Command Line Arguments

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Examples: Why Command Line Arguments

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- `apt-get install vlc`
- `git commit -a -m "correction of problem 3!"`
- `cp [file] [target path]`

Command Line Arguments in C and C++

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```cpp
#include <iostream>
// argc is counter for the arguments, including the application-name.
// argv is array of strings representing the arguments.
int main( int argc, char *argv[] )
{
    std::cout << "Arguments count:" << argc << std::endl;

    for( int i = 0 ; i < argc ; ++i )
    {
        std::cout << "Argument:" << argv[ i ] << std::endl;
    }
}
```

Example: Simple calculater from command line arguments

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```
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argv[0]	"./MyCalculator"	App Name
argv[1]	"12.4"	operand a
argv[2]	"/"	operation
argv[3]	"3.2"	operand b

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int x = "40"; // Compiler Error (Type Mismatch)

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- `std::atof` converts a string representation => double representation.

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- `std::atoi` converts string representation => integer representation.
- `std::atof` converts a string representation => double representation.
- `#include <cstdlib>`.

```cpp
#include <iostream>
#include <cstdlib>

// Our logic
double calculation( double a , double b , char operation );

int main( int argc , char *argv[] )
{
    double a = std::atof( argv[1] );
    double b = std::atof( argv[3] );

    char *op_string = argv[2];
    char op = op_string[0];

    std::cout << calculcation( a , b , op ) << std::endl;
    return 0;
}
```

```c
double calculation( double a , double b , char operation )
{
  switch( operation )
  {
    case '+': return a + b;
    case '-': return a - b;
    case 'x': return a * b;
    case '/': return a / b;
    default:  return 0;
  }
}
```

argv[0]	"./MyCalculator"	App Name
argv[1]	"12.4"	operand a
argv[2]	"/"	operation
argv[3]	"3.2"	operand b

Making Your Own Header Libraries

{DRY}

i.e Don't repeat your self

- Don't copy codes.
- If you need to fix a mistake, fix it from one place.

my_library.hpp

```
double calculation( double a, double b, char op)
{
// Some logic.
}
```

calculator_args.cpp

```
#include " my_library .hpp"

int main( int argc, char** argv)
{
}
```

calculator_cin.cpp

```
#include " my_library .hpp"

int main( )
{
}
```

Compile

Compile

g++ calculator_args.cpp -o calc_args

g++ calculator_cin.cpp -o calc_cin

calc_args

calc_cin