 3

Choice other than 1**,** 2 and 3

// There is no break in some cases

#include <stdio.h>

int main**()**

**{**

int x **=** 2**;**

**switch** **(**x**)**

**{**

**case** 1**:** printf**(**"Choice is 1\n"**);**

**case** 2**:** printf**(**"Choice is 2\n"**);**

**case** 3**:** printf**(**"Choice is 3\n"**);**

**case** 4**:** printf**(**"Choice is 4\n"**);**

**break;**

**default:** printf**(**"Choice other than 1, 2, 3 and 4\n"**);**

**break;**

**}**

printf**(**"After Switch"**);**

**return** 0**;**

**}**

Output**:**

Choice is 2

Choice is 3

Choice is 4

After Switch

## 3) The **default** block can be placed anywhere**.** The position of **default** doesn’t matter**,** it is still executed **if** no match found**.**

// The default block is placed above other cases.

#include <stdio.h>

int main**()**

**{**

int x **=** 4**;**

**switch** **(**x**)**

**{**

**default:** printf**(**"Choice other than 1 and 2"**);**

**break;**

**case** 1**:** printf**(**"Choice is 1"**);**

**break;**

**case** 2**:** printf**(**"Choice is 2"**);**

**break;**

**}**

**return** 0**;**

**}**

Output**:**

Choice other than 1 and 2

## 4**)** The integral expressions used in labels must be a constant expressions

// A program with variable expressions in labels

#include <stdio.h>

int main**()**

**{**

int x **=** 2**;**

int arr**[]** **=** **{**1**,** 2**,** 3**};**

**switch** **(**x**)**

**{**

**case** arr**[**0**]:** printf**(**"Choice 1\n"**);**

**case** arr**[**1**]:** printf**(**"Choice 2\n"**);**

**case** arr**[**2**]:** printf**(**"Choice 3\n"**);**

**}**

**return** 0**;**

**}**

Output**:**

Compiler Error**:** **case** label does not reduce to an integer constant

## 5**)** The statements written above cases are never executed After the **switch** statement**,** the control transfers to the matching **case,** the statements written before **case** are not executed**.**

// Statements before all cases are never executed

#include <stdio.h>

int main**()**

**{**

int x **=** 1**;**

**switch** **(**x**)**

**{**

x **=** x **+** 1**;** // This statement is not executed

**case** 1**:** printf**(**"Choice is 1"**);**

**break;**

**case** 2**:** printf**(**"Choice is 2"**);**

**break;**

**default:** printf**(**"Choice other than 1 and 2"**);**

**break;**

**}**

**return** 0**;**

**}**

Output**:**

Choice is 1

## 6**)** Two **case** labels cannot have same value

// Program where two case labels have same value

#include <stdio.h>

int main**()**

**{**

int x **=** 1**;**

**switch** **(**x**)**

**{**

**case** 2**:** printf**(**"Choice is 1"**);**

**break;**

**case** 1**+**1**:** printf**(**"Choice is 2"**);**

**break;**

**}**

**return** 0**;**

**}**

Output**:**

Compiler Error**:** duplicate **case** value