Properties Of Java

class

1. Platform Independent
2. Automatic Memory Mgmt
3. Secure
   1. No Pointers
4. Robust (Fault Tolerant) | Exception
5. Simple
6. Object Oriented

C#

2ω

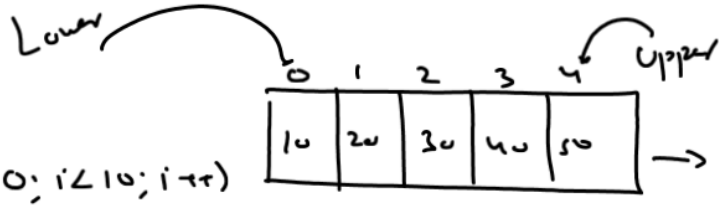
int a;

Secure
======
Java is one of the most secure programming languages present in the world today and there are two main reasons due to which Java is considered to be most secure language

1. Java doesn't support pointers i.e. a Java programmer is not allow to display address of any variable in its program

2. A Java program is **not allowed** to interact or communicate directly with the OS. Rather this communication goes to JVM and so a Java application behaves in a secured way compare to C and C++ applications(program)

```
int arr[5]= {10, 20, 30, 40, 50};
```



```
for(int i=0; i<10; i++)
    printf("\n%d", arr[i]);
```

~~Unpredictable~~

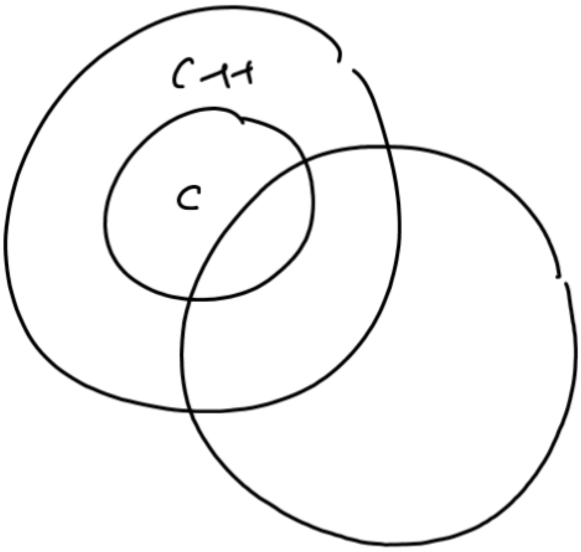
Exception

i=5

4. Robust (Fault Tolerant)
====================

Java has some very strict rules which every programmer must follow and if these rules are broken then Java generates **EXCEPTION** (Runtime Error) and kills the program.

For example: In Java we are not allowed to access an Array beyond its boundaries and if we try to do this then Java will terminate our program by generating EXCEPTION . Due to this the other programs running in the memory and the OS itself remain safe and secure. Thus we can say Java is a **Robust language**



5. Simple
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Java has inherited its 80% syntax from languages like C and C++.

For example: Topics like Data Types, Operators, Arrays, If else, Loop, etc. are present in Java with almost same syntax as C and C++ languages. So if a programmer its familier with these langauges then he can easily learn Java.

Thus Java is a simple language considered to other programming languages .

6. Object Oriented Language
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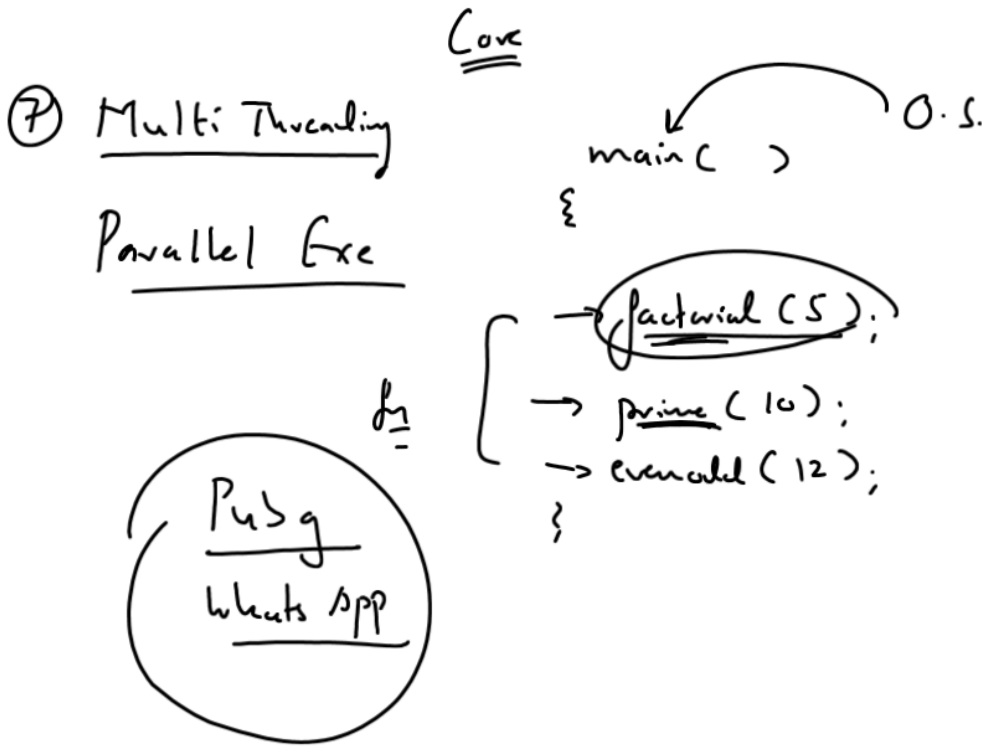
Java strongly support concepts of OOP.
For example in Java it is **COMPULSORY** to use **class** in every program which we write.
Similarly topics like Polymorphism, Inheritance, Abstraction, Encapsulation. etc. are strongly supported by Java. So we can say that unlike C, Java supports object oriented programming rather than Procedure Oriented Programming.



```
main( )
{
  → factorial(5);
  → prime(10);
  → evenodd(12);
}
```

7. Multi Threading

Multithreading means parallel execution. In other words we can say that if a program can run multiple function together it means that it is using multithreading.

For example: consider a music player. When we play a song in a music player then many other activities take place parallely like

1. We are allowed to set volume level
2. We can add or remove songs from the play list
3. We can see the time elaps with the help of the timer
4. We can forward or backward the song using the slider.

All the above activities work together and this is called multithreading. Java has very good support for multithreaded applications so chatting softwares, games, media players etc. can be easily developed in Java.