How to pass and return object from C++ Functions?

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In this tutorial, we will learn to pass objects to a function and return an object from a function in C++ programming.

In C++ programming, we can pass objects to a function in a similar manner as passing regular arguments.

Example 1: C++ Pass Objects to Function

```cpp
// C++ program to calculate the average marks of two students

#include <iostream>
using namespace std;

class Student {

    public:
     double marks;

     // constructor to initialize marks
     Student(double m) {
         marks = m;
     }
};

// function that has objects as parameters
void calculateAverage(Student s1, Student s2) {

    // calculate the average of marks of s1 and s2
    double average = (s1.marks + s2.marks) / 2;

    cout << "Average Marks = " << average << endl;

}

int main() {
    Student student1(88.0), student2(56.0);

  // pass the objects as arguments
   calculateAverage(student1, student2);

    return 0;
}
```

Output

```
Average Marks = 72
```

Here, we have passed two `Student` objects *student1* and *student2* as arguments to the `calculateAverage()` function.

```cpp
#include<iostream>

class Student {...};

void calculateAverage(Student s1, Student s2) {
    // code
}

int main() {
    ... ...
    calculateAverage(student1, student2);
    ... ...
}
```

Pass objects to function in C++

Example 2: C++ Return Object from a Function

```cpp
#include <iostream>
using namespace std;

class Student {
    public:
      double marks1, marks2;
};

// function that returns object of Student
Student createStudent() {
    Student student;

    // Initialize member variables of Student
    student.marks1 = 96.5;
    student.marks2 = 75.0;

    // print member variables of Student
    cout << "Marks 1 = " << student.marks1 << endl;
    cout << "Marks 2 = " << student.marks2 << endl;

    return student;
}

int main() {
    Student student1;

    // Call function
    student1 = createStudent();

    return 0;
}
```
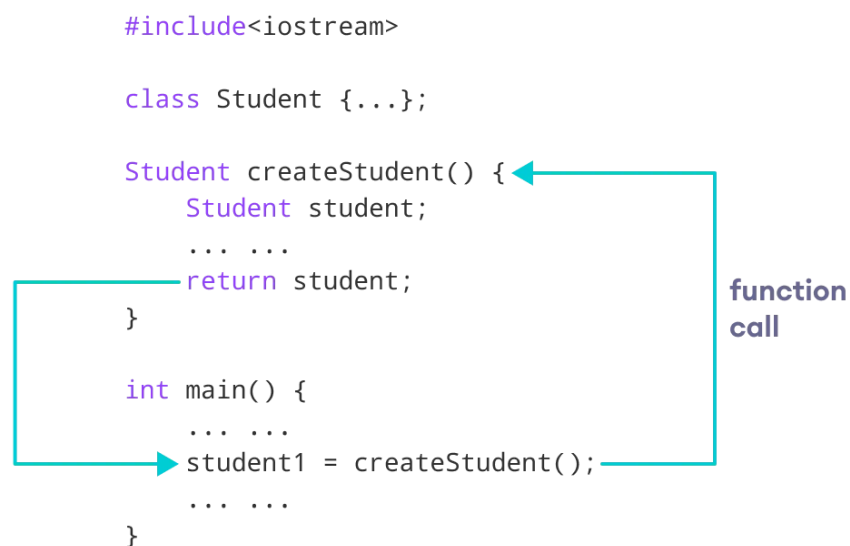
Output

```
Marks1 = 96.5
Marks2 = 75
```


Return object from function in C++

In this program, we have created a function `createStudent()` that returns an object of `Student` class.

We have called `createStudent()` from the `main()` method.

```
// Call function
student1 = createStudent();
```

Here, we are storing the object returned by the `createStudent()` method in the *student1*.