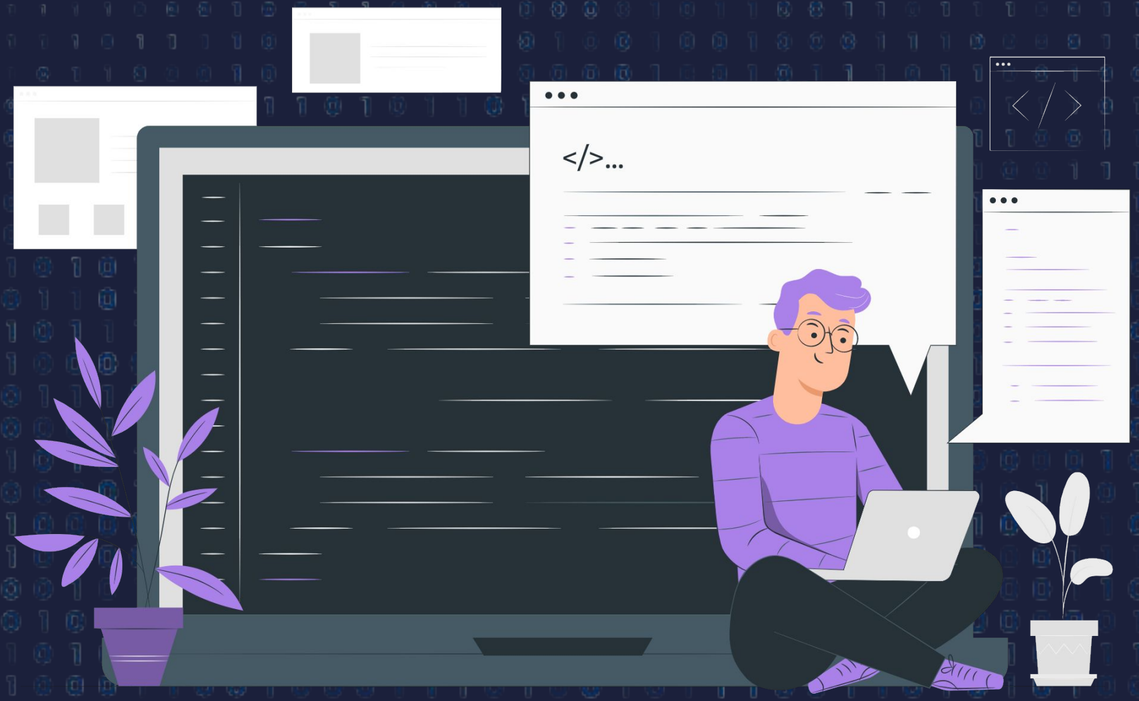
PW SKILLS

OOPS in Java



User defined data type

int , float , double , char , String ,

Cars
↓
Type

Class → 12^{th} - D → 50 students
↓
Roll No.
12^{th} Percentage
Name
Height

] Common Properties

User defined data type

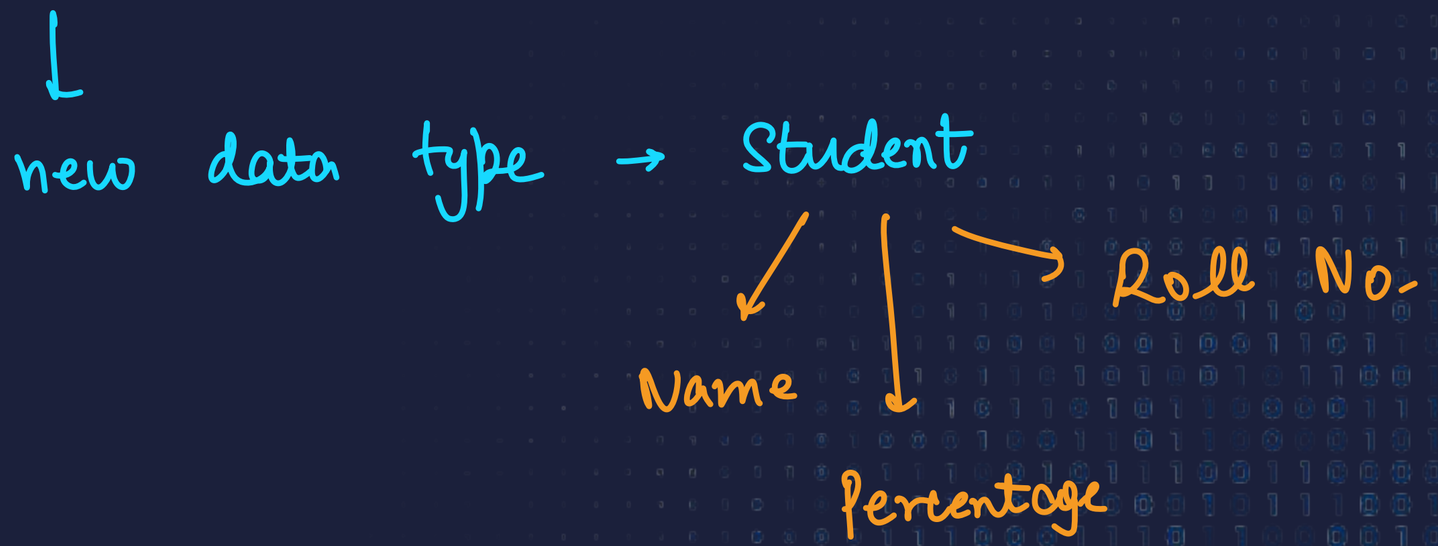
50 students

Name → String arr [50]

