

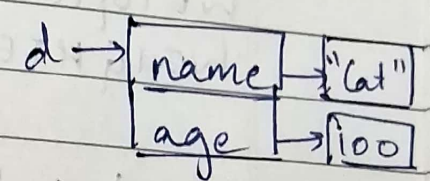
PSA Class 8

Ruchika Shashidhara

No 002245068

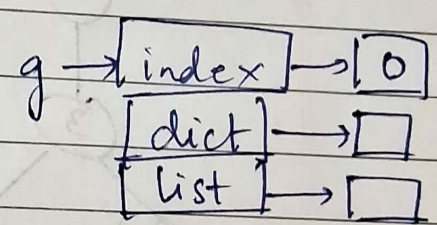
• Data

$d = \text{Data}(\text{"Cat"})$

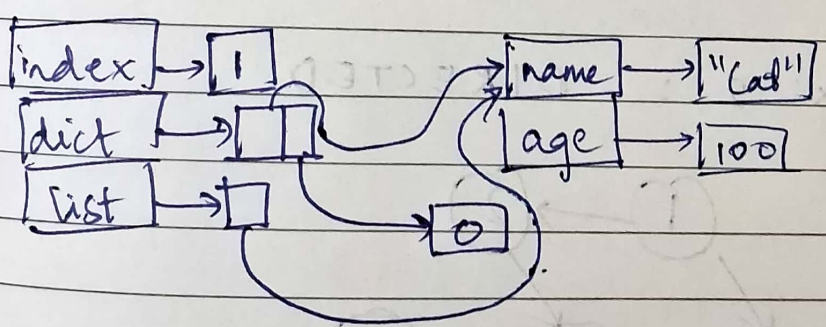


• Graph Interface

$g = \text{Graph Interface}$

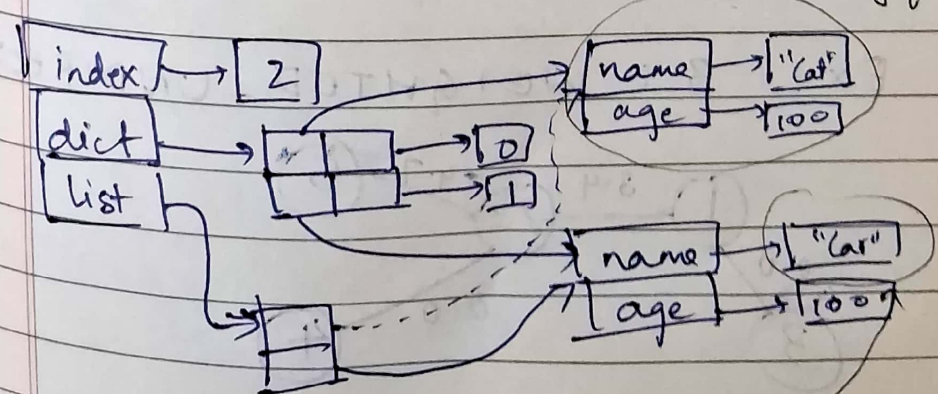


$g.\text{insert}(\text{Data}(\text{"Cat"}))$



$g.\text{insert}(\text{Data}(\text{"Car"}))$

$g.\text{find}(\text{Data}(\text{"Cat"}))$   
 $\swarrow$   
 $g.\text{find-by-name}(\text{"Cat"})$



