

## Hierarchy

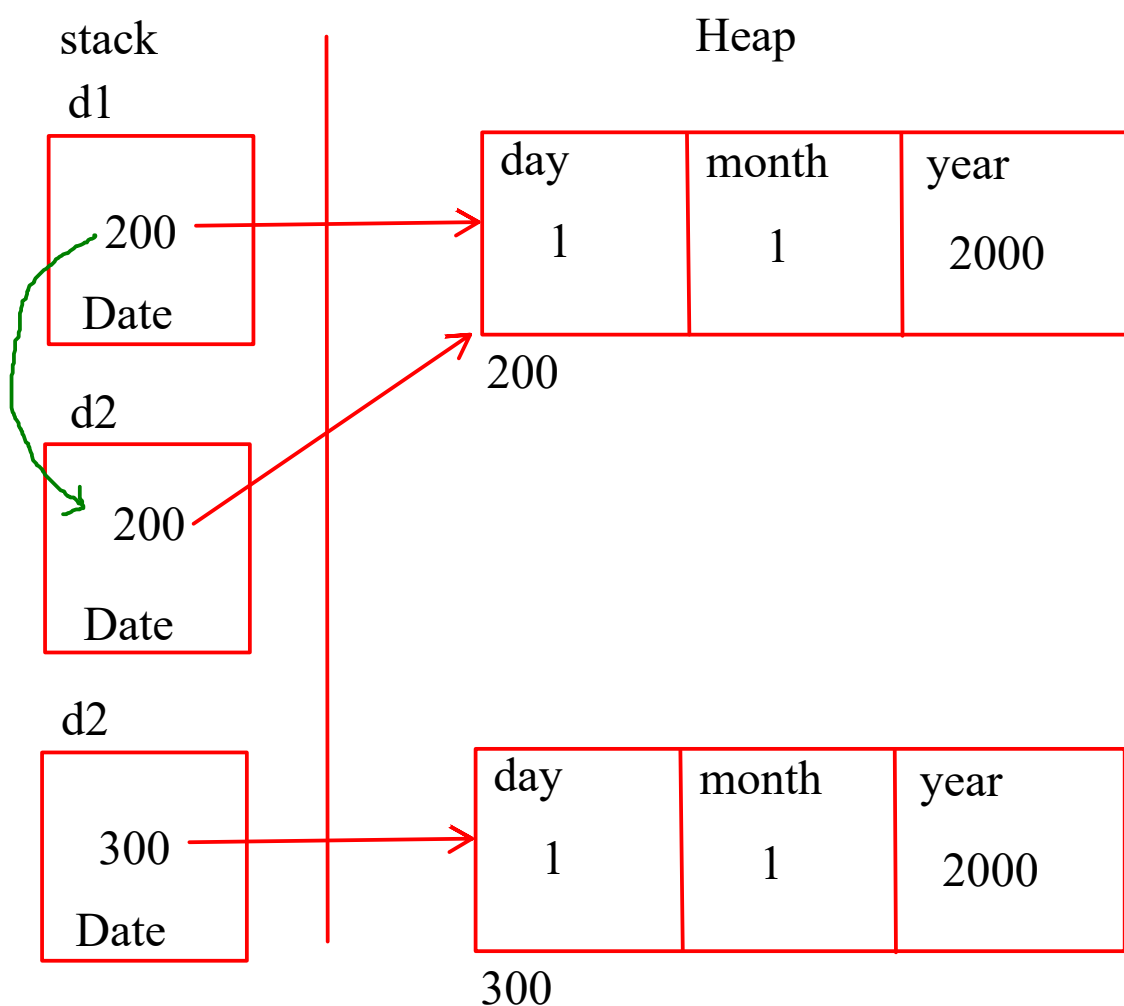
- has-a (Association)
  - Dependency class
  - Dependent class
- is-a (Inheritance)
  - Parent (Super)
  - Child (Sub)

Employee has-a Doj  
Employee has-a Car

```
Person{  
  
void accept()  
}
```

```
Employee{  
@override  
void accept()  
}
```

```
Person p = new Employee(); //Upcasting  
Employee e = (Employee)p; // Downcasting
```



Date d2 = d1;

Date d2 = new Date(1,1,2000);

## #abstract

- It is a keyword in java.
- It is an modifier that can be used for the methods and the class

## # abstract method

- If the implementation of the method is 100% incomplete then such methods should be declared as abstract
- abstract methods can be declared only inside abstract classes.

## # abstract class

- A class that consists of abstract methods is called as abstract class
- we have to use the abstract keyword before the class to declare it as abstract.
- these classes can have abstract as well as non abstract methods.
- we cannot create object of the abstract class, only we can create the reference.

Interface -> java 7

Fragile Base Class Problem

```
interface i1 {  
void m1();  
}
```

```
interface i2 {  
void m2();  
}
```

interface  
- It provides set of protocols  
- It provides the specifications

```
Employee {  
accept()  
display()  
abstract calculateTotalSalary();  
abstract calculateTotalTax();  
}
```

```
Manager() {  
accept()  
display();  
calculateTotalSalary();  
}
```

```
Saleman() {  
accept()  
display();  
calculateTotalSalary();  
}
```

