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Exercise 1

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

class Box {
   double length, width, height;
public:
   Box() : length(1.0), width(1.0), height(1.0) {}
   Box(double side) : length(side), width(side), height(side) {}
   Box(double l, double w, double h) : length(l), width(w), height(h) {}
   double volume() {
      return length * width * height;
   }
};

int      main()
   {        Box
   box1;
   Box box2(3.0);
   Box box3(2.0, 4.0, 5.0);
   cout << "Volume of box1: " << box1.volume() << endl;
   cout << "Volume of box2: " << box2.volume() << endl;
   cout << "Volume of box3: " << box3.volume() << endl;
   return 0;
}
```

Exercise 2

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

int main()
   { string
   name;
   cout << "Enter your name: ";
   cin >> name;
   cout << "Welcome " << name << endl;
   return 0;
}
```

Exercise 3

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

```
int main() {
int a, b;
    cout << "Enter two integers: ";
    cin >> a >> b;
    cout << "Sum: " << a + b << endl;
    return 0;
}
```

Exercise 4

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

class Car
    { string
    brand; int
    year;
public:
    void setInfo(string b, int y)
        { brand = b;
        year = y;
    }
    void displayInfo() {
        cout << "Brand: " << brand << ", Year: " << year << endl;
    }
};

int main()
    { Car
    myCar;
    myCar.setInfo("Toyota", 2022);
    myCar.displayInfo();
    return 0;
}
```

Exercise 5

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

class Rectangle
    { double length,
    width;
public:
    void setDimensions(double l, double w)
        { length = l;
        width = w;
    }
    double area() {
        return length * width;
    }
};
```

```
int main() {
    Rectangle rect;
    rect.setDimensions(5.0, 3.0);
    cout << "Area: " << rect.area() << endl;
    return 0;
}
```

Exercise 8

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

class Book {
    string title, author;
public:
    Book() : title("Unknown"), author("Anonymous") {}
    Book(string t, string a) : title(t), author(a) {}
    void display() {
        cout << "Title: " << title << ", Author: " << author << endl;
    }
};

int main()
    { Book
    book1;
    Book book2("1984", "George Orwell");
    book1.display();
    book2.display();
    return 0;
}
```

Exercise 10

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

```
class Student
    { string
    name; int
    age; double
    gpa;
public:
    Student() : name("Unknown"), age(18), gpa(0.0) {}
    Student(string n, int a, double g) : name(n), age(a), gpa(g) {}
    void displayInfo() {
        cout << "Name: " << name << ", Age: " << age << ", GPA: " << gpa << endl;
    }
};

int main()
    { Student s1;
    Student s2("Ali", 20, 3.5);
    s1.displayInfo();
    s2.displayInfo();
    return 0;
}
```