$g.\text{--getitem--}(i)$  or  $g[i]$

## • Graph Type

NONE = 0

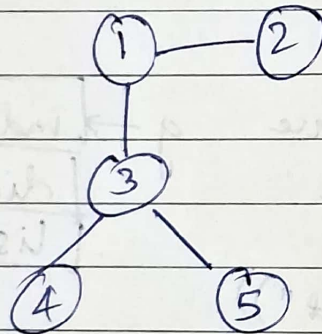
UNDIRECTED = 1

DIRECTED = 2

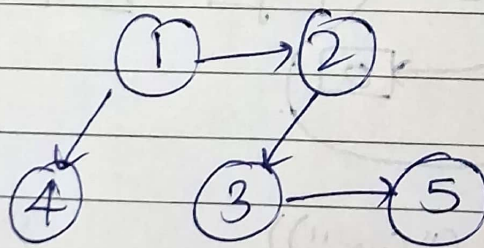
WEIGHTED - UNDIRECTED = 3

WEIGHTED - DIRECTED = 4

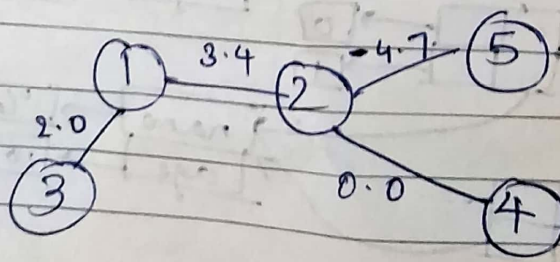
Ex: 1 : UNDIRECTED



Ex: 2 : DIRECTED



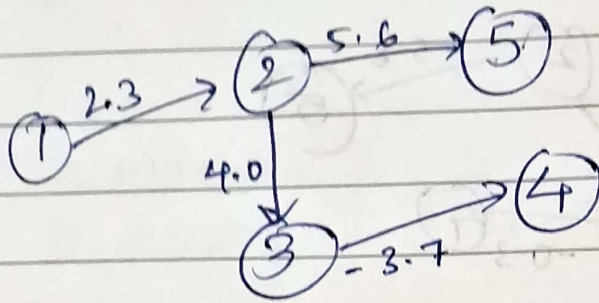
Ex: 3 : WEIGHTED - UNDIRECTED







Ex :: 4 : WEIGHTED, UNDIRECTED



$n = \text{Node}(2)$

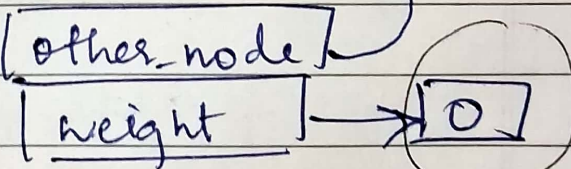
• Edge

$e1 = \text{Edge}(n, 0)$

$e1.get\_other\_node$

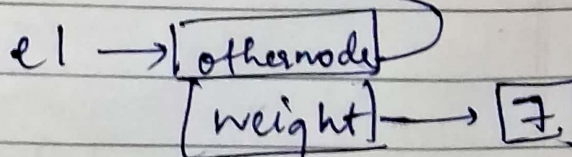
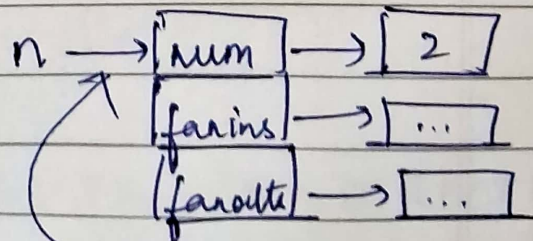
$e1.get\_num$

$e1 \Rightarrow$



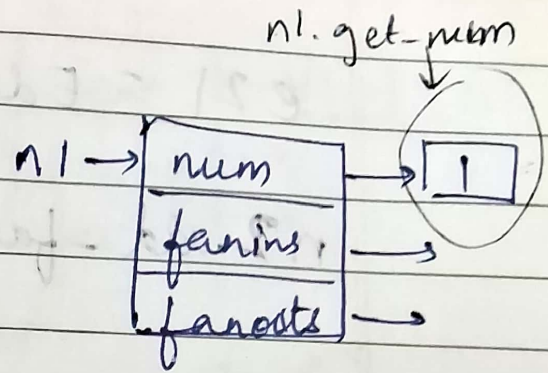
$e1.get\_weight$

$e1.change\_weight(7)$

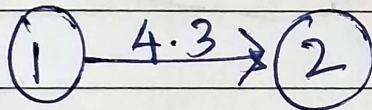
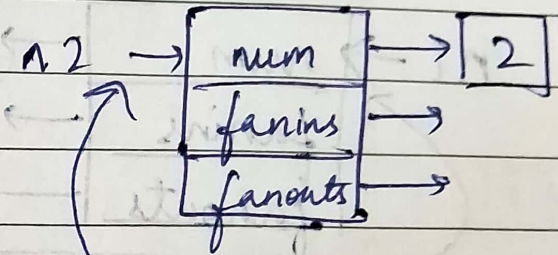


