Flow control of Python programs

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Programming Paradigms

Paradigm
A programming paradigm is a style or ‘way’ of programming that facilitates transfer of knowledge in code.

Imperative

```
1 sum = 0
2 for x in my_list:
3    sum += x
4 print(sum)
```

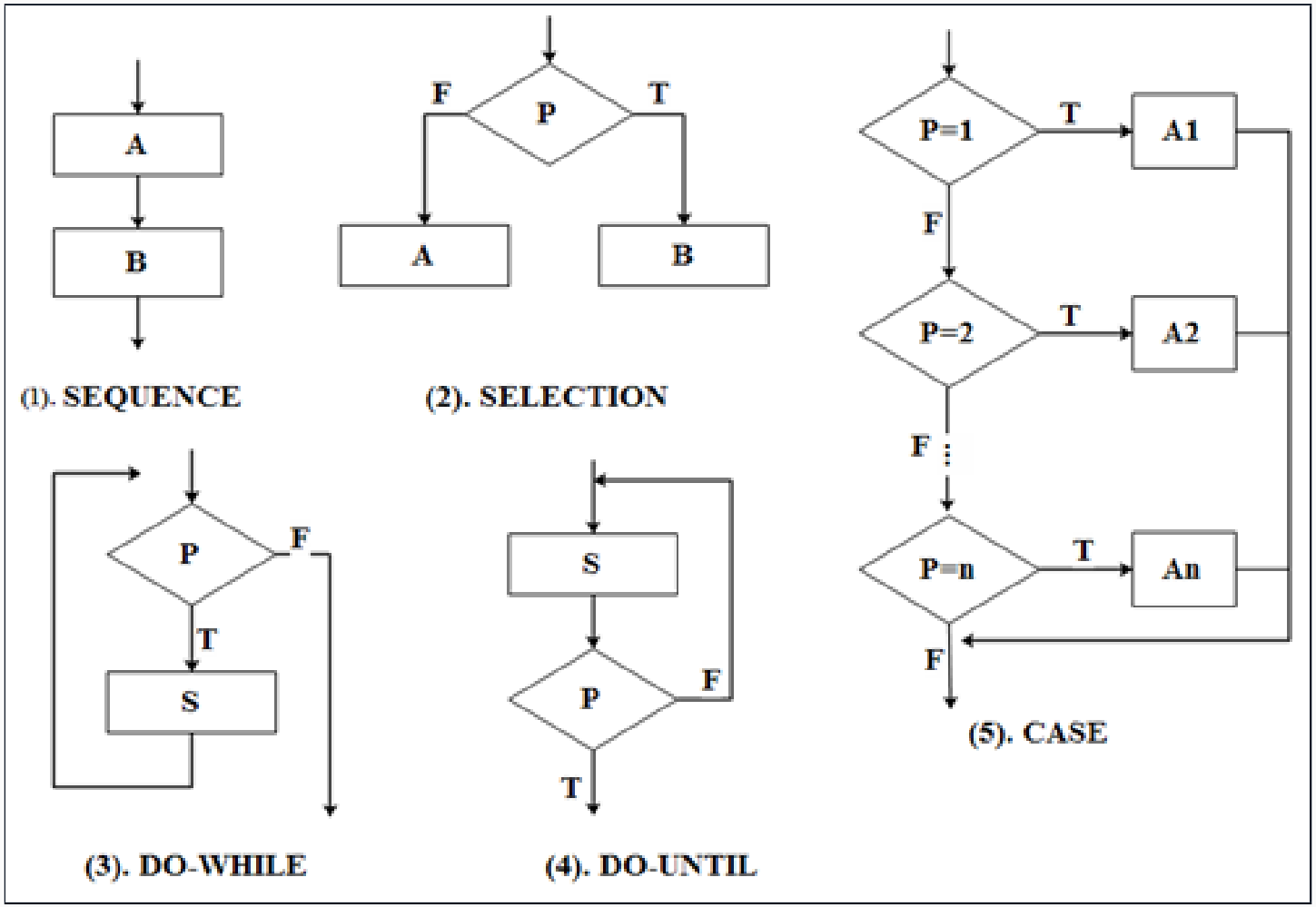
Programming with an explicit sequence of commands that update state.

Declarative

```
1 SELECT SUM(my_column)
2 FROM my_database
```

Programming by specifying the result you want, not how to get it.

Control of flow



Control flow is the order in which the individual Python statement, expression and function call are evaluated.

