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Funksiyalar bilan ishlash

(user-defined functions)

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Reja:

- Funksiyani e’lon qilish
- Funksiyaga murojaat qilish
- Funksiya parametrlari
- Default qiymatli parametrlar
- Amaliy mashqlar

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Funksiya

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Funksiya - ma'lum bir vazifani bajaruvchi, qandaydir nomga ega, bir yoki bir nechta qiymatni qabul qiluvchi, ishni tugatganidan keyin esa asosiy dasturga biror yoki bir necha natija qiymatlarini qaytaruvchi qism dastur.

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Funksiyani e’lon qilish

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Syntax

```
returnType functionName (parameter1, parameter2,...) {
    // function body
}
```

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Example

```
int add (int a, int b) {
    return (a + b);
}
```

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Bunda:

1) Funksiya nomi: **add**
2) Funksiyaning qaytaruvchi qiymat turi: **int**
3) Parametrlar: **int** turidagi **a** va **b**
4) Funksiya tanasi: **{} qavslar ichida yozilgan kod**

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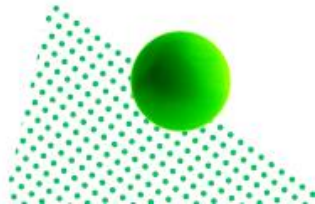
Funksiyaga murojaat qilish



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```cpp
#include <iostream>

using namespace std;

// declaring a function
int add(int a, int b) {
    return (a + b);
}

int main() {

    int sum;

    // calling the function and storing
    // the returned value in sum
    sum = add(100, 78);

    cout << "100 + 78 = " << sum << endl;

    return 0;
}
```

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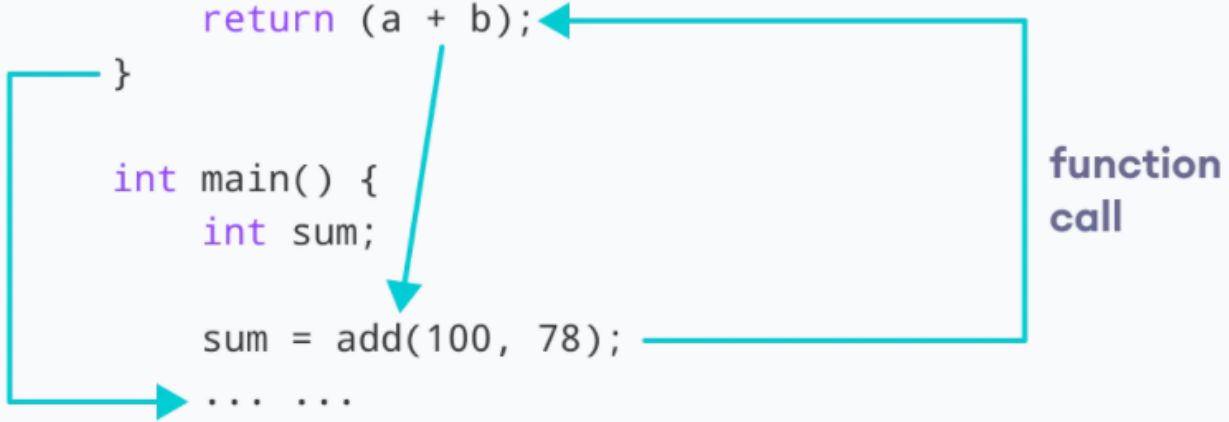
```
#include<iostream>

int add(int a, int b) {
    return (a + b);
}

int main() {
    int sum;

    sum = add(100, 78);
    ... ...
}
```



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Output

```
100 + 78 = 178
```

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Function prototype

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Syntax

```
returnType functionName(dataType1, dataType2, ...);
```

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Example

```
// function prototype
int add(int, int);
```

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```cpp
#include <iostream>

using namespace std;

// function prototype
int add(int, int);

int main() {
    int sum;

    // calling the function and storing
    // the returned value in sum
    sum = add(100, 78);

    cout << "100 + 78 = " << sum << endl;

    return 0;
}

// function definition
int add(int a, int b) {
    return (a + b);
}
```