• Node

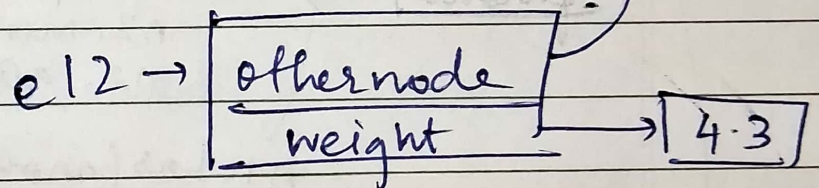
$n1 = \text{Node}(1)$



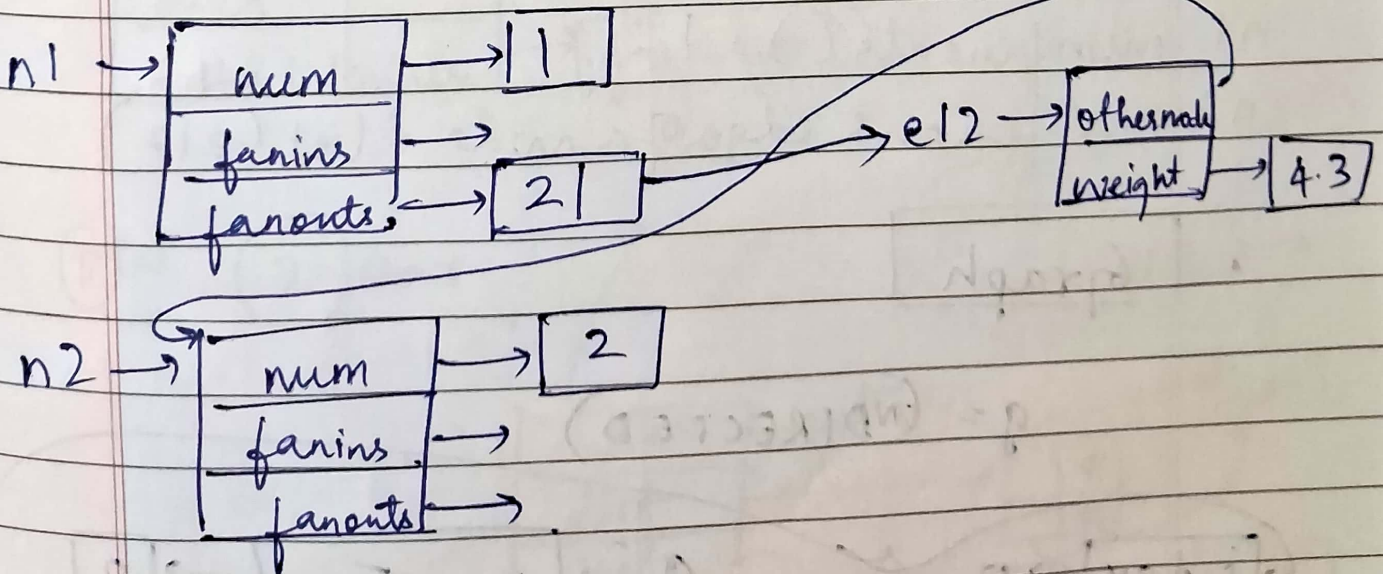
$n2 = \text{Node}(2)$



$e12 = \text{Edge}(n2, 4.3)$



$n1.add\_fan\_out(e12)$

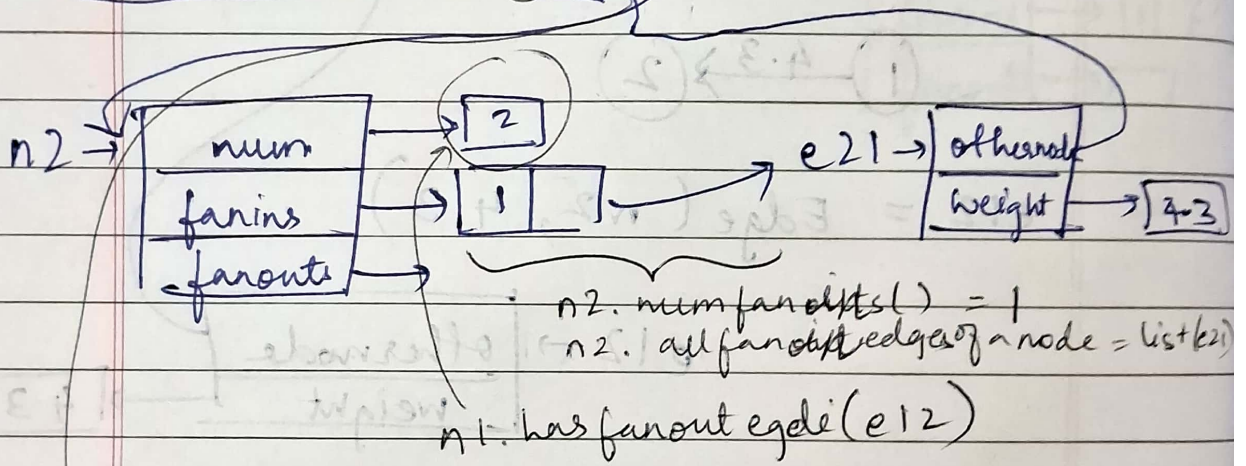
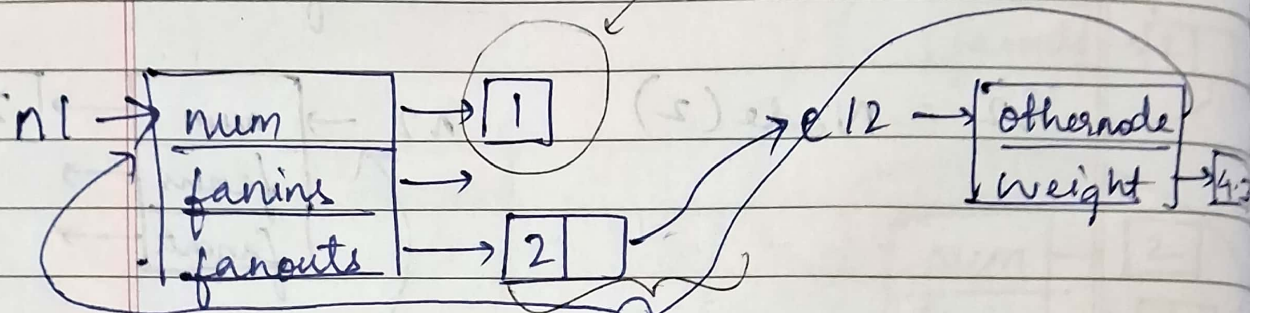




