TOKENS

PYTHON FUNDAMENTALS

SUBJECT - COMPUTER SCIENCE

CLASS LEVEL - 11th.

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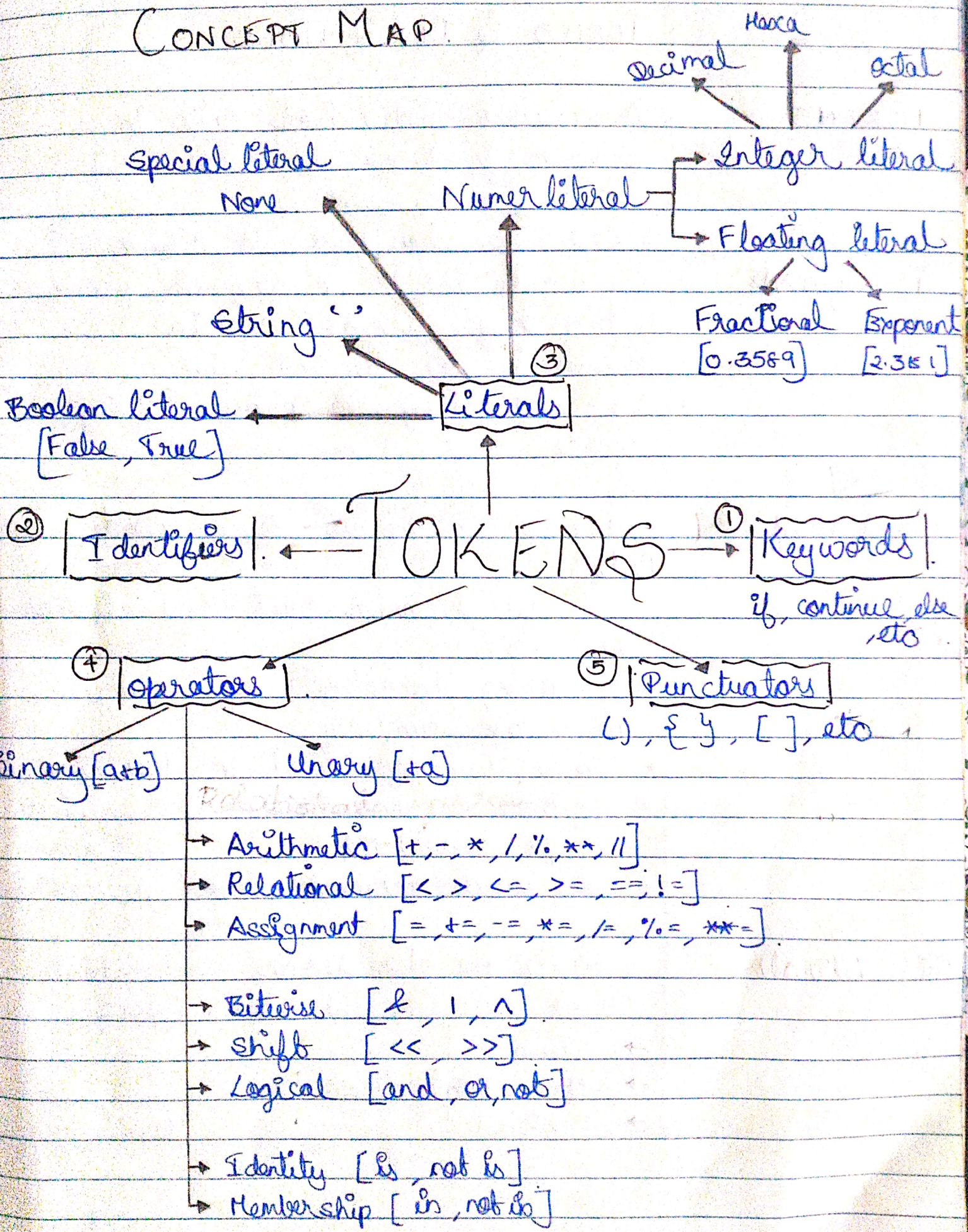
ABSTRACT.

In this concept we are going to discuss about TOKENS. & its classification → Keywords
→ Identifiers
→ Literals
→ Operators
→ Punctuators.

REFERENCES

KASTHURI MUTHU, SAI TECH Lecture Notes.

CONCEPT MAP


TOKENS
① Keywords
if, continue, else, etc
② Identifiers
③ Literals
Special literal
None
String ''
Boolean literal
[False, True]
Numer literal
Integer literal
Hexa
Decimal
octal
Floating literal
Fractional [0.3569]
Exponent [2.3E1]
④ operators
Binary [a+b]
Unary [+a]
→ Arithmetic [+, -, *, /, %, **, //]
→ Relational [<, >, <=, >=, ==, !=]
→ Assignment [=, +=, -=, *=, /=, %=, **=]
→ Bitwise [&, |, ^]
→ Shift [<<, >>]
→ Logical [and, or, not]
→ Identity [is, not is]
→ Membership [in, not in]
⑤ Punctuators
(), {}, [], etc

TERMS & DEFINITIONS

TOKENS

A smallest individual unit in program is known as Token

Tokens are classified into 5 types.

(i) Keywords. → Key words are the predefined words and have special meaning.
→ Key words are case sensitive.
→ We can't change the meaning of Key words.

(ii) Identifiers

Identifiers are the user defined words.
Rules:
* 1st character must be a letter or underscore
* Remaining characters may be letters, underscore, numbers.
* Spaces are not allowed in Identifiers.
* Symbols are not allowed in Identifiers except underscore.
* Key words are not allowed as Identifiers

(iii) Literals

Literals are also knowns as constants.
Literals are classified into 4 types:
→ String
→ Numerical
→ Boolean

LITERALS

- String
- Numer
  - Integer
    - Decimal
    - octal
    - Hexa
  - Floating
    - Fractional
    - Exponent
- Boolean
- Special Literal
  - None

→ Special

→ String literal

In python string must be enclosed in either single or double quotes.

→ Numer literal

Numer literals are classified into 2 types integer & floating literal

Integer

Integer literals are the numbers without decimal part.

→ Decimal

→ octal

→ Hexa decimal.

Floating

Floating literals or contains decimal part they must be +ve or -ve.

Floating literal of 2 types:

→ Fractional - 0.3598.

→ Exponent - 2.3E1

→ Boolean

Boolean literal contains 2 values either True or False.

→ Special literal None

None represents absence of value

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→ Boolean

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(iv) Operators

Operator is a symbol that performs operation on operands.

Eg: 10+15.

10, 15 → Operands.

+ → Operator.

OPERATORS

- → Unary
- → Binary
- → Arithmetic
- → Relational.
- → Assignment
- → Bitwise
- → Shift.
- → Logical.
- → Identity
- → Membership

→ Unary operator +a

→ Binary operator a+b.

→ Arithmetic operator

+ → Addition
- → Subtraction
* → Multiplication
/ → Division
% → Modules
** → Exponent.
// → Floor division.

→ Relational operator

< → Less than.
> → Greater than
<= → Less than or equal to
>= → Greater than or equal to
== → Equal to.
!= → Not equal.

→ Assignment operator

= → Assign

+= → Assign Sum

-= → Assign subtraction

*= → Assign multiplication

/= → Assign division

%= → Assign modulus

**= → Assign Exponent

//= → Assign floor division

→ Bitwise operators

& → Bitwise AND

| → Bitwise OR

^ → Bitwise XOR

→ Shift operators

<< → Left shift

>> → Right shift

→ Logical operators

and → logical AND

or → logical OR

not → logical NOT

→ Identity operators

is → Identity same?

not is → Identity not same?