

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green. These shapes are positioned on the left and right sides of the slide, framing the central text. The word "Python" is centered in a green, sans-serif font.

Python

Python

High Level Language

→ Object Oriented Language

Named After : Monty Python

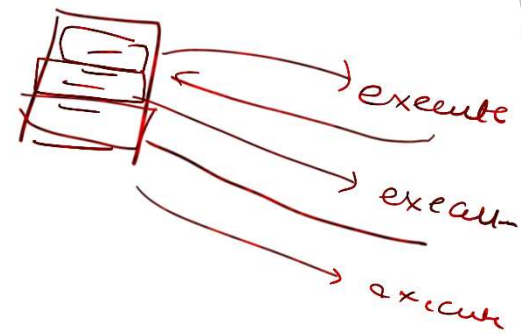
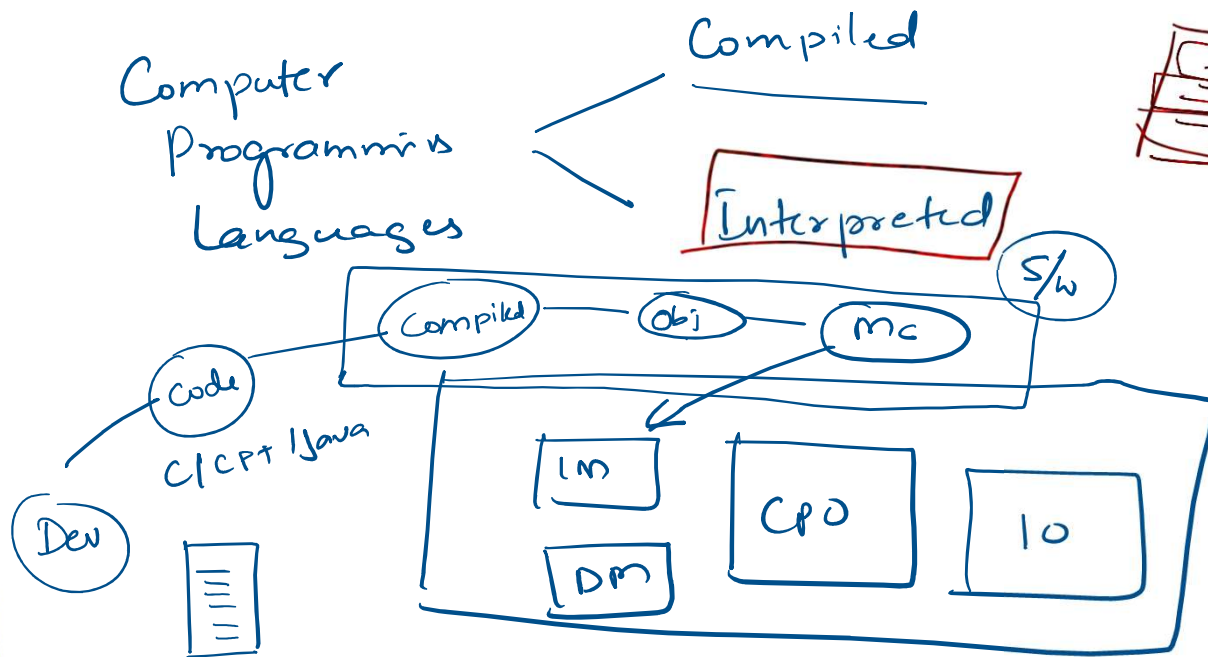
Developed by : Guido Van Rossum

1991

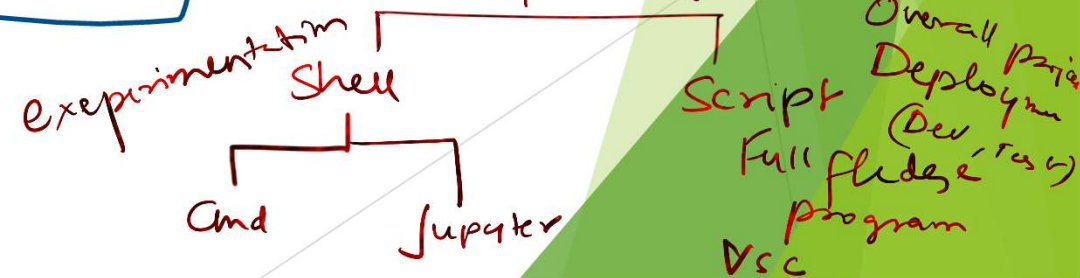
Simple in Syntax |



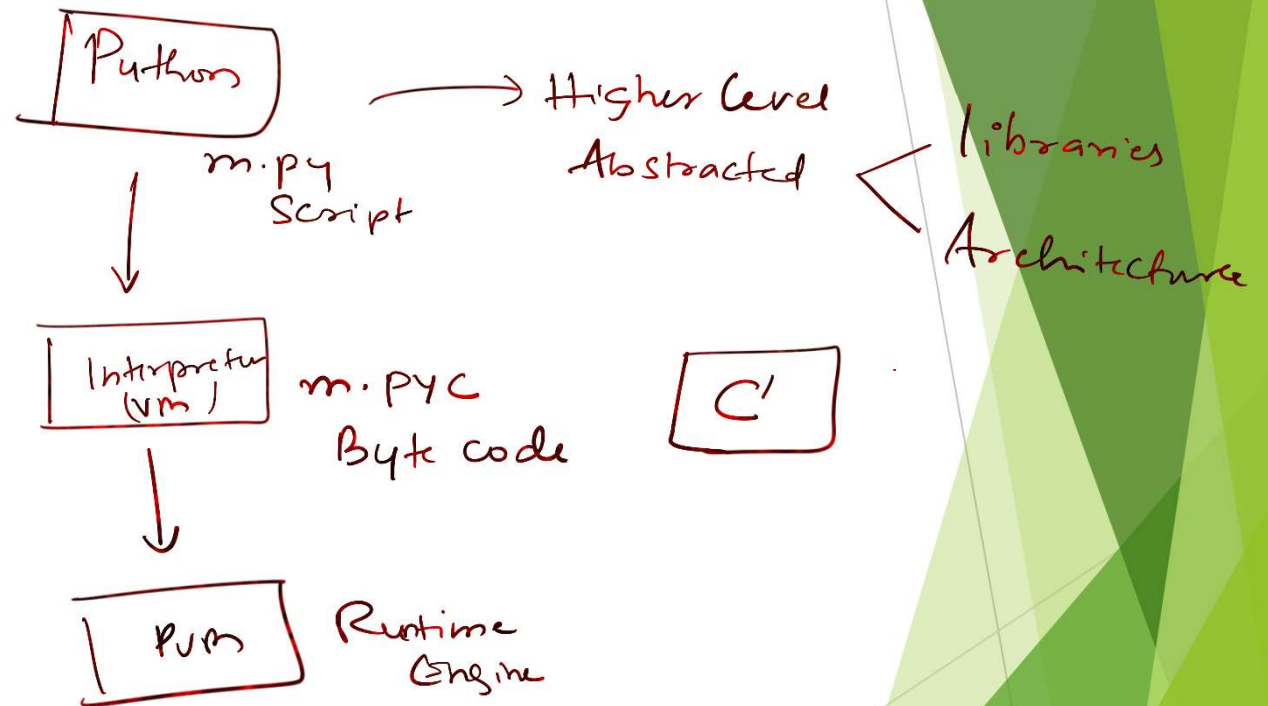
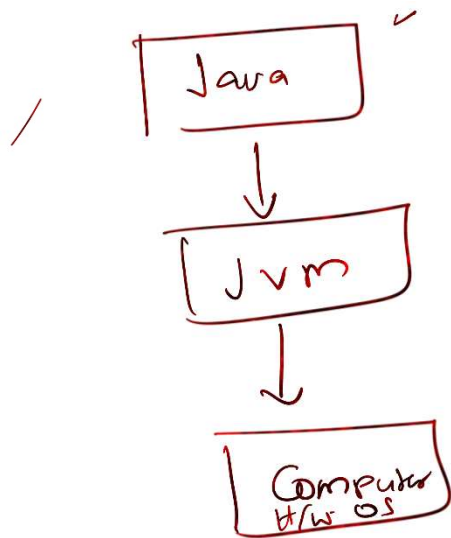
Python