RETURN TO CT

x_i	1	2	A	4	B	A	7	8	A	B	11	A	13	14	AB
i	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

```
1  def solution(n):
2     result = ''
3     for i in range(1, n + 1, 1):
4        if i == n:
5           result += 'AB'
6        elif i % 3 == 0:
7           result += 'A'
8        elif i % 5 == 0:
9           result += 'B'
10       else:
11          result += str(i)
12    return result
```

Boolean Operators

NOT

x	x'
0	1
1	0

AND

x	y	xy
0	0	0
0	1	0
1	0	0
1	1	1

OR

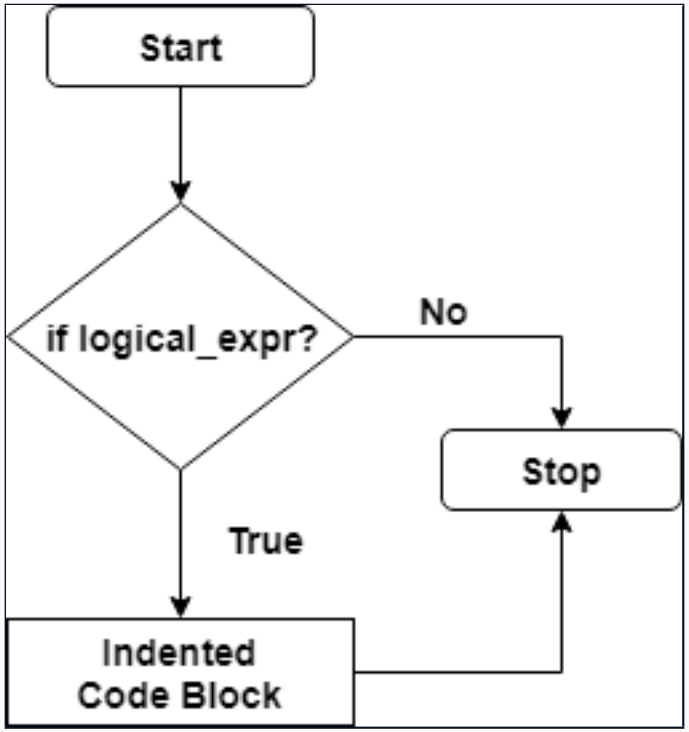
x	y	$x+y$
0	0	0
0	1	1
1	0	1
1	1	1

XOR

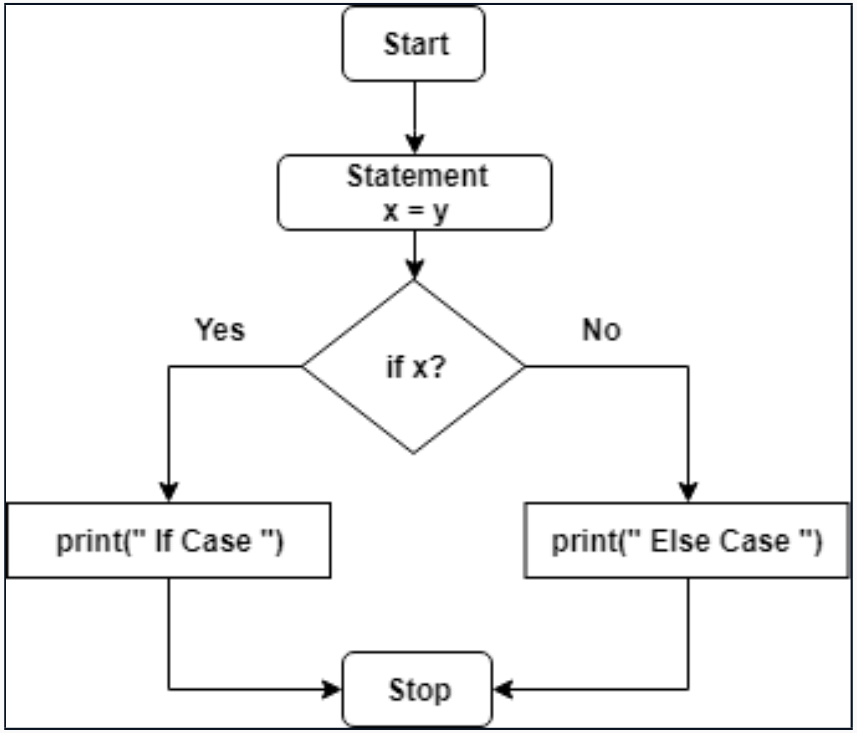
x	y	$x \oplus y$
0	0	0
0	1	1
1	0	1
1	1	0

Boolean algebra is the branch of algebra in which the values of the variables are the truth values true and false, usually denoted 1 and 0, respectively. Boolean operators can be used to control the execution of a Python program.

