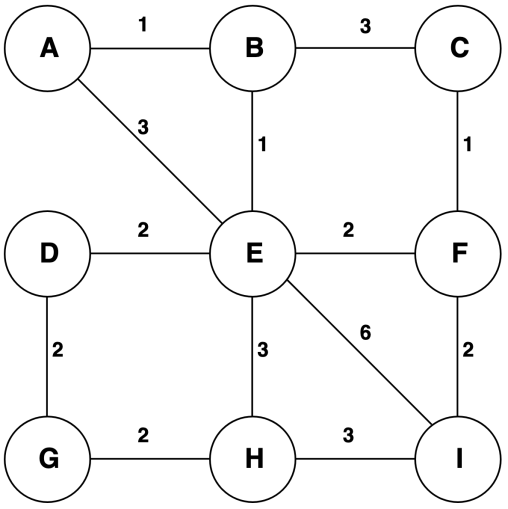
INTRODUCTION TO ARTIFICIAL INTELLIGENCE
Lab 7 – A star

1) **A star algorithm:** Find the shortest path between nodes A (source) and I (target) in the non-directed graph. The distance (cost) between two nodes is written next to the edge connecting these nodes.
For each iteration, complete the table containing the G and F values for nodes. Then write the current list of visited nodes (closed set) and unvisited (open set) nodes.



	A	B	C	D	E	F	G	H	I
H	8	7	6	5	4	3	2	1	0

I iteration:
Current node: A
Previous node: -
Closed set:
Open set:

Node			
G			
F			

II iteration:
Current node:
Previous node:
Closed set:
Open set:

Node	A	B	E				
G	0	1	3				
F	8	8	7				

III iteration:
Current node:
Previous node:
Closed set:
Open set:

Node	A	B	D	E	F	H		
G	0	1	5	3	5	6		
F	8	8	10	7	8	7		

IV iteration:
Current node:
Previous node:
Closed set:
Open set:

Node	A	B	D	F	G	H	I		
G	0	1	5	5	8	6	9		
F	8	8	10	8	10	7	9		

V iteration:
Current node:
Previous node:
Closed set:
Open set:

Node	A	B	C	E	G				
G	0	1	4	2	8				
F	8	8	10	6	10				

VI iteration:
Current node:
Previous node:
Closed set:
Open set:

Node	A	B	C	D	E	F	H		
G	0	1	4	4	2	4	5		
F	8	8	10	9	6	7	6		

VII iteration:
Current node:
Previous node:
Closed set:
Open set:

Node	A	B	D	E	F	G	H		
G	0	1	4	2	4	7	5		
F	8	8	9	6	7	9	6		

VII iteration:
Current node:
Previous node:
Closed set:
Open set:

Shortest path A-I: