C++ Cheatsheet II

Vectors

```
#include <vector>

std::vector<int> grades = {98, 87, 92};

std::cout << grades[0]; // Output: 98
```

Adding & Removing Elements

```
std::vector<std::string> dna = {"AUG"};

dna.push_back("UAA");    // {"AUG", "UAA"}
dna.pop_back();          // {"AUG"}
std::cout << dna.size() // Output: 1
```

Functions

```
void voicemail() {
  std::cout << "Hi, I'm not here, bye!";
}
```

Parameters & Return Value

```
int add(int x, int y) {
  int answer = 0;
  answer = x + y;
  return answer;
}
```

Classes

```
class Student {
public:
  std::string name;
  int year;
private:
  double gpa;
  bool enrolled;
};

Student ferris;
```

Class Methods

```
class Employee {
  std::string name;
  int id;
  double salary;

  void display_info() {
    std::cout << "👤" << name << id << ".";
  }

  Employee(std::string n, int i, double s) {
    name = n;
    id = i;
    salary = s;
};
```

Pointers

```
int x = 420;       // x is 420
int* p = &x;       // p is 0x7ffeefbff4b0
```

Dereferencing

```
int* p = &x;
std::cout << *p << "\n";  // 👈 dereference
```

Null Pointers

```
int* p = nullptr;     // always initialize
```

References

```
int cups = 10;
int& reference = cups;
reference = 20;
std::cout << cups << "\n";  // Output: 20
```

Pass by Reference

```
void swap(int &a, int &b) {
  int temp = a;
  a = b;
  b = temp;
}
```