$e21 = \text{Edge}(n1, 4.3)$

n2.add\_fan\_in(e21)

$n2$ . has - ~~fan~~ridge(e21)



n2. numfanalts() = 1

n2. all fan out edges of a node = list[k2]

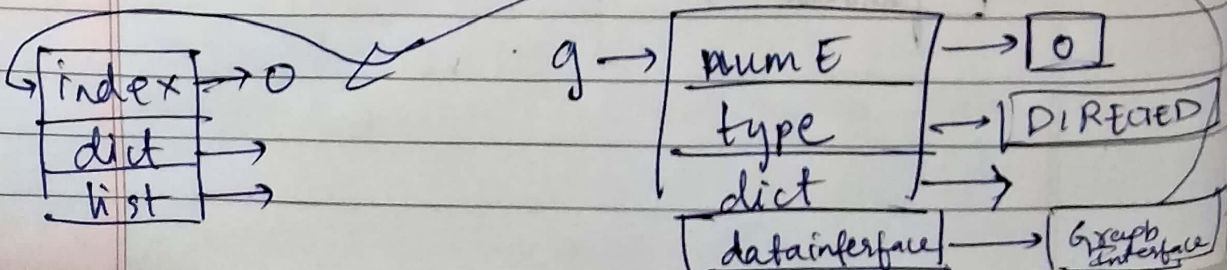
$n1$  has fanout  $egde(e12)$

$$n! \text{ arrangements} = 1$$

n2. all fan out edges of a node = list(e12)

