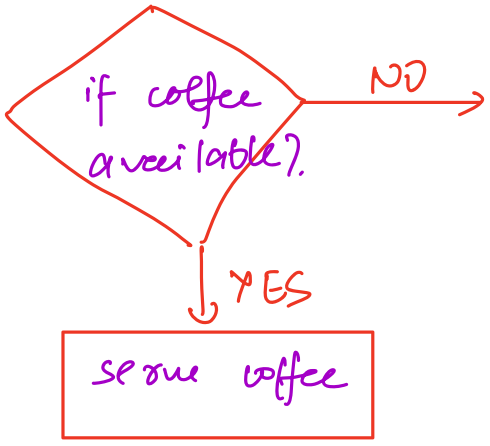
If - Else

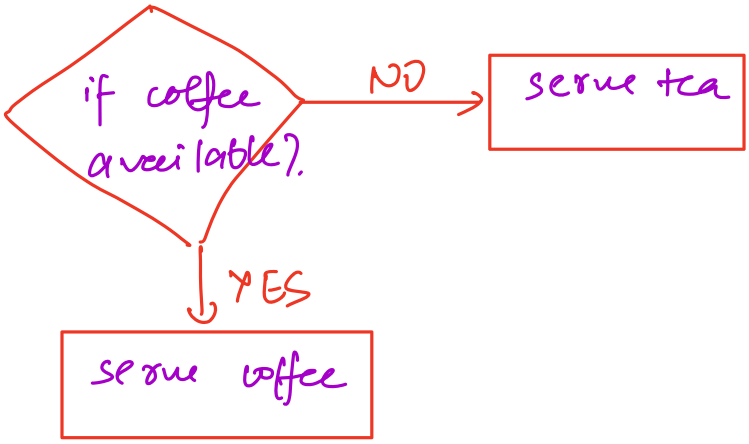
Ordering coffee from a cafe :

customer can ask : if you have coffee , then provide it.



customer can ask : if you have coffee , then provide it

else provide tea



If - Else syntax

true/false (boolean datatype)

```
if ( is coffee available ? ) {
    // serve coffee
}
else {
    // serve tea
}
```

Question 1

Given integer age as input, print whether the person is eligible to vote or not?

if age >= 18 → eligible

age = 20 ⇒ o/p : "Eligible"

age = 14 ⇒ o/p : "Not Eligible"

Code

```
if ( age >=18) {
    System.out.print(" Eligible");
}
else {
    System.out.print(" Not Eligible");
}
```

Question 2

Given two integers A & B as input, print the larger.

Note: A will not be equal to B

A = 4, B = 6 ⇒ o/p: " 6 is bigger"

A = 9, B = 6 ⇒ o/p: " 9 is bigger"

Question 2 - Part 2

A & B can be equal also.

⇒ if A > B ⇒ " A is bigger"

else if B > A ⇒ " B is bigger"

else ⇒ "Both are equal"

Question 3

Given a temperature of patient in faherheit as input, print whether the temp. is low, normal or high.

normal : 98.2 to 98.8

i/p : 98.1 ⇒ o/p : "low"

98.5 ⇒ o/p : "normal"

99.3 ⇒ o/p : "high"

if temp < 98.2 ⇒ "low"

else if temp > 98.8 ⇒ "high"

else ⇒ "normal"

Operators

Division (/)

output datatype based on dividend & divisor datatype

- int / int → int
- float / int → float
- int / float → float
- float / float → float
- long / int → long
- double / float → double

int / long are replacable

float / double " "

Multiplication (*)

- same as division

- int * int → int
- int * long → long
- long * int → long
- long * long → long

int / float are replacable

long / double " "

Modulo (%)

→ gives remainder when a is divided by b.

a % b = remainder when a is divided by b.

7 % 3 = 1 (3 × 2 + 1 = 7)

8 % 5 = 3 (5 × 1 + 3 = 8)

10 % 1 = 0 (10 × 1 + 0 = 10)

5 % 12 = 5 (12 × 0 + 5 = 5)

17 % 4 = 1 (4 × 4 + 1 = 17)

a % b = 0 (when b completly divides a)
⇒ no remainder

Question 4

Given an integer as input, print whether it is even or odd.

i/p: 3 ⇒ o/p : "odd"

i/p: 6 ⇒ o/p : "even"

```
if (a%2 == 0)
```

a%2 only has 2 values = 0, 1

Code

```
if( a%2 == 0) {
    System.out.print("even");
}
else {
    System.out.print("odd");
}
```

Question 5

Given an integer as input, print its last digit.

i/p : 73 ⇒ o/p : 3

i/p : 651 ⇒ o/p : 1

i/p : 60 ⇒ o/p : 0

i/p : 5 ⇒ o/p : 5

73 ⇒ (7×10 + 3) %10 = 3

651 ⇒ (6×100 + 5×10 + 1) %10 = 1

3550 ⇒ (3×1000 + 5×100 + 5×10 + 0) %10 = 0

Code

```
int a = scn.nextInt();
System.out.print(a%10);
```

Relational operators

A > B → check whether A is greater than B

A < B → " " A is less than B

A >= B → " " A is greater than or equal to B

A <= B → " " A is less than or equal to B

A == B → " " A is equal to B

A != B → " " A is not equal to B

operand datatype could be anything (int/long/float/double)

o/p is boolean

Logical operators

operand datatype is boolean

o/p is boolean

AND (&&)

A	B	A && B
T	T	T
T	f	f
f	T	f
f	f	f

OR (II)

A	B	A || B
T	T	T
T	f	T
f	T	T
f	f	f

Question 6

Given units of electricity consumed as integer input A, print the bill amount.

price for [1, 50] → ₹ 1 per unit

[51, 100] → ₹ 2 per unit

[101 to beyond] → ₹ 4 per unit

i/p : 20 ⇒ o/p : 20×1 = 20

i/p : 80 ⇒ o/p : 50×1 + 30×2 = 50+60 = 110

i/p : 120 ⇒ o/p : 50×1 + 50×2 + 20×4

= 50+100+80 = 230

Code

```
int A = sc.nextInt();

if (A <= 50) {
    System.out.print(A * 1);
}
else if (A >= 51 && A <= 100) {
    System.out.print(50 + (A - 50) * 2);
}
else {    // A > 100
    System.out.print(50 + 100 + (A - 100) * 4);
}
```

Question 7

Given an integer A as input

if it is multiple of 3, print "fizz"

if it is multiple of 5, print "Buzz"

if it is multiple of 3 and 5, print "fizz-Buzz"

i/p : 5 ⇒ o/p : "Buzz"

3 ⇒ "fizz"

30 ⇒ "fizz-Buzz"

Code Link : https://www.scaler.com/topics/java/online-java-compiler/?snippet_slug=a5780059750cb04e74a1