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Classes

by Eddie Huang

A class is to a car factory as an object is to a car. Classes define the behavior of a type of object. They contain variables and functions that are inherent to the class.

A Simple Rectangle Example

rectangle.h

```
class Rectangle {
    int width, height;
public:
    Rectangle();
    Rectangle(int a, int b);
    int area() {
        return width * height;
    }
    int circumference();
};
```

rectangle.cpp

```
Rectangle::Rectangle() {
    width = 5;
    height = 5;
}

Rectangle::Rectangle(int a, int b) {
    this->width = a;
    this->height = b;
}

int Rectangle::circumference() {
    return (width + height) * 2;
}
```

main.cpp

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

int main() {
    Rectangle rect(3,4);
    Rectangle rect_default;
    cout << "rect area: " << rect.area() << endl;
    cout << "rect_default area: " <<
    rect_default.area() << endl;
    return 0;
}
```

Output

```
rect area: 12
rect_default area: 25
```