Introduction to Python

T5 Bootcamp by SDAIA

Control Flow

SDAIA
الهيئة السعودية للبيانات والذكاء الاصطناعي
Saudi Data & AI Authority

Outline

- Elements of Control Flow
  - Sequence
  - Selection
  - Iteration
- Conditions
- Categories of Errors
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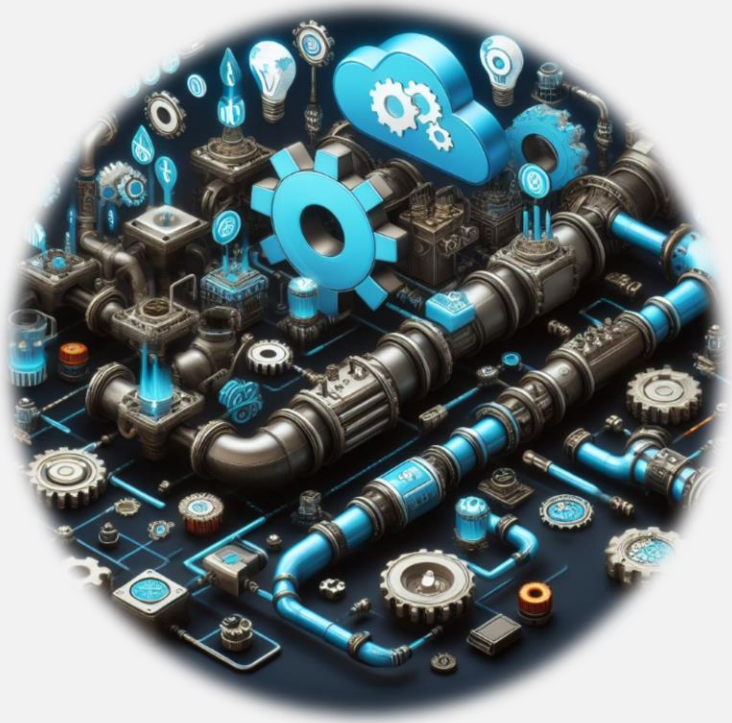
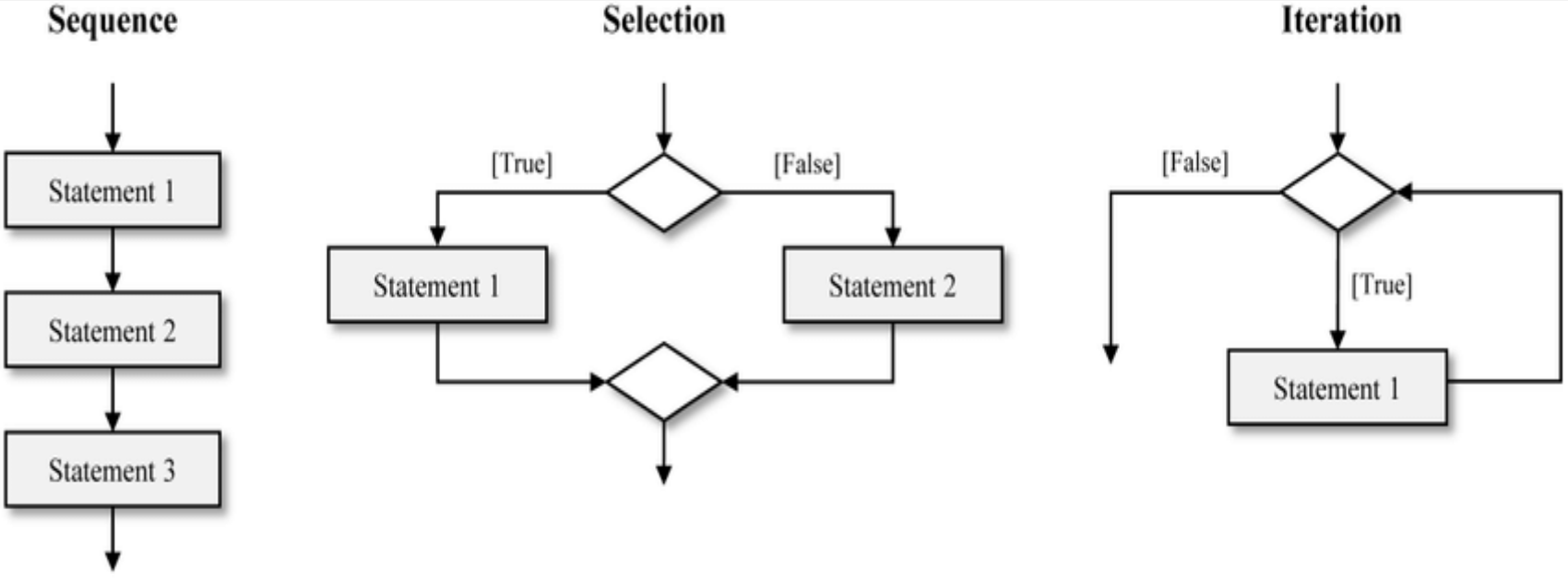
  - Logical Errors
  - Runtime Errors
- Exceptions
  - Built-in Exceptions
  - User-defined Exceptions
  - Single except
  - Multiple except
- Errors are your friends

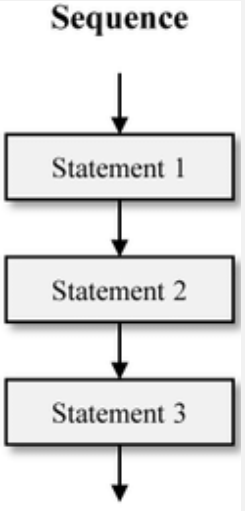


Elements of Control Flow

Elements of Control Flow

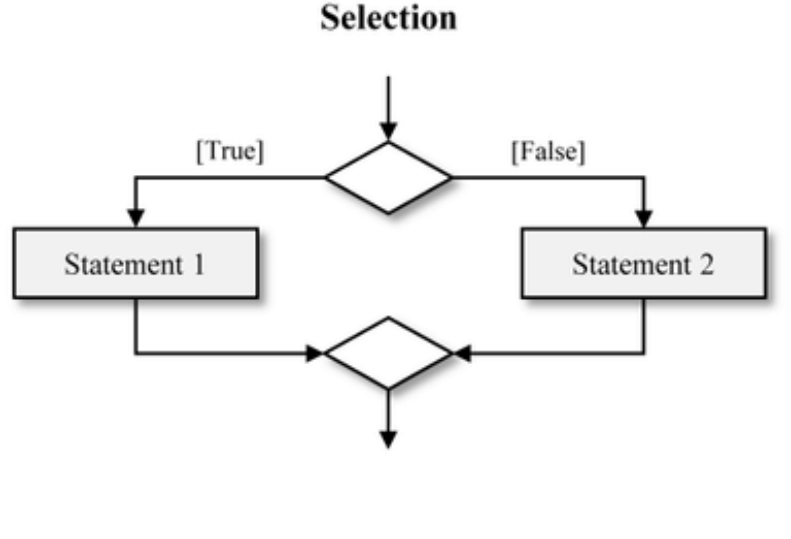


Structures of Control Flow



1. Sequence: This dictates the order in which instructions are executed, one after another, like following a recipe.

Structures of Control Flow



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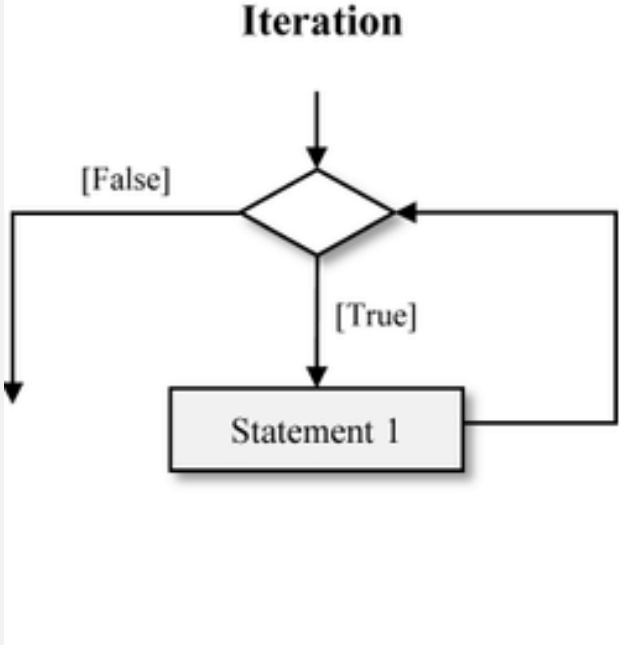
Structures of Control Flow



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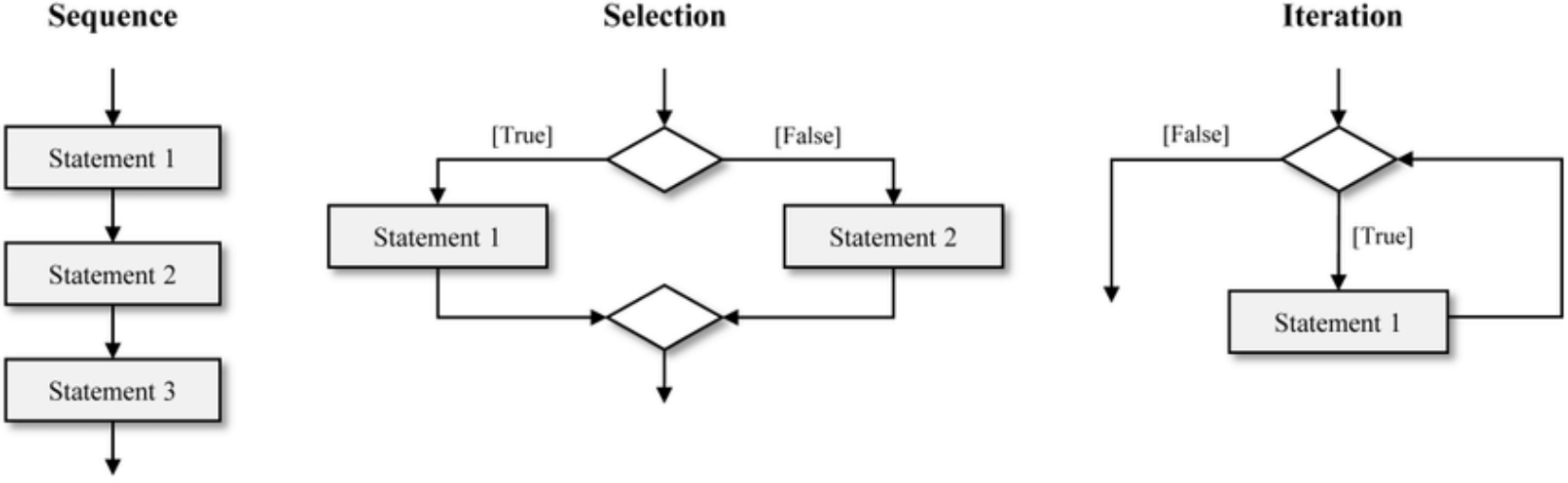
Structures of Control Flow



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Conditions

- Conditions must evaluate to Boolean values.

