

Statements :- Instructions given to comp. to perform any kind of action.

- data movement,
- making decision
- repeating action

Types of Statement :

↓
 Empty

↓
 Simple

↓
 Compound

EMPTY: statement which does nothing

>>> pass

- null op" statement
- It does nothing & moves to next statement
- Use of Pass : where syntax of language requires presence of statement but where logic of prog. does not. Ex: loops.

SIMPLE: Executable statement is simple statement

>>> name = input("Enter ")

>>> print(name)

COMPOUND: grp of statement executed as unit

Syn :- <compound statement header>:
 <body>

header : begins with keyword & ends with a colon.

body :- 1 or more statement

- all statement are having same indentation.

Statement Flow Control :

↓
 sequence

↓
 selection

↓
 iteration

SEQUENCE :- means statements executed sequentially.

- normal flow of control in prog. & is simplest one

St. 1
↓
St. 2
↓
St. 3

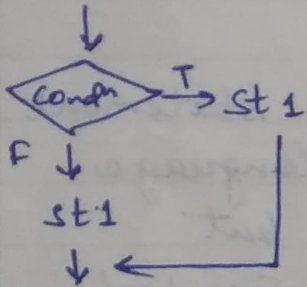
WORKING:

Python prog. begin with first st. → Each st. is executed → When final statement of prog. is executed prog. is done.

SELECTION :- means execution of st. depending upon condⁿ test

[IF St.]

- Also called decision construct ∴ it helps in making decision about which set of instruction is to be executed.

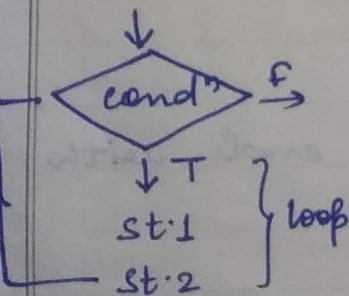


WORKING:

If Py. prog. condⁿ evaluated to true a set of statement is followed, if false another set of st. is followed.

REPETITION / ITERATION / LOOPING:

- means repetition of set of st. depending upon condⁿ test
- set of st. that are repeated again and again is called body of loop.
- condⁿ on which execution / exit of loop depends is called test-condⁿ / exit condⁿ



WORKING:

In Py. prog. till the time condⁿ is True, a set of st. are repeated. As soon as condⁿ becomes false, repetition stops.

Two Types: Condⁿ at Loop : while (condⁿ based loop)
Counting loop : for (loop for given no. of times)

IF STATEMENT :- It test a condⁿ & if condⁿ evaluates to True, it carries out some instruction & does nothing in case condⁿ evaluates to False.

Expt. (one condⁿ)

Page No. _____

Syn:-

if <condⁿ exp> :

st.

st.

} If its True, st. of body is executed otherwise ignored.

Ex: ch = input("Enter a character")
if ch == ' ':
 print("You entered a space")

IF - ELSE STATEMENT :- If evaluates True, block below if gets executed. If evaluates False, block below else gets executed.

(2 condⁿ)

can be check.

Syn:-

if <condⁿ exp> :

st 1

else :

st 1.

Ex: If a >= 0 :
 print(a)
else :
 print(a, " is a negative number")

IF - ELIF - STATEMENT :- If inside another if-else.

Syn:-

- as many times possible u can add elif

if <condⁿ exp> :

& if <condⁿ exp> :

st.

st.

elif <condⁿ exp> :

elif <condⁿ exp> :

st.

st.

else :

st.

Date _____

Teacher's Signature : _____

Ex: if sum ≥ 100 :
 print("Century")
 elif (sum ≥ 50):
 print("fifty")
 else:
 print("Score less")

NESTED IF STATEMENT :- if inside another if
 (Multiple if condⁿ) if inside another elif
 if inside another else body.

Syn:-

1) if <condⁿ>:
 if <condⁿ>:
 st.
 else:
 else: st.
 st.

2) if <condⁿ>:
 st.
 elif <condⁿ>
 if <condⁿ>
 st.
 else:
 st.
 else:
 st.

3) if <condⁿ>
 st.
 elif <condⁿ>
 st.
 else:
 if <condⁿ>
 st.
 else:
 st.

4) if <condⁿ>:
 if <condⁿ>:
 st.
 else:
 st.
 elif <condⁿ>:
 if <condⁿ>:
 st.
 else:
 st.
 else:
 if <condⁿ>:
 st.
 else:
 st.

STORING CONDⁿ :-

We can name the condⁿ as sometimes condⁿ used in code are complex and repetitive.

Ex: if deposit < 2000 & time ≥ 2 :
 st:

Named condⁿ :- a = deposit < 2000 & time ≥ 2

Ex :- if a:
 st.

Range fⁿ : - used with for loop.
Expt. No. _____ - generates list which is special sequence type. Page No. _____

Sequence :- succession of values bound together by a single name. Ex: string, list, tuple

Syn:- range (<lower limit>, <upper limit>, <step value>)
range(l, u, s)

Ex:- range(10) : (0, 1, 2, 3, 4, 5, 6, 7, 8, 9)

range(1, 5) : (1, 2, 3, 4,)

range(1, 5, 2) : (1, 3,)

FOR LOOP :- process the item of any sequence like list or string, one by one.

Syn:- for <variable> in <seq> :
st.

Ex:- for a in [1, 2, 3]:
print(a)

O/p -
1
2
3

WORKING:-

→ Loop variable is assigned 1st value in seq.

→ All st. in body of for loop executed with assigned value of loop.

→ Then next value is assigned
→ Continues till all values in seq. are processed.

Ex:- for a in range(1, 10, 2):
print(a)

O/p 1
3
5
7
9

Range fⁿ used for larger list

NESTED LOOP :- LOOP Inside another loop.

Syn:- for i in range(1, 10, 2):

for j in range(1, i):

print("*")

print()

Working:-

→ Inner loop is executed

→ i value is assigned (1, 3, 5, 7, 9)

→ value of outer loop (1, 5, 9, ...)

will change only after inner loop is completely finished

Date _____

Teacher's Signature : _____

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Expt. No. _____ - generates list which is special sequence type. Page No. _____

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range(l, u, s)

Ex:- range(10) : 10, 1, 2, 3, 4, 5, 6, 7, 8, 9

range(1, 5) : (1, 2, 3, 4, 5)

range(1, 5, 2) : (1, 3, 5)

FOR LOOP :- process the item of any sequence like list or string, one by one.

Syn:- for <variable> in <seq> :
st.

Ex:- for a in [1, 2, 3]:

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O/p - 1

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3

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Ex:- for a in range(1, 10, 2):

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O/p 1

3

5

7

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Syn:- for i in range(1, 10, 2):

for j in range(1, i):

print("*")

print()

Working:-

→ Inner loop is executed

→ i value is assigned (1, 3, 5, 7, 9)

→ value of outer loop (1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 53, 57, 61, 65, 69, 73, 77, 81, 85, 89, 93, 97, 101, 105, 109, 113, 117, 121, 125, 129, 133, 137, 141, 145, 149, 153, 157, 161, 165, 169, 173, 177, 181, 185, 189, 193, 197, 201, 205, 209, 213, 217, 221, 225, 229, 233, 237, 241, 245, 249, 253, 257, 261, 265, 269, 273, 277, 281, 285, 289, 293, 297, 301, 305, 309, 313, 317, 321, 325, 329, 333, 337, 341, 345, 349, 353, 357, 361, 365, 369, 373, 377, 381, 385, 389, 393, 397, 401, 405, 409, 413, 417, 421, 425, 429, 433, 437, 441, 445, 449, 453, 457, 461, 465, 469, 473, 477, 481, 485, 489, 493, 497, 501, 505, 509, 513, 517, 521, 525, 529, 533, 537, 541, 545, 549, 553, 557, 561, 565, 569, 573, 577, 581, 585, 589, 593, 597, 601, 605, 609, 613, 617, 621, 625, 629, 633, 637, 641, 645, 649, 653, 657, 661, 665, 669, 673, 677, 681, 685, 689, 693, 697, 701, 705, 709, 713, 717, 721, 725, 729, 733, 737, 741, 745, 749, 753, 757, 761, 765, 769, 773, 777, 781, 785, 789, 793, 797, 801, 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