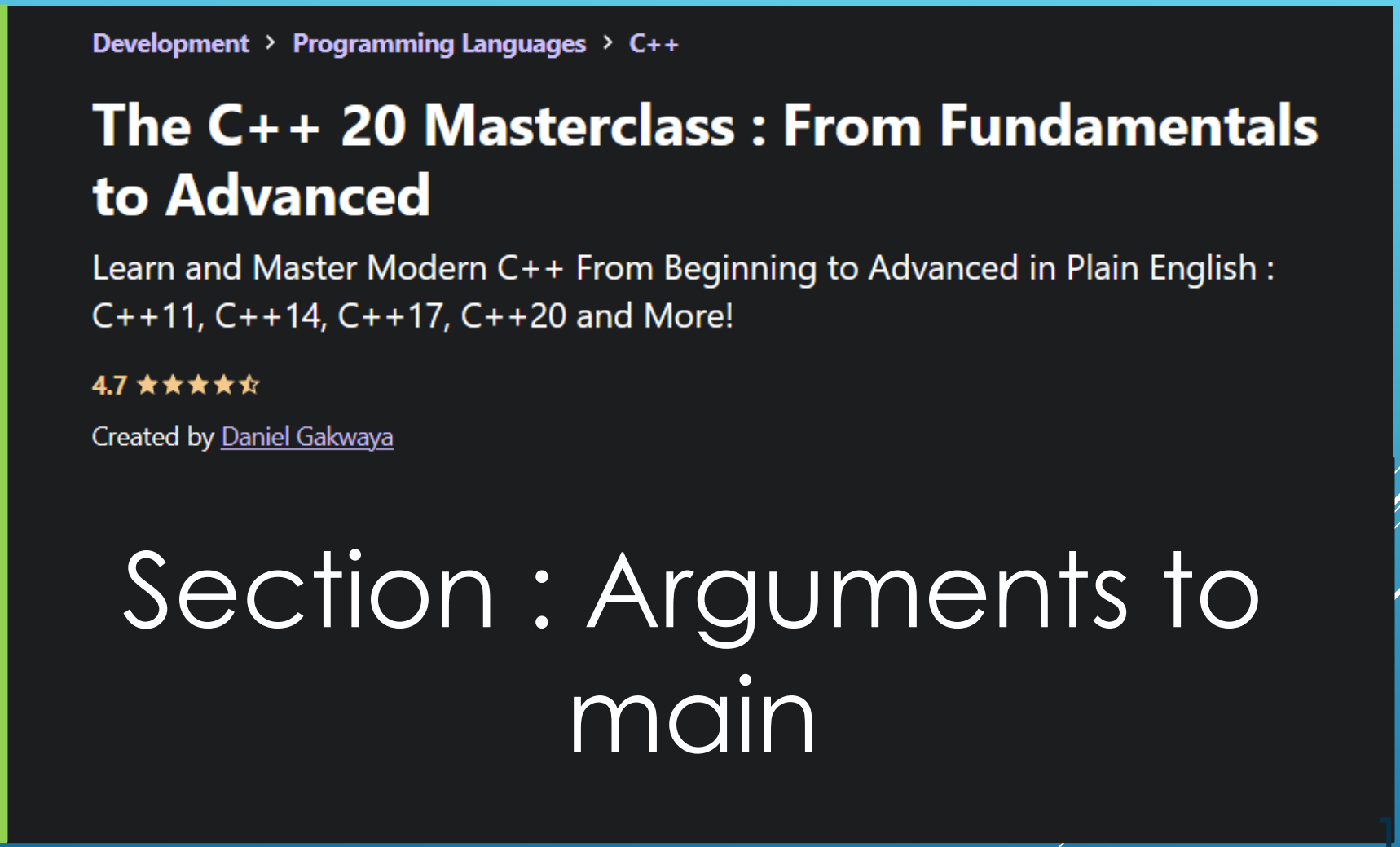
Slides



Section : Arguments to main

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Arguments to the main function : Intro

```cpp
int main(int argc, char **argv)
//int main(int argc , char* argv[])
{
    std::cout << "We have " << argc << " arguments passed to the program" << std::endl;

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

    return 0;
}
```

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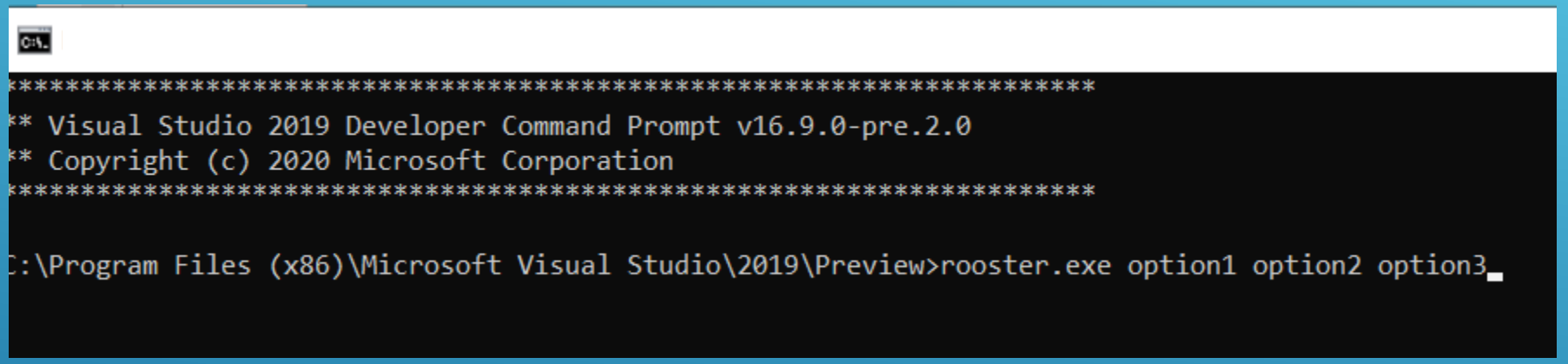
Grab and use main function arguments

```cpp
int main(int argc, char **argv)
//int main(int argc , char* argv[])
{
    std::cout << "We have " << argc << " arguments passed to the program" << std::endl;

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

    return 0;
}
```