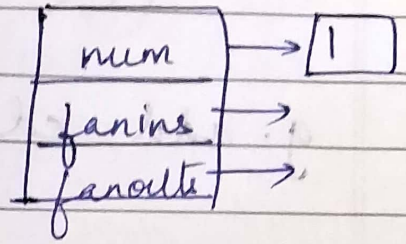
Graph

$g = (\text{UNDIRECTED})$

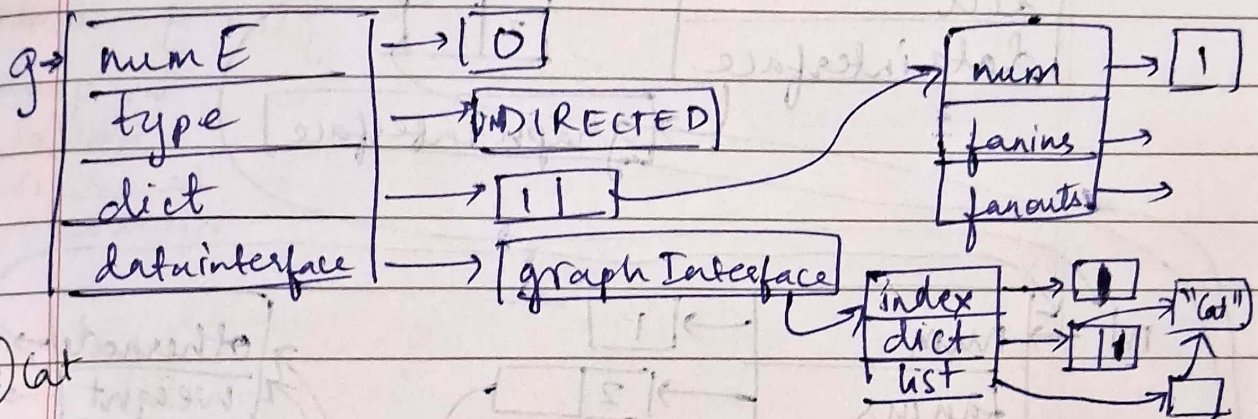




g. build\_node (1)

