Procedural Programming

structure

Data

functions

**Operations**

Object Oriented Programming

**Data**

Operations

Object

classname objectname = new Constructor;

reference allocates memory default

at runtime constructor

default constructor : initializes the members with default values

Object = Data + Methods

Object

s

Rno

Name

setData( )

showData( )

s

Student s;

s null

s = new Student( );

s

public Student(int rno, String name) { // arg cons.

this.rno = rno;

this.name = name; local variable

}

Instance variable

S1

S2

S3

Single Inheritance

Base/Super/Parent class

A

Derived/Sub/Child class

B

Multi-level inheritance

A

Base class

B

Intermediate base class

C

Derived class

Multiple inheritance

B

A

C

Hierarchical

**A**

**C**

**B**

Hybrid

X

A

B C

X, q

X, p

X,p,X,q

D

d.x

Rectangle r1 = new Rectangle(x1, y1, x2, y2);

Rectangle r2 = new Rectangle(x1, y1, x2, y2, yellow);

Rectangle r3 = new Rectangle(x1, y1, x2, y2, green, img);

R3.rotate(direction)

Obj.drawRect(. . . );

Student [ ] s = new Student[3]; // references (s[0], s[1], s[2]) are created s[0] null s[1] null s[2] null

s[0] = new Student(101, “Smith”); // object is created

S[0]

Student

S[0] S[1] S[2]

College

ABC