Python \Rightarrow Interpreted Language



Python



Python

11:00 - 11:10 Experiment with Jupyter Interface
11:10 - 11:30 Tea Break

I Data types

- Numbers
- Strings
- collection types
 - lists
 - tuples
 - sets
 - dictionaries

Problem Solving :

II . Branching

- If...else

III . loops

- for loops
- while loops

IV . IO → Input/output

- input ()
- print ()

Python Variable

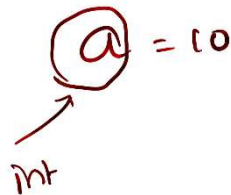
C/C++/Java

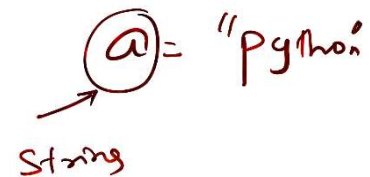
```
int i;
```

Python : Variable are Dynamic

- No declaration
- No data type required

→ Use the variable when you want

 `a = 10`
int

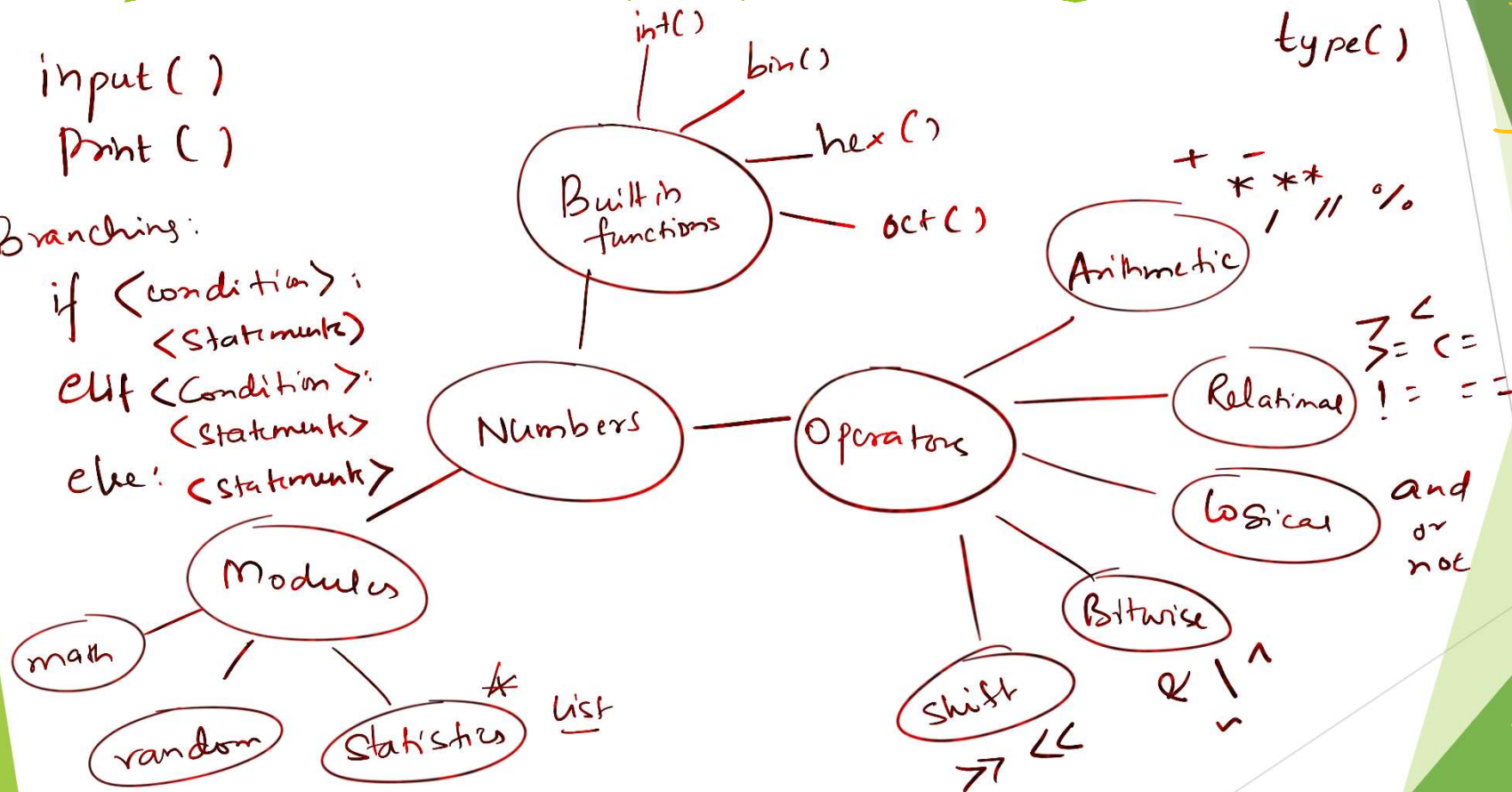
 `a = "python"`
String

Python: Numbers, IO, Branching

input ()
Print ()

Branching:

```
if <condition>:  
    <statement>  
elif <Condition>:  
    <statement>  
else: <statement>
```



Professional -
Developer

→ Understanding
Requirements

→ Creative
Solution

→ Capture
Solutions

→ PC

→ PC

→ Python
code }

→ Test
code

→ Knowledge
transfer

→ Computer/System
Architecture

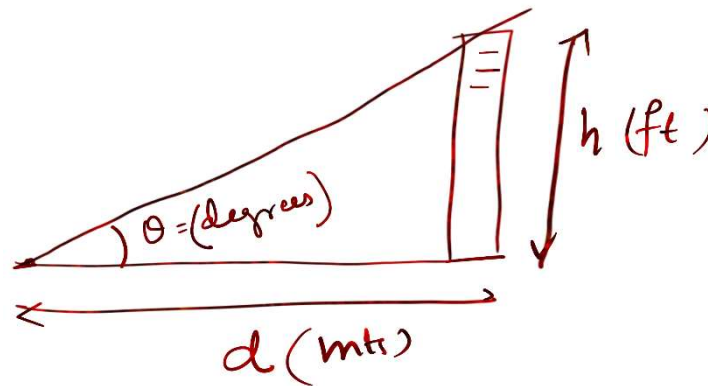
Class Assignments

4:50 - 5:05 Break

- ▶ Calculate the area of the triangle given two inputs b and h
- ▶ Create a simple movie recommendation program:
 - ▶ Kids: Tom and Jerry
 - ▶ Teenage: Transformers
 - ▶ Otherwise: Revenant
- ▶ Convert input distance in feet to meters
- ▶ Detect if a input number is divisible by 7
- ▶ Given 3 points ax, ay, bx, by, cx, cy (6 floating values) determine if these points make a right angled triangle

Day - 4 Assignments

- Temperature Converter
- Height of the Building



inputs \rightarrow $d \text{ (mtr)}$
 $\theta \text{ (deg)}$

output $\rightarrow h \text{ (feet)}$

Review Questions

- What is the value of the expression $2 * (3 + 4)$ in Python?
- What is the value of the expression $2 * 3 + 4$ in Python?
- What is the value of the expression $2 + 3 * 4$ in Python?
- What tools can you use to find a number's square root, as well as its square?
- What is the type of the result of the expression $1 + 2.0 + 3$?
- How can you truncate and round a floating-point number?
- How can you convert an integer to a floating-point number?
- How would you display an integer in octal, hexadecimal, or binary notation?
- How might you convert an octal, hexadecimal, or binary string to a plain integer?