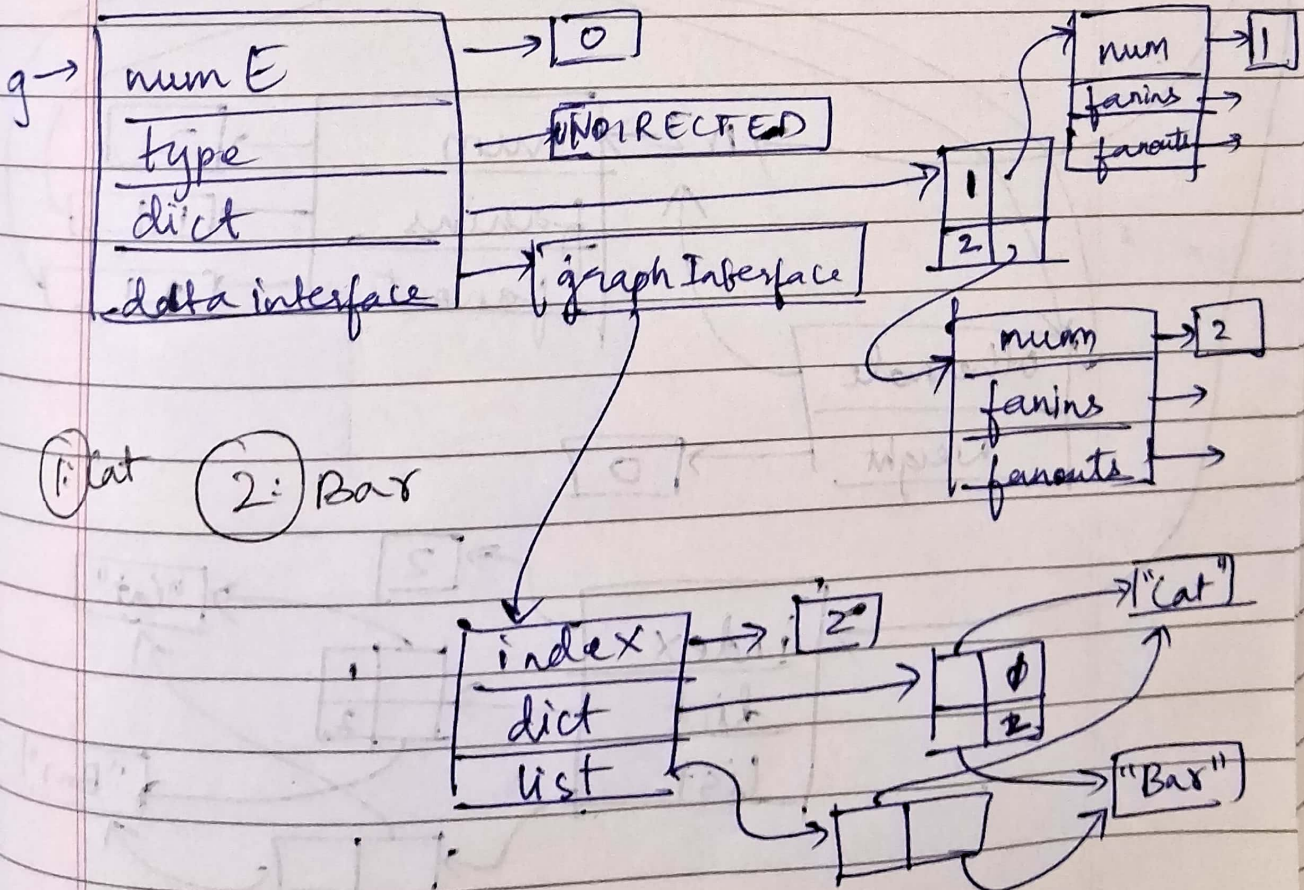


g. build\_node\_and\_to\_graph (1)



1: Cat

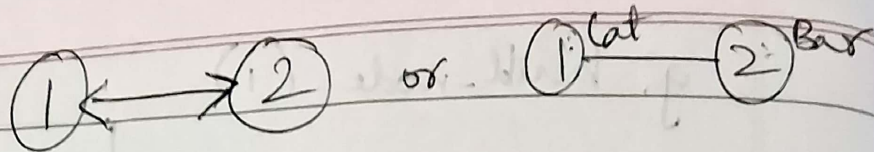
g. build\_node\_and\_to\_graph (2)