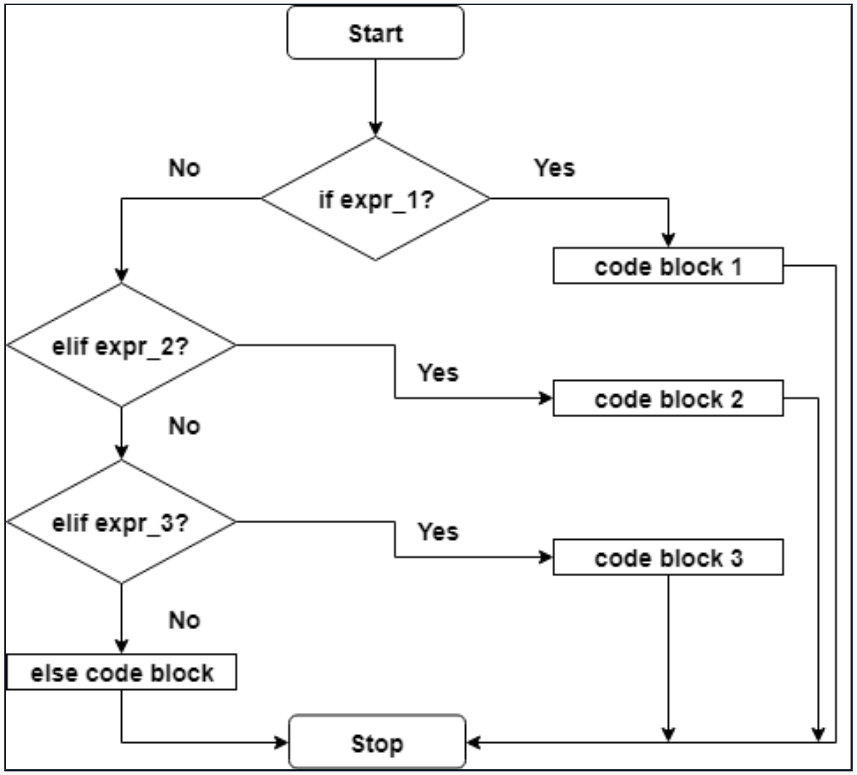
IF STATEMENT



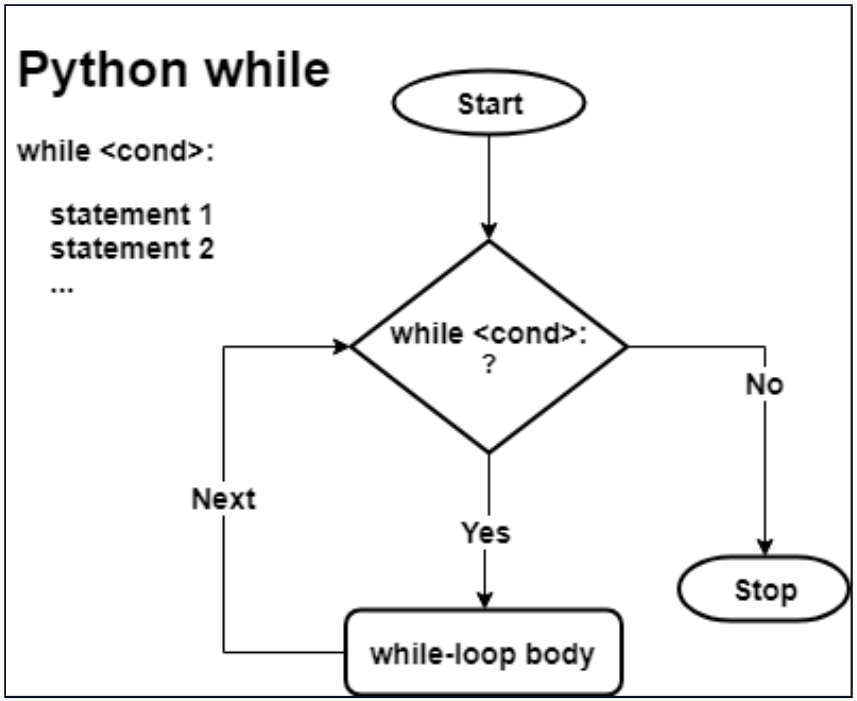
IF-ELSE STATEMENT



IF-ELIF-ELSE STATEMENT



WHILE STATEMENT



FOR STATEMENT