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Output

```
100 + 78 = 178
```

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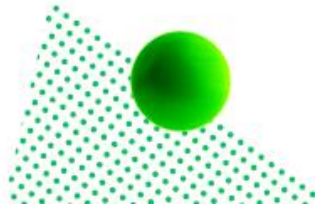
Funksiya parametrlari



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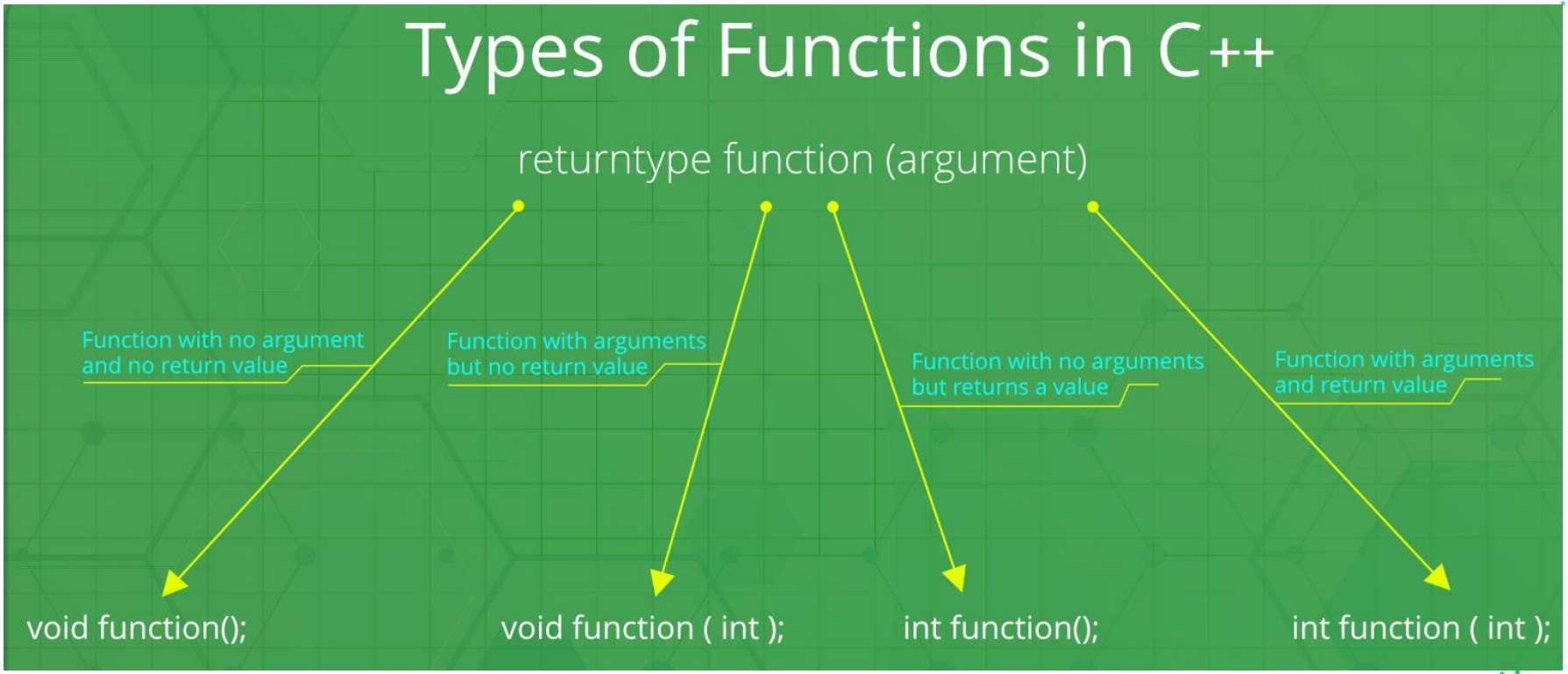

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Example-1

```
// function declaration
void greet() {
    cout << "Hello World";
}
```