Roll No. → int brr [50]

Percentage → double crr [50]

Classes - creation



```java
public static class Student{
    1 usage
    String name;
    1 usage
    int rno;
    2 usages
    double percent;
}
public static void main(String[] args) {

    Student x = new Student();
    x.name = "Raghav";
    x.rno = 76;
    x.percent = 92.5;
    System.out.println(x.percent + 8);
}
```

→ data type creation

Objects – creation ✓

```
ClassName objectname = new ClassName();
```

```
Student s1 = new Student();
```

Alto, WagonR, Swift → Maruti Cars

- Objects are real life entities
- Classes are blueprints

State True or False

1) OOPS refer to using objects in programming.
2) Class is user defined blueprint through which objects are created.
3) Objects of same class have different properties / attributes.
4) Objects are instance of class.

Array v/s Class → user defined data type

Similar datatypes ko store → multiple

ek esa object create karna ho → multiple attributes

Scanner class yaad hai?

Passing Class to functions :

- We have to declare the class outside main.
- Classes are passed by reference
  ↓
  User defined data type

Class in different file.

↓

but same package..

- Diff. package me class banai to ?

Default Values :

```
public class Student {
    int rno;
    String name;
    double percent;
}
```

s1 → create

Access Modifiers

1) Public - all packages
2) Private - same class
3) Default - same package

Getters and Setters

functions of a class

private ,

changes

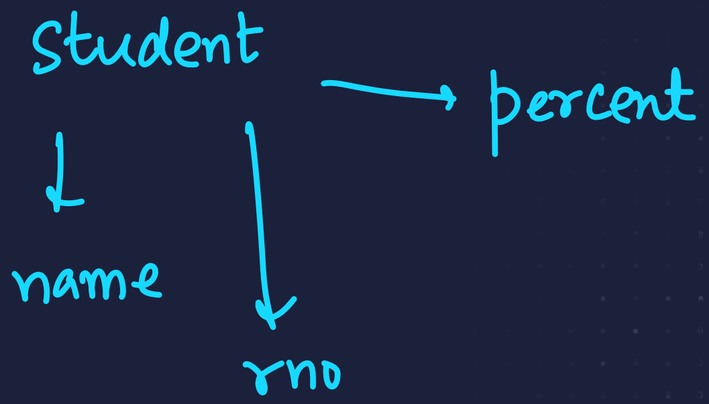
access

“this” keyword

```
private int rno;

public void setRno(int rno){
    this.rno = rno;
}
```

What is a Constructor?



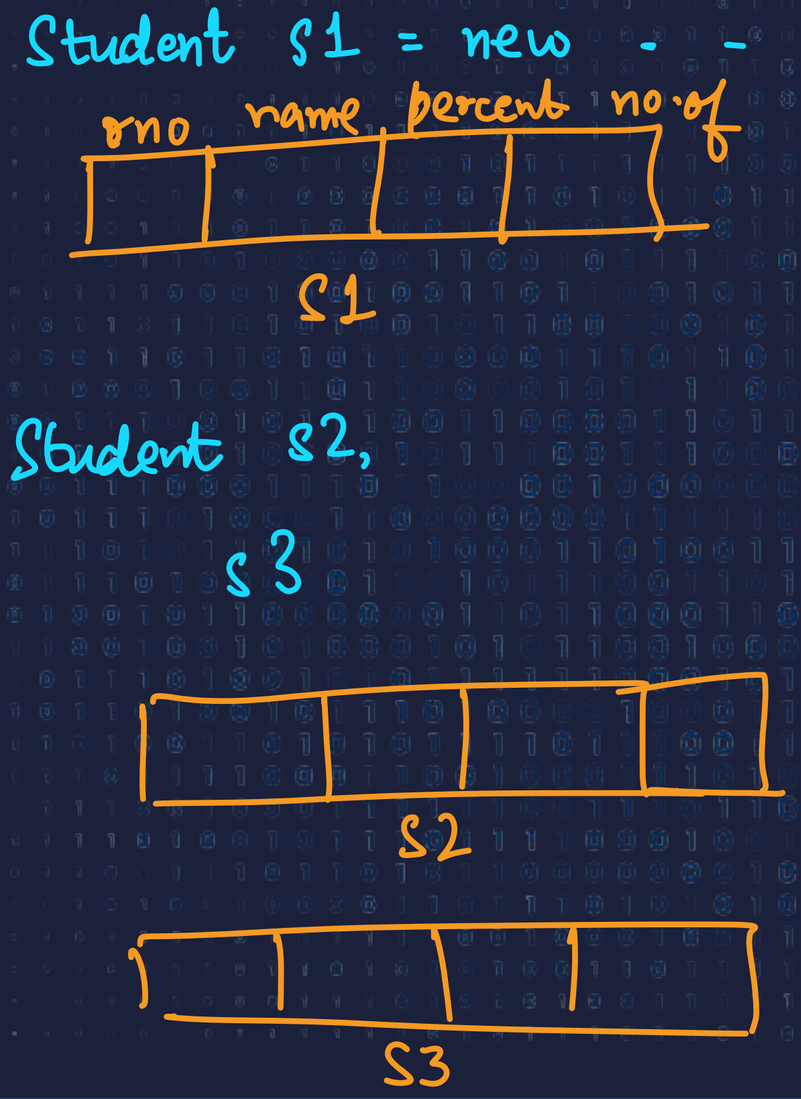

```
Student s1 = new Student("Raghav", 76, 92.1);
```