1: Cat

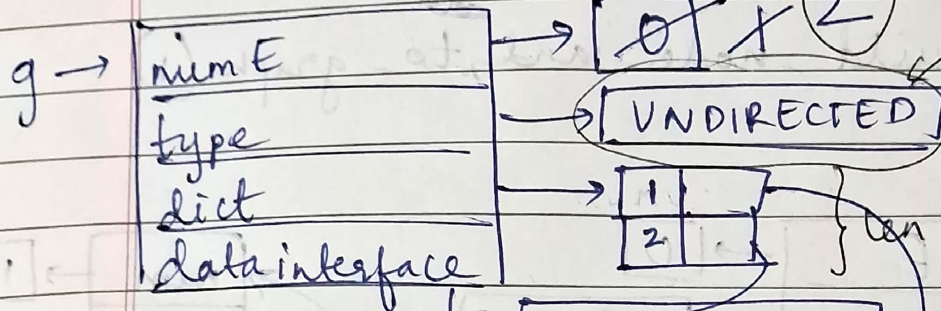
2: Bar



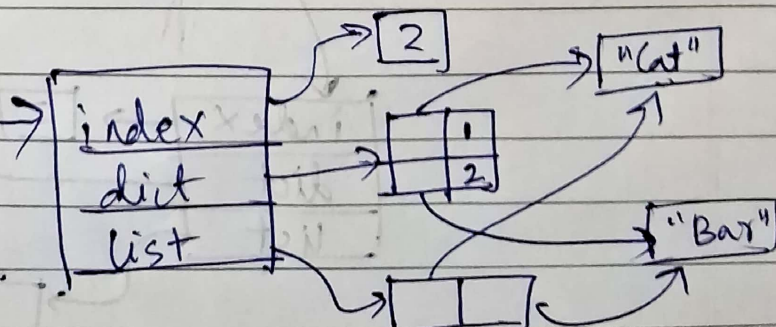
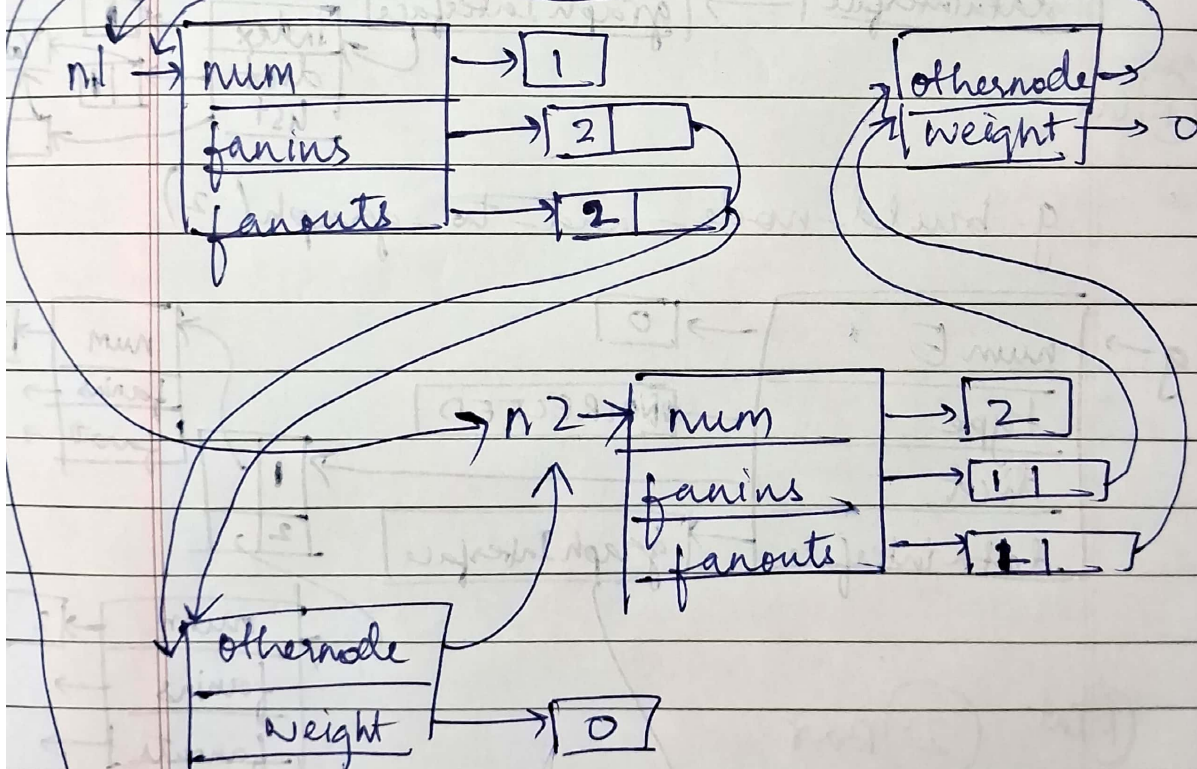


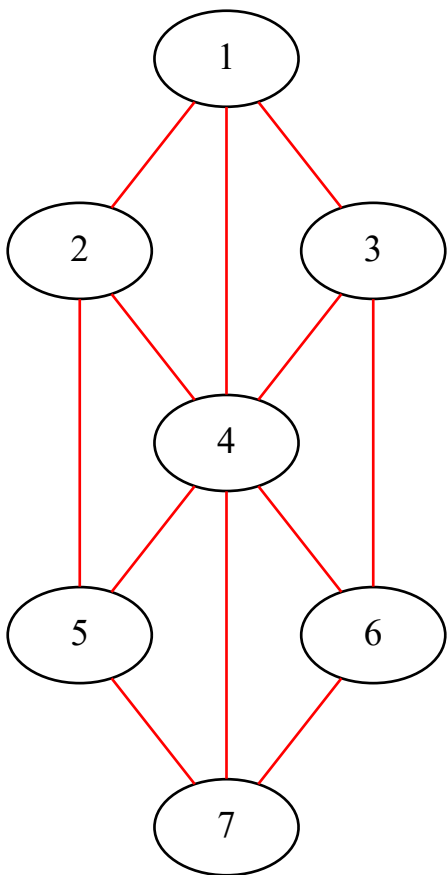
g.add\_edge(1, 2)

g.getnumE = 4  
 isundirected = true  
 isdirected = false  
 isweighted = false  
 getgraph\_type = UNDIRECTED

