Java

abstract

a) function [no body, only signature]

class [no object creation allowed]

eg a)
```
class C {
    abstract void fun();
    void fun1() {
    }
}
```

C++

→ pure virtual function

```
class C {
    virtual void fun() = 0;
    void fun1() {
    }
};
```

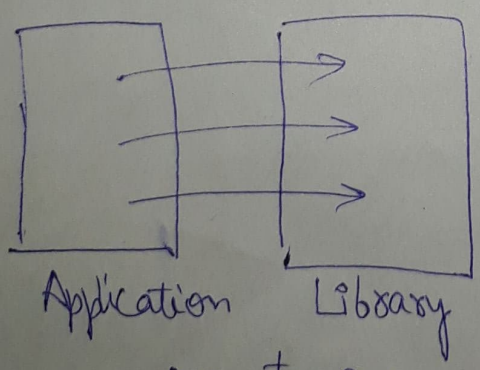
Q) Does being an abstract fn means class needs to be abstract? True

[Boz if we create object of class with abstract function it would result to a runtime error]

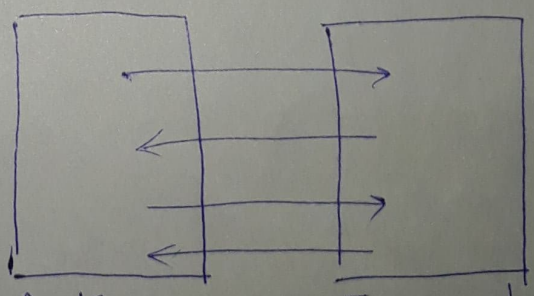
Q) Does being abstract class you need have abstract function? False

[Not necessary as we can have abstract class without an abstract function.]

→ When we derive an abstract class containing abstract fn's either you provide ~~you provide~~ definition for the abstract fn's or you yourself become abstract.



one-to-one



So we basically implement a framework by using the concept of abstract

Can we have a constructor for abstract class?

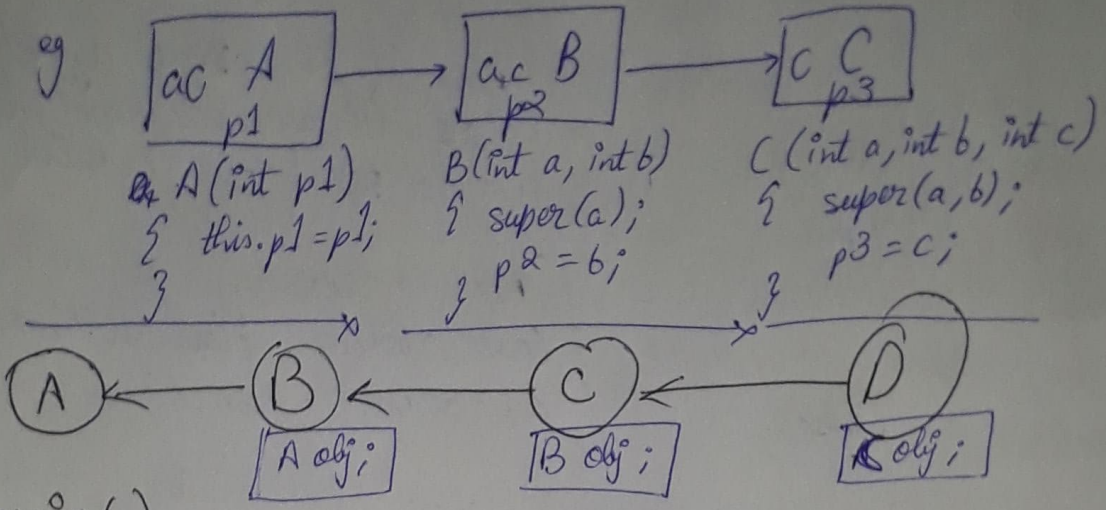
eg
```
ac P {                C : P {
    p1, p2;               p3, p4;
    ar fun();             fun() {
}                         }
                      }
```

`C o = new C();` ← This would have p1, p2, p3, p4

[P's constructor will be called, than C's constructor will be called.

- Destructor's would be fired in opposite direction.

for eg




```
main()
{ D d = new D(); }
```

O/P: A
B
A
C
A
B
A
D
A
B
A
C
A
B
A