****
** Visual Studio 2019 Developer Command Prompt v16.9.0-pre.2.0
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C:\Program Files (x86)\Microsoft Visual Studio\2019\Preview>rooster.exe option1 option2 option3

Passing the arguments

- Through an IDE
- On the terminal when calling program

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CalculatorV1

```
int main(int argc, char **argv)
{
    double first_number {12.3};
    double second_number {33.1};
    char c{'-'};

    switch(c){
        case '+':
        std::cout << first_number << " + " << second_number << " = "
                << first_number + second_number << std::endl;
        break;

        case '-':
        std::cout << first_number << " - " << second_number << "="
                << first_number - second_number << std::endl;
        break;

        /* ...
    }
    return 0;
}
```

Problem

- All input is hardcoded in source code
- To change the operation, you have to recompile the program : BAD!

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CalculatorV2

Error check – Data collection

```
if(argc != 4){
    std::cerr << "Program can only be called with 3 arguments like: " << std::endl;
    std::cerr << "Program_name a + b" << std::endl;
    std::cerr << "You called with : " ;
        for ( int i {0} ; i < argc ; ++i){
            std::cout <<" " <<  argv[i]  ;
        }
        std::cout << std::endl;
    return 0;
}

/* ...
double first_number {atof(argv[1])};
double second_number {atof(argv[3])};

if((first_number == 0.0) || (second_number == 0.0)){
    std::cout << "Please use valid numbers ( different from zero)" << std::endl;
    return 0;
}
```

Error check – Data collection

```
const char *operation { argv[2]};
char c;

if( (std::strlen(operation) == 1) &&
        ((operation[0] == '+') ||
        (operation[0] == '-') ||
        (operation[0] == 'x') || // x is for multiplication. * is interpreted
                                 // by the shell and disturbing things.
        (operation[0] == '/'))) {

            c = operation[0];
        }else{
            std::cout << operation << " is not a valid operation." << std::endl;
            return 0;
}
```

Use the data

```
switch(c){
    case '+':
    std::cout << first_number << "+" << second_number << "="
            << first_number + second_number << std::endl;
    break;

    case '-':
    std::cout << first_number << "-" << second_number << "="
            << first_number - second_number << std::endl;
    break;

    case 'x':
    std::cout << first_number << "*" << second_number << "="
            << first_number * second_number << std::endl;
    break;

    case '/':
    std::cout << first_number << "/" << second_number << "="
            << first_number / second_number << std::endl;
    break;
}
```

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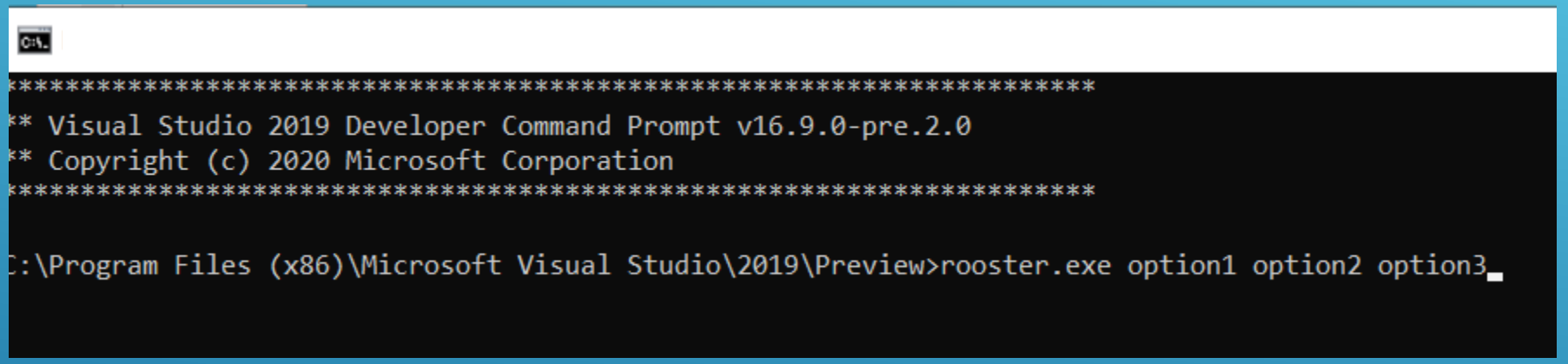
Arguments to the main function : Summary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    for ( int i {0} ; i < argc ; ++i){
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    }

    return 0;
}
```

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