3 Ways to Implement Python Switch Case Statement

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Most programming languages have a switch or case statement that lets you execute different blocks of code based on a variable. In this article, we will learn what is the switch case statement and its requirements. We will also learn whether python language has a switch case statement or not and if yes then how to apply it. Further, we will learn 3 different methods to implement the python switch case statement, along with complete syntax. So, let's get started!

What is a Switch statement?

In computer programming, a switch case statement is a kind of selection control system used to allow the value of the variable to change the control flow of program execution. The switch case statement is similar to the 'if' statement in any programming language. The switch case statement is a replacement of the 'if..else' statement in any program. The advantages of using the Switch Case Statement in the program are as given below:

1. It is easier to debug.
2. It is easier to read the program by anyone except the programmer.
3. It is easier to understand and also easier to maintain.
4. It is easier to verify all values that are to be checked are handled.

So, in short, the switch statement allows us to execute one code block among many alternatives in the program.

Need of Switch Case Statement

While programming, there are times when we need to execute the specific block of code depending on some other situation. If the given situation does not satisfy, the code block is skipped and does not get executed. If we check and apply these blocks of codes manually without any format, the length and complexity of the code will increase.

A switch statement allows a variable to be tested for being one of a number of p[...] different instructions executed depending on which value is found. Adding a swit[...] program is almost always an improvement. The switch statement is definitely so[...] way it can hurt is if you are using an expression that can be simplified away by th[...] you accept every day has the potential to confuse the compiler.

Switch Statement in C++/Java

Before moving towards learning the switch case statement in python language [...] let us first understand the switch case statement in C++ or Java language. In the switch case statement, the variable is compared to the list of values. This value is known as **case** and the variable keeps on checking the valu[...] until it becomes the same.

```
    case constant-expression  :
        statement(s);
        break; //optional
    case constant-expression  :
        statement(s);
        break; //optional

    // multiple number of case statement is allowed
    default : //Optional
        statement(s);
}
```

Explanation of code:

- **Expression:** It should be an integral type or enumerated type.
- **Constant expression:** The constant expression should have the same data type as the variable to be compared with and also it must be literal or constant.
- **Break:** The break statement is used to terminate the switch statement if the case value matches the variable value. After the break statement, the flow control of the program jumps to the next line of code immediately after the switch case statement.
- **Default:** The default case is used in a switch statement for the situation where no case is executed. Declaring the default case is optional.

Example:

```cpp
#include
using namespace std;

int main () {

    int marks = '10';

    switch(grade) {
        case '5' :
            cout << "You scored 5 marks" << endl;
            break;
        case '7' :
        case '7' :
            cout << "You scored 7 marks" << endl;
            break;
        case 'D' :
            cout << "You scored 10 marks" << endl;
            break;
        default :
            cout << "You scored 0 marks" << endl;
    }
    cout << "Your marks is " << marks << endl;

    return 0;
}
```

Output:

```
You scored 10 marks
Your marks are 10
```

Is there any python switch statement?

It is usually found that the use of switch statements is very rare while programming in the python language. So, always a question arises whether the python language supports the switch case statements or not? **Well, the answer to this question is NO.** Unlike any other programming language, python lo[...] statement functionality. This is also a trick question for students to get in their py[...] other alternatives which can replace the switch case statement functionality an[...] and faster. Let us study each python switch statement one by one below.

How to implement Switch Case in Pytho[...]

As we studied that the python language does not use a switch case statement li[...] different replacements to implement a python switch case with syntax.

1. If-elif-else
2. Dictionary Mapping

Method 1) If-elif-else

If-elif is the shortcut for the if-else chain. We can use the if-elif statement and add the else statement at the end which is performed if none of the above if-elif statement is true.

Python Switch Syntax with If-elif-else:

```python
if (condition):
    statement
elif (condition):
    statement
.
.
else:
    statement
```

Example:

```python
# if-elif statement example

fruit = 'Banana'

if fruit == 'Mango':
    print("letter is Mango")

elif fruit == "Grapes":
    print("letter is Grapes")

elif fruit == "Banana":
    print("fruit is Banana")

else:
    print("fruit isn't Banana, Mango or Grapes")
```

The output of the above code will be as given below:

Output:

```
fruit is Banana
```

Method 2) Dictionary Mapping

If you know the basic python language then you must be familiar with a dictionary and its pattern of storing a group of objects in memory using key-value pairs. So, when we use the dictionary to replace the Switch case statement, the key value of the dictionary data type works as cases in a switch statement.

Example:

```python
def tuesday():
    return "tuesday"
def wednesday():
    return "wednesday"
def thursday():
    return "thursday"
def friday():
    return "friday"
def saturday():
    return "saturday"
def sunday():
    return "sunday"
def default():
    return "Incorrect day"

switcher = {
    1: monday,
    2: tuesday,
    3: wednesday,
    4: thursday,
    5: friday,
    6: saturday,
    7: sunday
    }

def switch(dayOfWeek):
    return switcher.get(dayOfWeek, default)()

print(switch(3))
print(switch(5))
```

Output:

```
wednesday
friday
```

Method 3) Using classes

Along with the above methods to implement the switch case in python language, we can also use python classes to implement the switch case statement. An object constructor that has properties and methods is called a class. So, let us see the example of performing a switch case using class by creating a switch method inside the python switch class.

Example:

```python
        return getattr(self, 'case_' + str(dayOfWeek), lambda: default)()

    def case_1(self):
        return "monday"


    def case_2(self):
        return "tuesday"


    def case_3(self):
        return "wednesday"


    def case_4(self):
        return "thursday"


    def case_5(self):
        return "friday"


    def case_7(self):
        return "saturday"

    def case_6(self):
        return "sunday"

my_switch = PythonSwitch()

print (my_switch.day(1))

print (my_switch.day(3))
```

Output:

```
monday
wednesday
```

Conclusion

In this blog, we studied what is switch case and its implementation in python language using 3 ways as python does not have the functionality to use a switch statement, unlike other languages. Now you also code for python switch case to try it yourself. Therefore, it is highly recommended to use a python switch statement while programming because it increases the coding efficiency and easier to implement.

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" I'm Shivali Bhadaniya, a computer engineer student and technical content writer, very enthusiastic to learn and explore new technologies and looking towards great opportunities. It is amazing for me to share my knowledge through my content to help curious minds. "

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Output String : "Python"