Strings

String → Sequence of characters

"python" , 'python' ,

""" This is
a multi line
string! """

Black comment
Multi line string

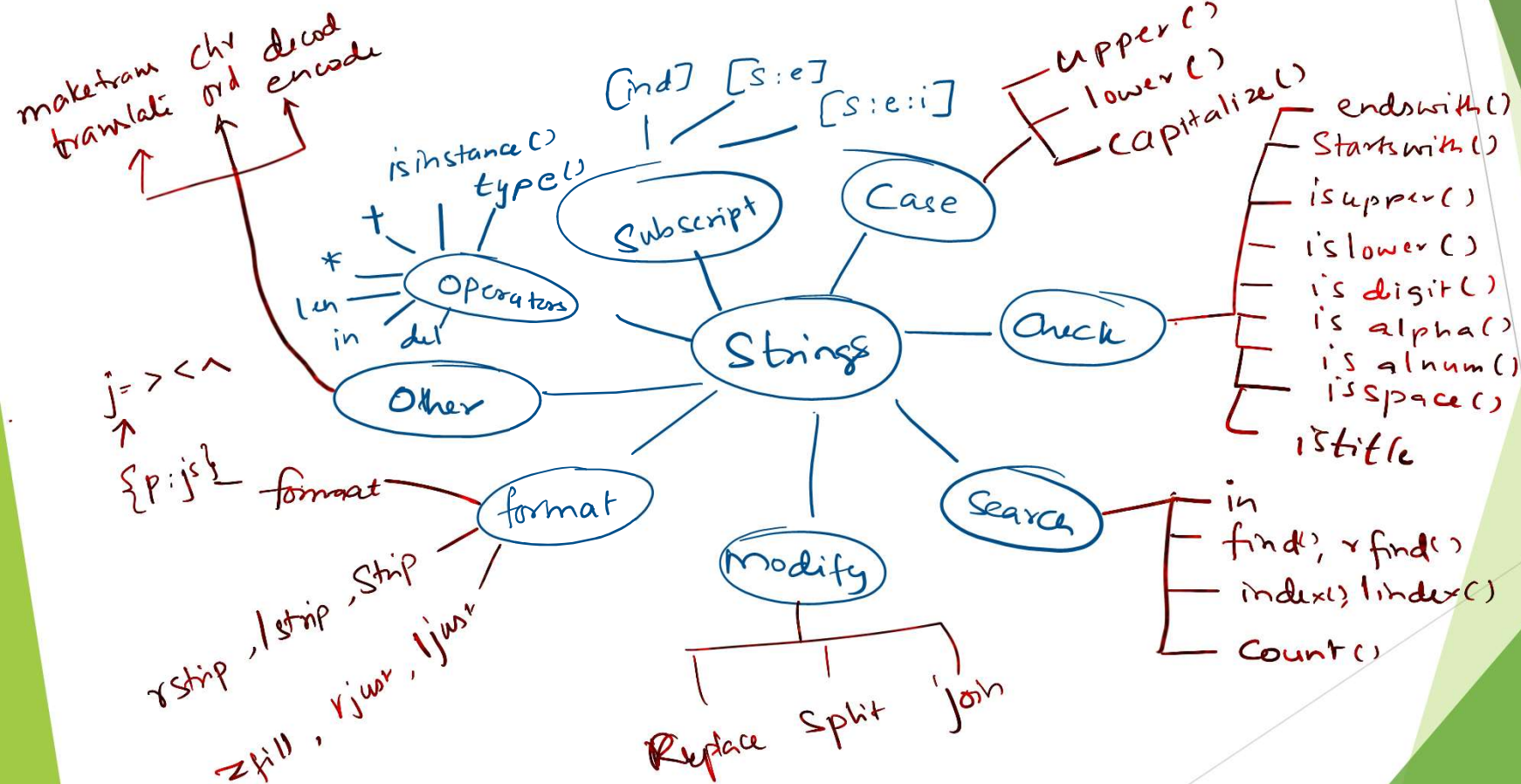
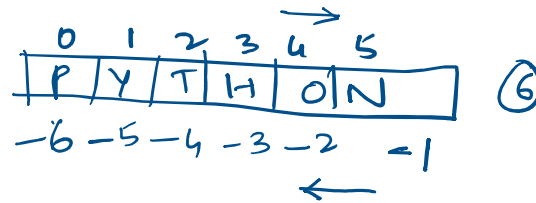
Strings are immutable

