Python Vs Java
(As Programming Languages)
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Surface Level Differences

On the surface, Java is much more complex, but has a higher end when it comes to operational efficiency; while python has a lower high end, but excels in ease of use for programmers and the speed at which you can learn the language.
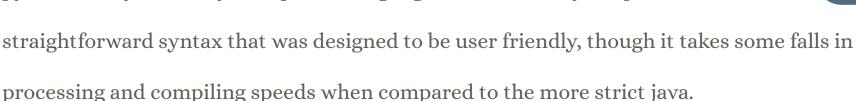
Java is an incredibly powerful language, though it is old. It predates *javascript* which took advantage of the extreme popularity of Java by using its name. Java is considered to be a very difficult language to learn, though understanding it in full allows for a massive amount of flexibility and control and this enables programmers to do nearly anything they want.

Python Compared to Java

python is a language that is designed to be fun and easy and simple to learn.

python is a dynamically interpreted language with extremely simple and

straightforward syntax that was designed to be user friendly, though it takes some falls in

processing and compiling speeds when compared to the more strict java.

Python's name finds its roots from "monty python"

–the most genius british comedian of all time–

Python vs Java in numbers

> The two powerful languages java and python are rivals, it's easy to see with the popularity of java being 36% and the popularity of python being 49%, and the reasons behind this are the tradeoffs you make between java's complexity and power versus python's simplicity and constraints.

> While python is much newer than java, it too has a lot of tools that give it use, and the primary strength of python is the ease with which you can learn the language and the speed that you can program once getting comfortable with its simple syntax.

> The simplicity of python's "print" method is very short when compared to java's "System.out.println("");" method –which does have the sysout. Shortcut–

Differences; Practically Coding

- Java has useful things like "n++" instead of "n += 1" which is small, but somewhat meaningful when you use "n = n + 1" a lota
- In java, you must import and initialize a scanner in order to take user input, while in java you can just use "input" and have it output a string and set a variable to it all at the same time
- In python each line must be correctly indented and placed on a next line, while the only thing that java looks for to indicate a line is a semicolon
- Both python and java can get long and confusing, though I've noticed that python tends to get long and confusing vertically and java tends to get long and confusing horizontally
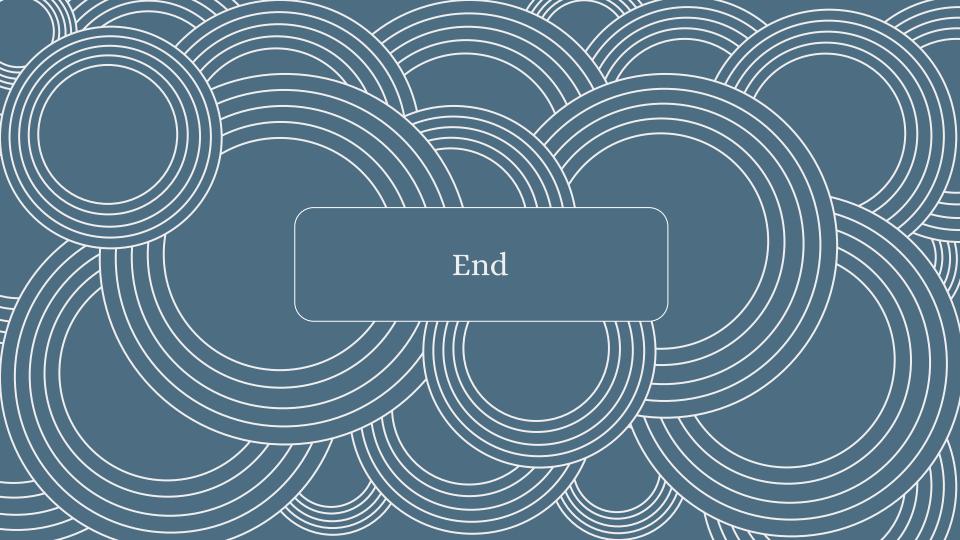
Code: Visuals

Moving onto the differences between the two sets of simple programs; I've been programming in java for a lot longer and I know the intricacies of its syntax much more than python's, which leads to my java code being substantially smaller than the python one (just over 1 page to just under 2 pages)

Java:

```java
public static void main(String [] args) {
    // 1. find a number in the Fibonacci sequence,
    System.out.print("enter a number : ");
    int foo = (new Scanner(System.in)).nextInt();
    int num1 = 0, num2 = 1;
    for(int i = 0; i < foo; i++) {
        int temp = num2;
        num2 += num1;
        num1 = temp;
    }
    System.out.println("fib sequence number "+foo+" is "+num1);
    //2. find the largest value of a given list of numbers
    // arr = an array of any set of numbers
    int lgst = arr[0];
    for(int e : arr) { if(e > lgst) lgst = e; }
    System.out.println("largest num is " + lgst);
    //3. use nested loops to process numbers provided in a 2d array
    //arr is an array of any set of numbers
    int rows = (int) (Math.sqrt(arr.length));
    int cols = (int) (arr.length / rows);
    int [][] finArr = new int [rows][cols];
    int x = 0;
    for(int[] e : finArr) {
        for(int i = 0; i < e.length; i++) {
            e[i] = arr[x];
            x++;
        }
    }
    System.out.println(Arrays.deepToString(finArr));
    // this creates a 2d array of the closest thing to a square
}
```

Python:

```python
#1. find a number in the Fibonacci sequence,
a, b = 0, 1
arr = [a, b]
x = int(input("find number in fib sequence: "))
for n in range(x) :
    temp = b
    b += a
    a = temp
    arr.append(b)
print("value at pos " + str(x) + " value is " + str(arr[x]) )

#2. find the largest value of a given list of numbers
i = ""
arr = []
l = 0
while i != "end" :
    i = input("enter number ('end' to stop); ")
    if i != "end" :
        arr.append(int(i))
        if int(i) > l :
            l = int(i)
print("largest number is " + str(l))

#3. use nested loops to process numbers provided in a row and column format
i = ""
arr = []
while i != "end" :
    i = input("enter number ('end' to stop); ")
    if i != "end" :
        arr.append(int(i))
a = int(input("how many rows? "))
b = int(input("how many columns? "))
while (a * b) < len(arr) :
    a += 1
x = 0
temp = []
print("here is your array \n")
for n in range(a) :
    for j in range(b) :
        if x < len(arr) :
            temp.append(arr[x])
        else :
            temp.append(" ")
        x += 1
    print(temp)
    temp = []
# yep, its robust
```

End

Citations:

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