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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 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;

}

};

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;

}