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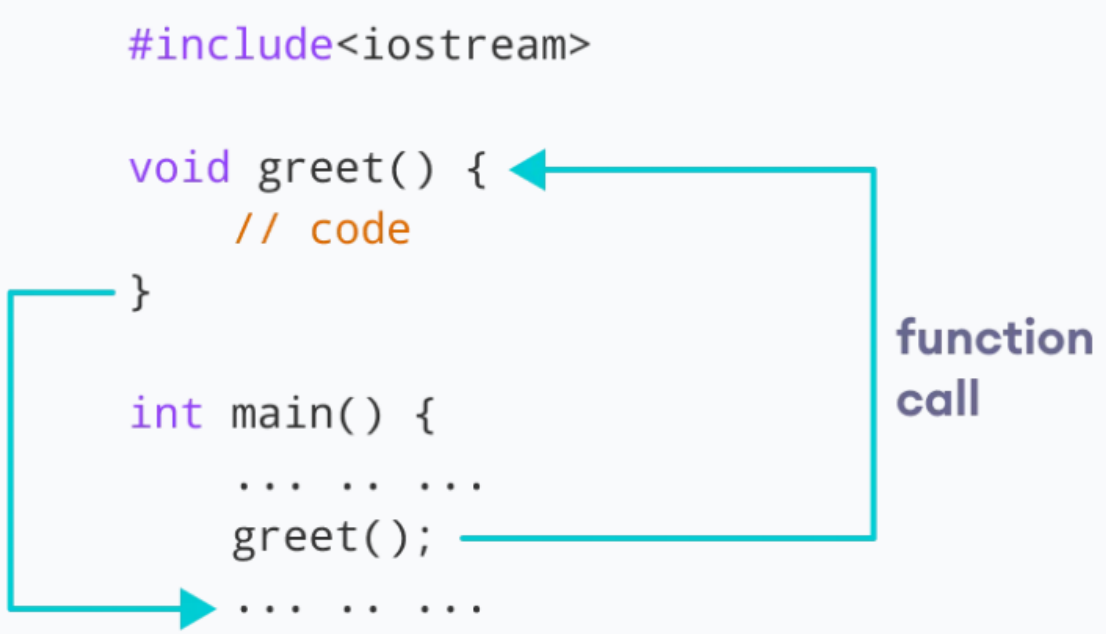
```
#include<iostream>

void greet() {
    // code
}

int main() {
    ... .. ...
    greet();
    ... .. ...
}
```



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Example-2

```
// display a number
void displayNum(int n1, float n2) {
    cout << "The int number is " << n1;
    cout << "The double number is " << n2;
}
```

