C and Java ???

C --- u write all logic yourself !!!
Java heavy use of libraries !!!

Which library ? Which method? How is the library working !!!
Javadocs !!!!

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String - immutable , constant pool , literal , new
StringBuffer ---- mutable strings , thread safe
StringBuilder ---mutable strings , not thread safe
Wrapper classes --- one wrapper class per primitive data type
        It has useful static functions /static properties
                parseInt , isDigit, isLetter……..
                MAX_VALUE

        Auto Boxing, Auto Un Boxing !!!

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C	Code	Data	Stack	Heap
Java - JVM - process space - address space	Class Area	Stack	Heap = all objects are always on heap	

        Activation Frame of function is pushed on stack when function is called
        Activation Frame of functions is popped from stack when function returns

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Psvmain(String[]) {

F1() ----------- call -------jump to function definition
….
…..
…..
F1()----------- call -------jump to function definition
…
….
}

//function definition
Public static void F1()
{

……………
} //after ending return to point of call

Class Area	.class files + Static data
Stack	
	Main --- All local variables primitives All local references Arguments passed
Heap	Objects

ACTIVATION FRAME OF MAIN
args = 100A
x = 44
y =123.45
flag =   true
s = 200AB
sc =   300BT

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Static and non static variables in java

Static is a keyword	Method	Property
	Classname.method()	one per class --- Classname.property
	The method does not get "this" reference	it is in the class area

Non static is not a keyword	Method	Property
	obj.method()	One per object ------ obj.property
	The method always gets a "this" reference	(this is in the heap area)

"this" keyword	"this" is a reference that holds address of the current object

Static function cannot access non static property directly without object
Static function can access static property directly

NON Static function can access non static property directly without object (internally it uses "this")
NON Static function can access static property directly

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Relationships between classes !!!!

    Circle   and Point } Circle Has a reference of Point   (Circle Has a Point)

Assignment --- All classes should have 2 constructors , getters and setters
                    All classes must be in package study.hasarelation
1. Write the Circle and Point example done in class . Populate the array from user.
    1. Show only radius of all circles in the array
    2. Show the centers and radii of all circles whose y coordinate is between 10 and 90
    3. Show only y coordinates of all circles

2. Write a class Book -
            Properties - bookname, cost, String[] authors
            Write 2 constructors , getters and setters
            In the UserOfBook class - create array few books
    1. Show all books having single author
    2. Show all books - bookname and cost
    3. Show total cost of all books In the array
    4. Show only bookname author1,author2, author………… for all books

3. Write a class Product
            Properties - productName, desc, cost , dateOfExpiry
            Write a class MyDate --- properties day , month, year

            UserOfProduct
                Create array of Products --- populate array (either hardcode OR accept values from user)

                Ask the user which product she wants to purchase and quantity
                    Check if product is within expiry date
                          If yes then ---- calculate the total cost == qty * product cost
                          Show bill
                              Product name desc   qty   cost   total cost

                      Else
                        product has crossed expiry date , we cannot sell it
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