— Changing characters in string is not permitted

Python

Operators
built in functions

Strings



Loops

- ▶ Loops
 - ▶ For Loop -> exact number of iterations (repetitions)
 - ▶ While Loops -> we use a condition here
- ▶ Loop controls
 - ▶ Break
 - ▶ Continue
- ▶ Python loop speciality
 - ▶ Loop else block

Class Assignments

1:45 - 2:15 Lunch Break
2:15 - 2:25 EX 1
2:25 - 2:35 EX 2
2:35 - 3:00 EX 3

- ▶ Input some text from the user and count the number of vowels in the text. Also, capitalize all the vowels [10]
- ▶ Print all the numbers divisible by 7 and 11 between a given user input range. [10]
 - ▶ Take the start and end of range from the user
- ▶ Create a program to input a character and number of lines and a build a character pyramid [30]

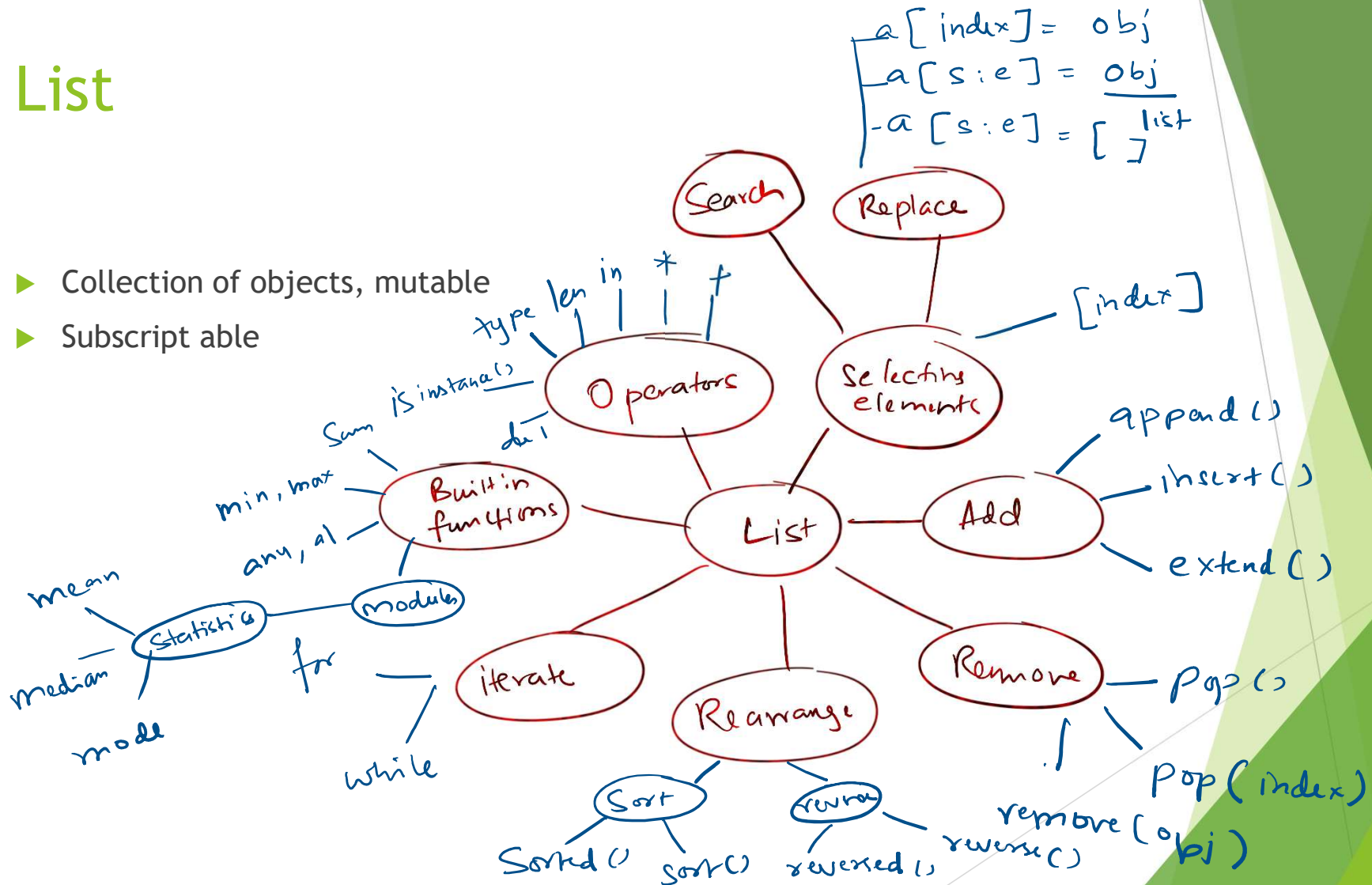
$n = 5$

$C = *$

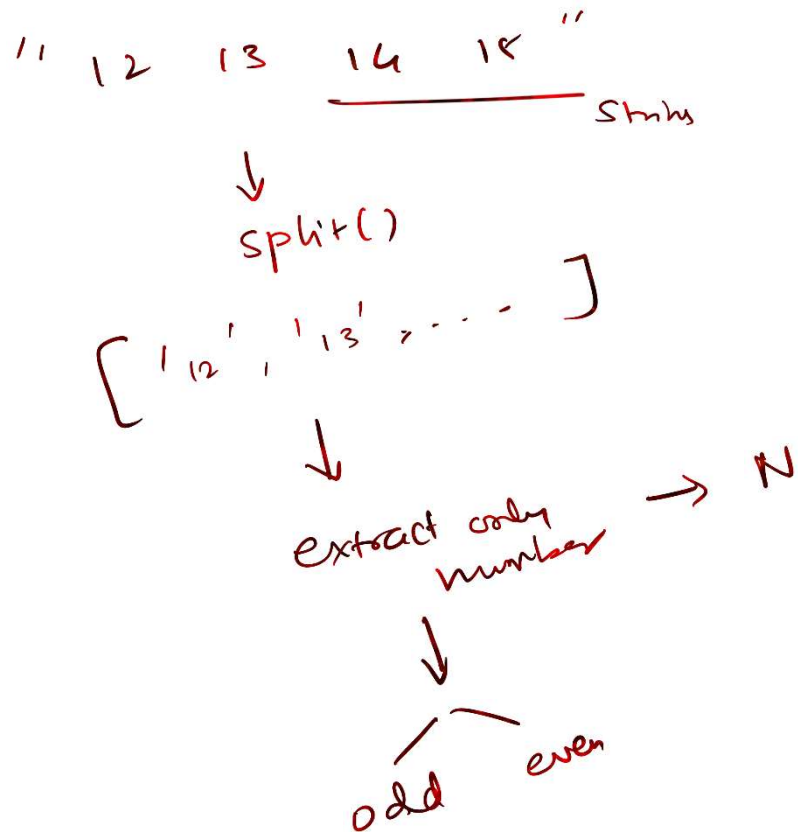
```
      *
     * * *
    * * * * *
   * * * * * *
  * * * * * * *
 * * * * * * * *
```

List

- Collection of objects, mutable
- Subscriptable



Plan to write code



Assignments

- ▶ Write a program to take input text from the user and list all the unique words in the text
 - ▶ Input => “text is clean but text is lengthy”
 - ▶ Output => text, is, clean, but, lengthy
- ▶ Accept comma separated sequence of number from the user and separate the prime and non-prime numbers from the sequence
- ▶ Others:
 - ▶ Create an account in hackerrank, codility and codechef