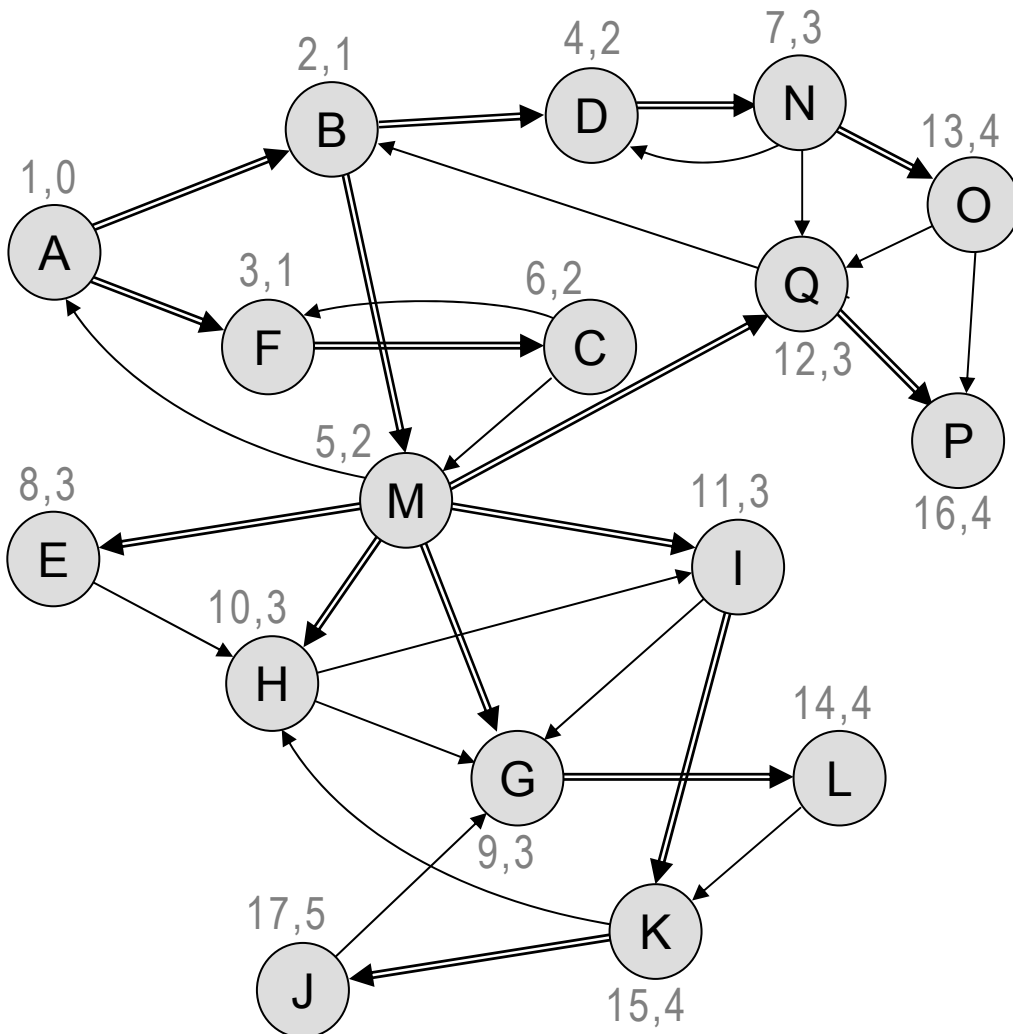


Breadth-first Search in Digraphs

\Rightarrow denotes a tree edge.

The two integers above each vertex are

- i) A sequence number k . The vertex is the k^{th} vertex enqueued, and also the k^{th} vertex dequeued and processed.
- ii) The “distance” from the starting vertex (in our example, A). Here distance simply means the minimal number of edges on a path from the starting vertex.



Operation	Current	Queue
enq A		A
deq A	A	
enq B	A	B
enq F	A	BF
deq B	B	F
enq D	B	FD
enq M	B	FDM
deq F	F	DM
enq C	F	DMC
deq D	D	MC
enq N	D	MCN
deq M	M	CN
enq E	M	CNE
enq G	M	CNEG
enq H	M	CNEGH
enq I	M	CNEGHI
enq Q	M	CNEGHIQ
deq C	C	NEGHIQ
deq N	N	EGHIQ
enq O	N	EGHIQO
deq E	E	GHIQO
deq G	G	HIQO
enq L	G	HIQOL
deq H	H	IQOL
deq I	I	QOL
enq K	I	QOLK
deq Q	Q	OLK
enq P	Q	OLKP
deq O	O	LKP
deq L	L	KP
deq K	K	P
enq J	J	PJ
deq P	P	J
deq J	J	