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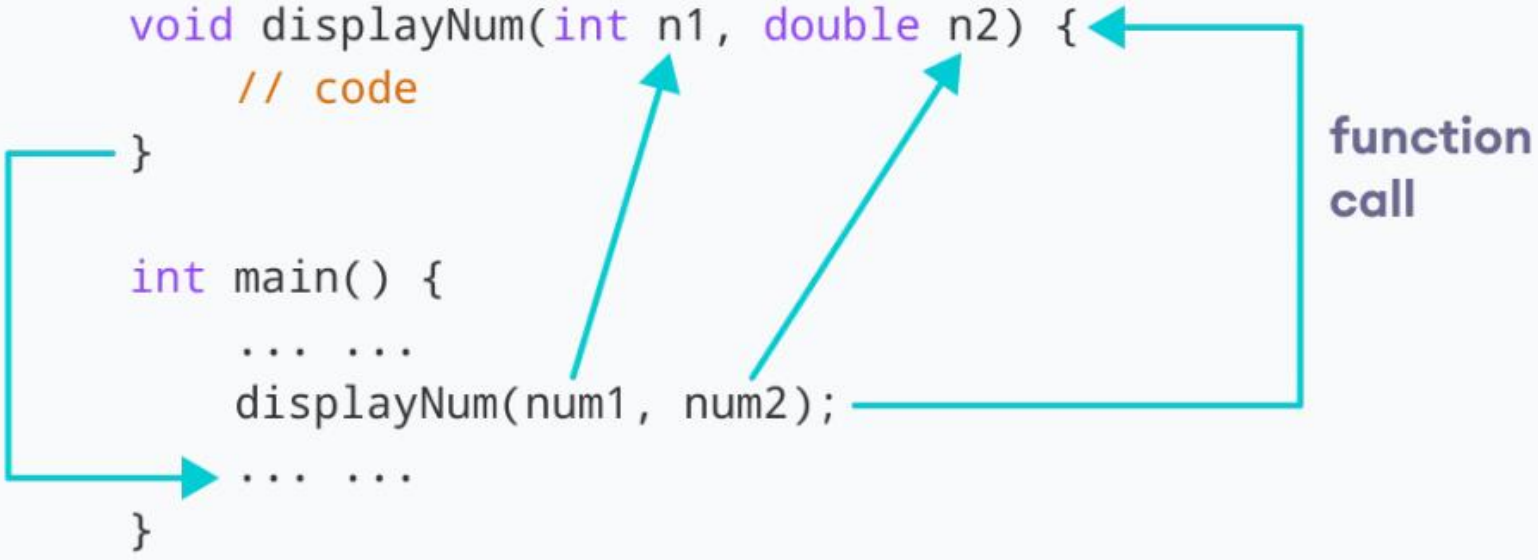
```
#include<iostream>

void displayNum(int n1, double n2) {
    // code
}

int main() {
    ... ...
    displayNum(num1, num2);
    ... ...
}
```



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

// display a number
void displayNum(int n1, float n2) {
    cout << "The int number is " << n1;
    cout << "The double number is " << n2;
}

int main() {

     int num1 = 5;
     double num2 = 5.5;

    // calling the function
    displayNum(num1, num2);

    return 0;
}
```

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Output

```
The int number is 5
The double number is 5.5
```

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Default qiymatli parametrlar

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Default qiymatli parametrlar funksiyaga murojaat qilishda aynan shu parametrlarga qiymat bermasdan funksiyani chaqirish imkonini beradi.

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Example-1

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

void info(string = "Yusuf",int = 20);

int main()
{
    info();
}

void info(string name,int age)
{
    cout << name <<" is "<< age <<" years old";
}
```

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Output

```
Yusuf is 20 years old
```

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Example-2

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

void info(string = "Yusuf",int = 20);

int main()
{
    info("Abror");
}

void info(string name,int age)
{
    cout << name <<" is "<< age <<" years old";
}
```

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Output

```
Abror is 20 years old
```

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Example-3

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

void info(string = "Yusuf", int = 20);

int main()
{
    info("Alibek", 25);
}

void info(string name,int age)
{
    cout << name <<" is "<< age <<" years old";
}
```

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Output

```
Alibek is 25 years old
```

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Amaliy mashqlar

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Berilgan 3 ta sonning o’rta arifmetigini hisoblab, natija sifatida qaytaruvchi funksiya tuzing.

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Berilgan 3 ta sonning eng kattasini aniqlab, natija sifatida qaytaruvchi funksiya tuzing.

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Berilgan 5 ta sondan manfiylarining yig’indisini aniqlab, natija sifatida qaytaruvchi funksiya tuzing.

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Berilgan natural sonning raqamlari yig‘indisi hisoblab, natija sifatida qaytaruvchi funksiya tuzing.

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Foydalanuvchi tomonidan kiritilgan ismga salom beruvchi helloName() funksiyasini tuzing.

Masalan:

helloName(“Bob”) -> “Hello Bob”;

helloName(“X”) -> “Hello X”;

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Berilgan 2 ta natural sonning EKUB (eng katta umumiy bo’luvchi) ni hisoblab, natija sifatida qaytaruvchi funksiya tuzing.

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Berilgan 2 ta natural sonning EKUK (eng kichik umumiy karrali) ni hisoblab, natija sifatida qaytaruvchi funksiya tuzing.

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E`tiboringiz uchun rahmat!