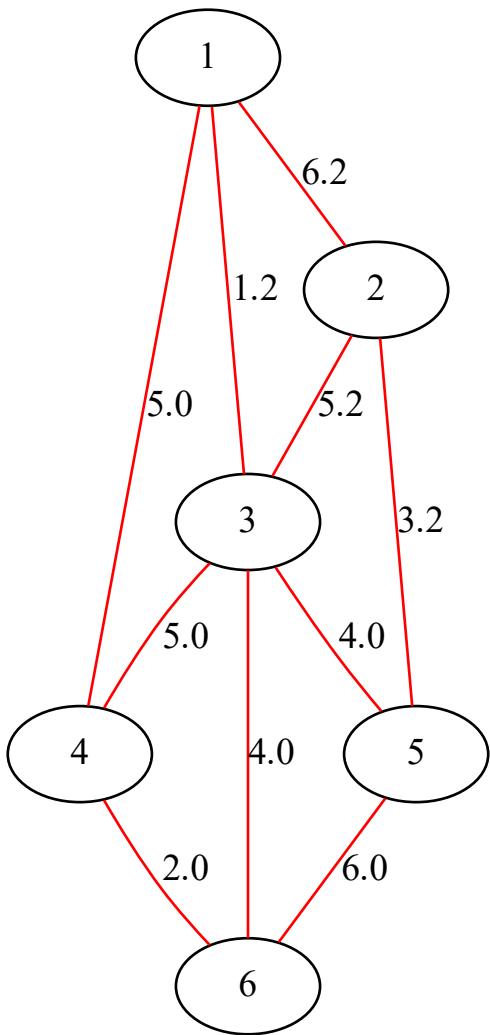


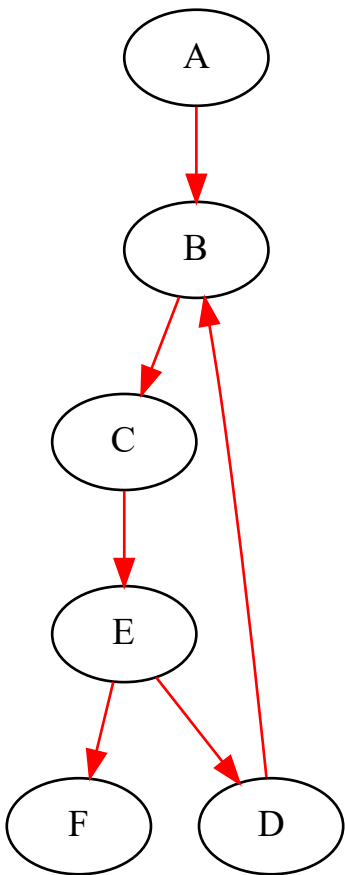
g.getnumV = 2  
 list of nodes = list(n1, n2)  
 has node(1) = true  
 get node(1) = n1



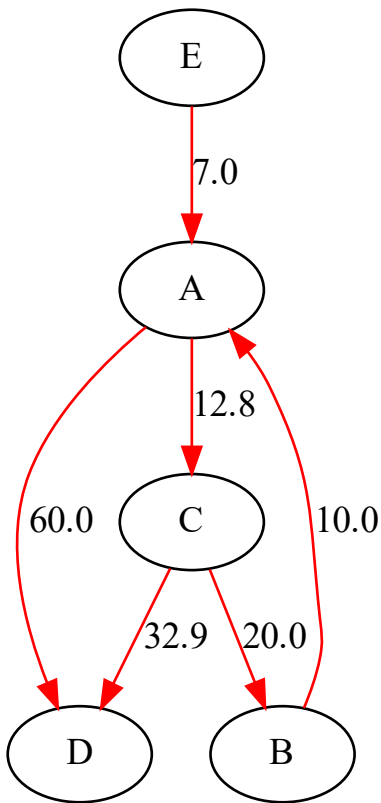


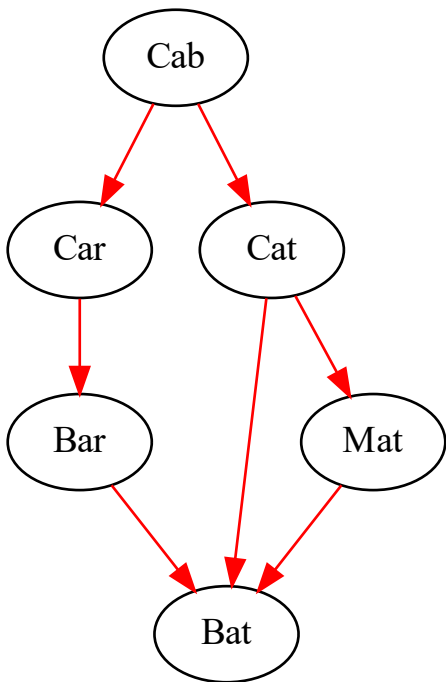




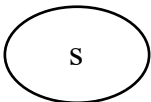




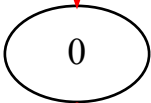




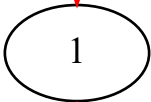




1.0



5.0



1.0