What is final keyword ?

attribute

What is static keyword ?

```
class Student {
    int rno;
    String name;
    double percent;
    int numberOfStudents;
}
```



```java
public static void main(String[] args) {
    Student s1 = new Student( name: "raghav", rno: 76, percent: 88.6);
    System.out.println(s1.numberOfStudents);
    Student s2 = new Student( name: "Rahul", rno: 67, percent: 98.3);
    System.out.println(s2.numberOfStudents);
    Student s3 = new Student( name: "Rohan", rno: 99, percent: 91.3);
    System.out.println(s3.numberOfStudents);
```

	rno	Name	per
s1	76	Raghav	88.6

	rno	name	per
s2	67	Rahul	98.3

	rno	name	percent
s3	99	Rohan	91.3

static int noOfStudents;

X 3

numberOfStudents

Output

- 1
- 2
- 3

static functions

↓

Used if we want to access a function in the class through just Classname.function.

Ques : Make Fraction class.

$$\frac{3}{7} + \frac{7}{3} = \frac{3 \cdot 3 + 7 \cdot 7}{7 \cdot 3}$$

$$\frac{7}{21} = \frac{1}{3}$$

```
Class Fraction{
    int num;
    int den;
};
```

```
f3 = add(f1, f2);
```

sub (f1, f2)

simplify ();

Ques : Make Fraction class.

$\frac{14}{21} \rightarrow \frac{2}{3}$

21 % 14 == 0 ✓

$\frac{7}{3} + \frac{3}{7} = \frac{7\times7 + 3\times3}{3\times7}$

f1 f2 f3

$\frac{35}{28} \rightarrow \frac{5}{4}$

Fraction f1, f2

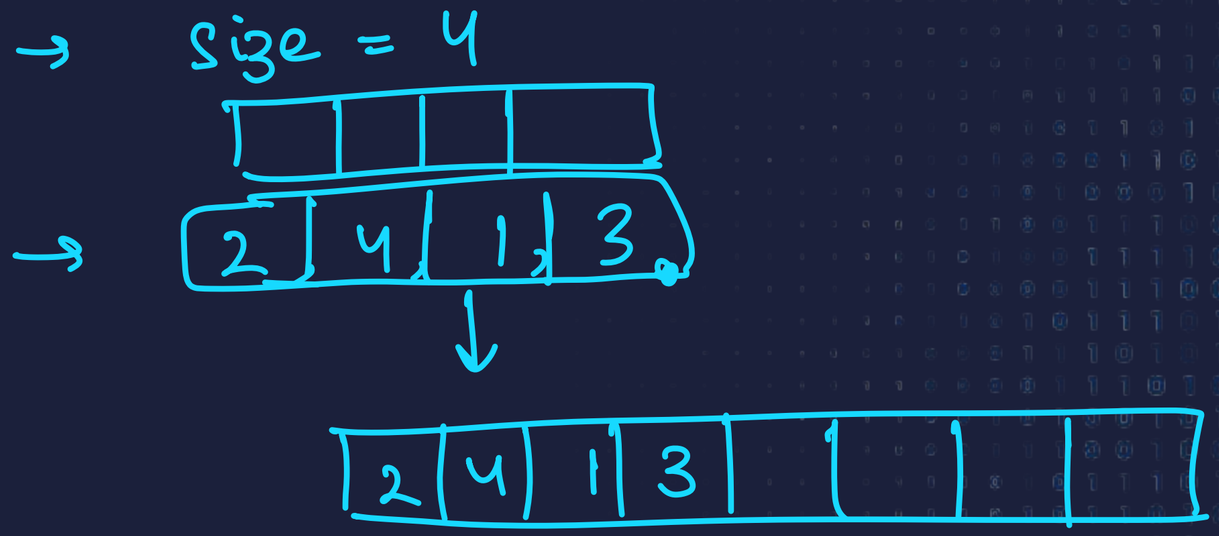
add2 (f1, f2)

f1

Ques : Make your own ArrayList.

↓

Dynamic Array



arr.add( )

arr.get( )

PW SKILLS

THANK YOU

Maza Aagaya