Composition

The composition is a design technique in java to implement a **has-a** relationship.

If an object contains the other object and the contained object cannot exist without the existence of that object, then it is called composition

Advantages:

1. Composition allows the reuse of code.
2. Java doesn’t support multiple inheritance but by using composition we can achieve it.
3. Composition offers better test-ability of a class.
4. By using composition, we are flexible enough to replace the implementation of a composed class with a better and improved version.
5. By using composition, we can also change the member objects at run time, to dynamically change the behavior of your program.

\*\*\*\*\*\*\*\*\*\*\*\* first class \*\*\*\*\*\*\*\*\*\*\*\*\*\*

**public** **class** Composition {

**private** String name;

**private** String empid;

**public** Composition(String name, String empid) {

**this**.name = name;

**this**.empid = empid;

}

**public** String getName() {

**return** name;

}

**public** String getEmpid() {

**return** empid;

}

@Override

**public** String toString() {

**return** String.*format*(empid, **null**);

}

}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* second class \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**public** **class** Composition1 {

**private** **int** age;

**private** Double sal;

**public** Composition1(**int** age, Double sal) {

**this**.age = age;

**this**.sal = sal;

}

**public** **int** getAge() {

**return** age;

}

**public** Double getSal() {

**return** sal;

}

}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* composition class \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**public** **class** HasA {

**private** Composition details1;

**private** Composition1 details2;

**public** HasA(Composition details1, Composition1 details2) {

**this**.details1 = details1;

**this**.details2 = details2;

}

**public** Composition getDetails1() {

**return** details1;

}

**public** Composition1 getDetails2() {

**return** details2;

}

}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* main class \*\*\*\*\*\*\*\*\*\*\*\*\*

**public** **class** Main {

**public** **static** **void** main(String[] args) {

Composition cmp = **new** Composition("prudhvi", "123");

Composition1 cmp1 = **new** Composition1(123, 50.0);

HasA has = **new** HasA(cmp, cmp1);

System.***out***.println(has.getDetails1().getEmpid().toString());

}

}