05/04/2022 notes....

+-/*% - Arithmetic Operators

< > <= >= = - relational operators

<<,>>,>>> - shift operators

&&,||,!= - logical operators

(condition)? system.out.printl("sg") : system.out.println("gs") - ternary operator

+,- - plus,minus => unary

++,-- - increment/decrement operator => unary

( ) - typecasting operator => unary

~ - bitwise compliment => unary

!- Not(logical operator) => unary

instanceof operator

decision making, branching & conditional branching : if else, switch, ternary operator

to get the name of the student ,marks in maths phy chem

phy>=50 && chem >=40 && maths >= 60 => process the appln and grade accordingly.

if maths < 50 => find avg of maths&phy

enumeration -- user defined data type

1.perform 2d matrix addition,subtraction,.multiplication,division using switch case

for loop

while

do while

labelled statements next class

12-04-2022 notes...

class: user-defined data type

```
class class_name
{
        data members..
        member functions

}

        class student
        {
                int roll_no;
                String name;

                void getData();
                void putData();
        }
```

obj: Student s1;

19-04-2022 notes....

static variable and function does not require object for invoking or accessing them..

shares memory space

static function cannot access non-static variable

1.static method calls static method:

=>in same class- directly

=>in different class - use class name

2.static to non-static:

objects

3.non-static to non-static:

=> in same class - directly

=> in diff class - objects

lab program:

1.find the no.of objs that are created using static variable,use static function also

2. implement library info system using a constructor(get stud name,id,roll no,dept,no.of books required..,check hw many books already borrowed,hw many books still he can borrow..)

27-04-2022 notes...

Inheritance

//base class

class doctor{

---data members

---member funcs

}

//derived class

class surgeon{

---dm

---mf

}

types:

access modifiers:

public : accessed by derived & main class

private: no access X

protected : accessed by derived

1.Single inheritance: 2. Multi-level inheritance: 3. hierarchical 4.multiple 5.Hybrid

BC

|

DC

overloading:	overriding:
same method different args	same method in different classes or derived classes with different functionality

04-05-2022 notes....

method overriding is runtime polymorphism

use super keyword to access the base class method

for overriding it should have same return type

private method cannot be overriden

static and final methods cannot be overriden

method name, no.of arg, arg type should be the same

Access specifier:

wrt classes

private - ****only inside that particular class****

protected - in same class and derived class

public - in same class and derived class

default - in same class and derived class

wrt packages

private - same package subclass & same package non-subclass --- not accessible

different package subclass & different package non-subclass --- not accessible

protected - same package subclass & same package non-subclass --- accessible

different package subclass & different package non-subclass --- not accessible

public - same package subclass & same package non-subclass --- accessible

different package subclass & different package non-subclass --- accessible

default - same package subclass & same package non-subclass --- accessible

different package subclass & different package non-subclass --- not accessible

9/4/22

Error

. compile time - missing semicolon,missing brackets,use of undeclared variables,etc

. Run time - Division by 0, out of bound, incompatible type

|

class file may/ may not be created

handling runtime exception => exceptions handling

try

{

statement that causes exception

throws }

exception

catch

{

statement that handles the exception

}

checked exceptions => handled by the compiler(must) Unchecked exceptions => not handled by compiler(optional)

=> uses throws keyword

=> ClassNotFound,interrupted,IOException,

InstantiatedException,SQLException,FileNotFound

=> verified at compile time

10-05-2022 notes....

Multitasking -->process-based => different process executing.. heavy weight processes..address space is different

-->thread-based => one program divided into no of threads(parts).. running simultaneously..light weight processes..address space is same..

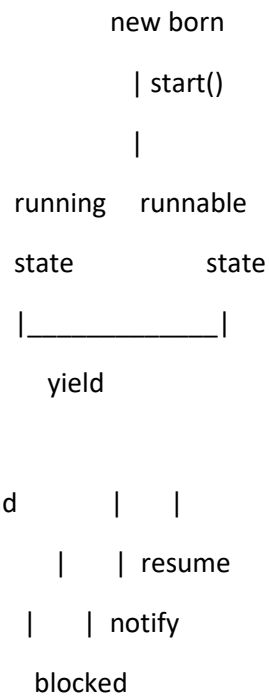
communication b/w the threads is easy

java is multithreading

use multithreading if the subcomponents are independent of each other..threads can also communicate with each other

thread- start to end of a program (single flow of control)
/ | \

1 --> <--2--> <-- 3



by inheriting the thread class

1.declare the class extending thread class

2.imp1 run()

3.create thread obj and call start()