Algorists Template for Talks

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Formulas and equations

- Example of math using an underscore and mathcal: $\mathfrak{a}_i \in \mathcal{A}$
- Example of math using an arrow and mathbb: $\overrightarrow{\beta} \notin \mathbb{B}$
- Example of math using an super script and mathbf: $\mathfrak{c}^k \subset \mathbf{C}$
- Following there is a more complicated formula:

$$\Gamma^n = \int_a^b \frac{4py}{k\epsilon} dy \times \begin{bmatrix} x & y & z \\ u & v & w \end{bmatrix}$$

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Code in C++

Let see what the code looks like:

```
for (auto& x: S) {
    if (x > 10) {
        printf("%d\n", x);
    }
}
```

Including source code files

You can also include a cpp file:

```
#include <iostream>

int function(int& x) {
    std::cout << "x = " << ++x << std::endl;
    return x;
}

int main(int argc, char const *argv[]) {
    int p = 4, q = 7;
    int y = p < q ? function(p) : function(q);
    std::cout << "y = " << y << std::endl;
    return 0;
}
```

Algorithm Example (LaTeX/algorithm2e)

```
1 while n > 5 do:
2 |   instructions;
3 |   if condition then
4 |   |   instructions1;
5 |   |   instructions2;
6 |   else:
7 |   |   instructions3;
8 |   end
9 end
```

Algorithm Example (pseudocode)

```
map of <string, integer> dictionary;
vector of integer numbers;
pair of <integer, integer> position;
set of integer S;
unique pointer of character c = null;
const reference
for each any x in S do:
    if x > 10 then:
        writeln("%d", x);
    end
end

integer index = 0;
repeat:
    index++;
until index >= 10;
```