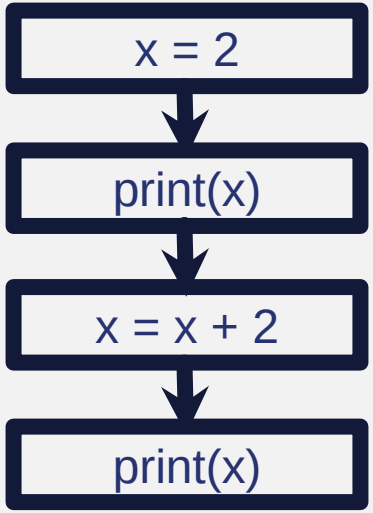
Operator	Description
==	Equal to
!=	Not equal to
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to

Figure: Comparison Operators

Control Flow: Sequential Steps

Program:

```
x = 2
print(x)
x = x + 2
print(x)
```



Output:

```
2
4
```

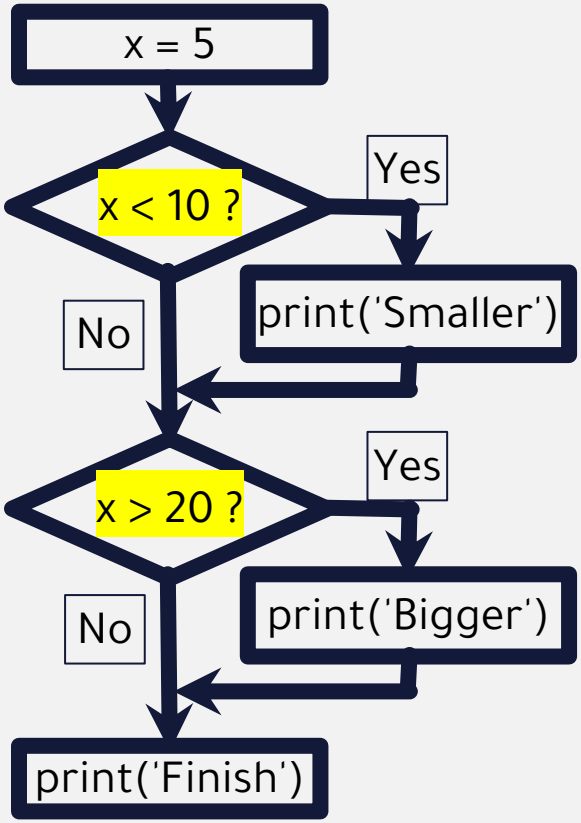
- When a program is running, it flows from one step to the next.
- As programmers, we set up "paths" for the program to follow.

Control Flow: Conditional Steps

Program:

```
x = 5
if x < 10:
    print('Smaller')
if x > 20:
     print('Bigger')

print('Finish')
```



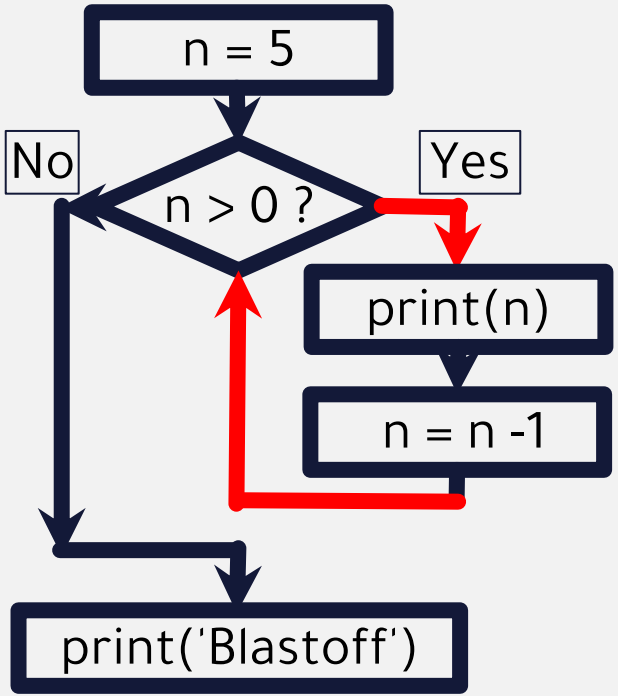
Output:

```
Smaller
Finish
```

Control Flow: Repeated Steps (Loop)

Program:

```
n = 5
while n > 0:
    print(n)
    n = n - 1
print('Blastoff!')
```



Output:

```
5
4
3
2
1
Blastoff!
```

Thank you

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