

Padrões Comportamentais de Projeto

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Questão 1

Como seria o programa abaixo em C?

```
public class Person {  
    private int age;  
    public Person(int age) {  
        this.age = age;  
    }  
    public void happyBirthday() {  
        age++;  
    }  
    public int getAge() {  
        return age;  
    }  
}
```

```
public static void main() {  
    Person p1 = new Person(27);  
    Person p2 = new Person(25);  
    p1.happyBirthday();  
    System.out.println(p1.getAge());  
    System.out.println(p2.getAge());  
}
```

Questão 2

O que será impresso?

```
class Vehicle {  
    int position;  
    void move(int x) {  
        System.out.println("V::move");  
        position = position + x;  
    }  
}
```

```
class Car extends Vehicle {  
    int passengers;  
    void await(Vehicle v) {  
        System.out.println("C::await");  
        if (v.position < position)  
            v.move(position - v.position);  
        else  
            this.move(10);  
    }  
}
```

```
class Truck extends Vehicle {  
    void move(int x) {  
        System.out.println("T::move");  
        if (x <= 55) {  
            position = position + x;  
        }  
    }  
}
```

```
public class Driver {  
    public static void main() {  
        Truck t = new Truck();  
        Car c = new Car();  
        Vehicle v = c;  
        c.passengers = 2;  
        c.move(60);  
        v.move(70);  
        c.await(t);  
    }  
}
```

Questão 3

O que será impresso?

```
class A {  
    public static String f = "a";  
}  
  
class B extends A {  
    public static String f = "b";  
}  
  
class C extends B {  
    public static String f = "c";  
}  
  
class D extends A {  
    public static String f = "d";  
}
```

```
public class Stat {  
    public static void main() {  
        System.out.println(A.f);  
        System.out.println(B.f);  
        System.out.println(C.f);  
        System.out.println(D.f);  
        A a = new A();  
        A b = new B();  
        A c = new C();  
        A d = new D();  
        System.out.println(a.f);  
        System.out.println(b.f);  
        System.out.println(c.f);  
        System.out.println(d.f);  
    }  
}
```

Questão 4

Desenhe as tabelas virtuais das classes abaixo:

```
#include <stdio.h>
class A {
public:
    virtual int a() { return 1; };
};

class B {
public:
    virtual int b() { return 2; };
    virtual int c() { return 3; };
};

class C : public A {
public:
    virtual int d() { return 4; };
};

class D : public B, public C {
public:
    virtual int e() { return 5; };
};

int main() {
    D od;
    printf("%d\n", od.a());
    printf("%d\n", od.b());
    printf("%d\n", od.c());
    printf("%d\n", od.d());
    printf("%d\n", od.e());
    return 0;
}
```

Questão 5

Desenhe as tabelas virtuais das classes abaixo:

