A* Algorithm

Log

Graph

Open Set

A

Closed Set

Node Costs

0	0	0	0	0	0	0	0	0	0
A	C	D	E	F	I	G	B	J	H

A* Algorithm

Grabbing first node from open set

Graph

Open Set

A

Closed Set

Node Costs

0	0	0	0	0	0	0	0	0	0
A	C	D	E	F	I	G	B	J	H

A* Algorithm

Visiting node A and adding it to closed set

Graph

Open Set

Closed Set

A
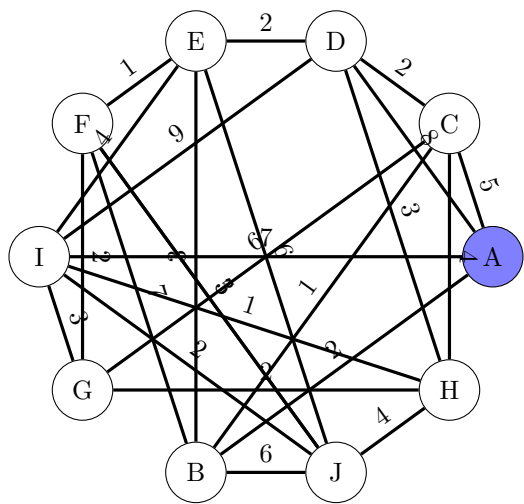
Node Costs

A	C	D	E	F	I	G	B	J	H
0	0	0	0	0	0	0	0	0	0

A* Algorithm

Checking neighbor B

Graph

Open Set

Closed Set

A
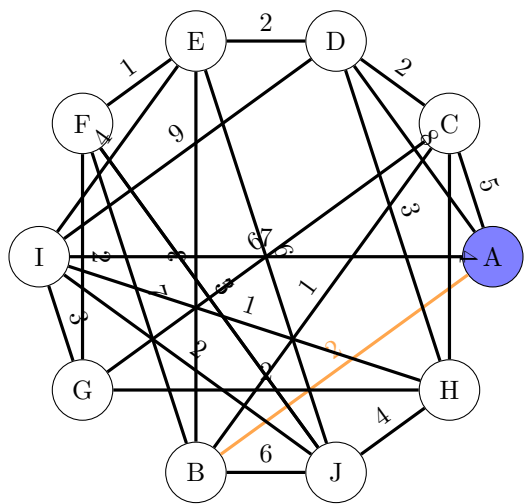
Node Costs

0	0	0	0	0	0	0	0	0	0
A	C	D	E	F	I	G	B	J	H

A* Algorithm

Adding neighbor B to open set

Graph
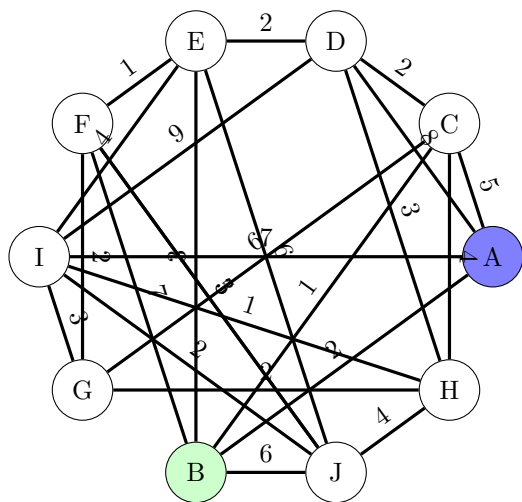
Open Set

B

Closed Set

A

Node Costs

0	0	0	0	0	0	0	0	0	0
A	C	D	E	F	I	G	B	J	H

A* Algorithm

Updating cost for neighbor B (cost: 2)

Graph

Open Set

B

Closed Set

A
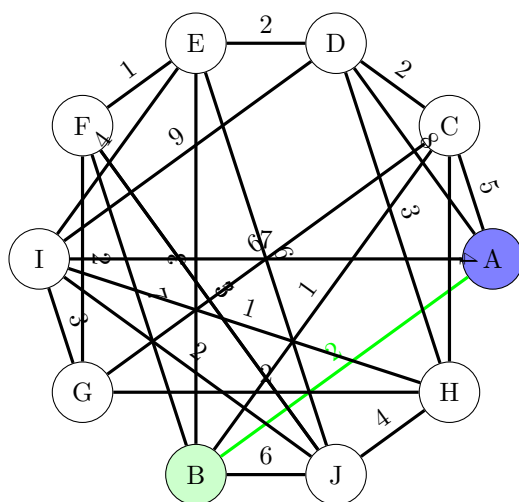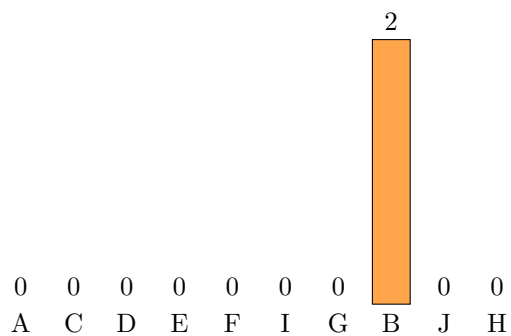
Node Costs

A* Algorithm

Checking neighbor C

Graph

Open Set

B

Closed Set

A

Node Costs

A	C	D	E	F	I	G	B	J	H
0	0	0	0	0	0	0	2	0	0
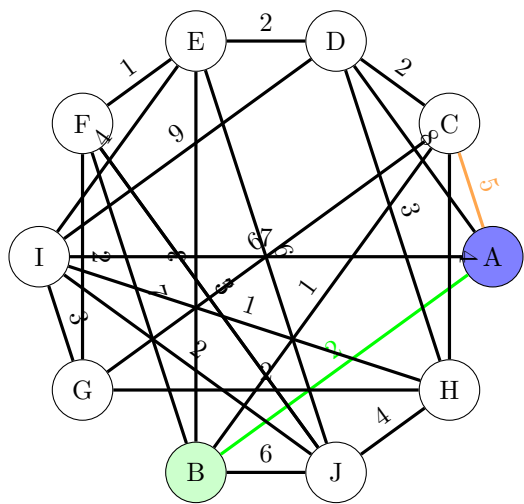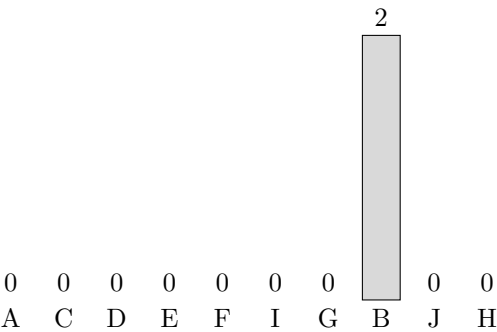
A* Algorithm

Adding neighbor C to open set

Graph

Open Set

B	C

Closed Set

A

Node Costs

							2		
0	0	0	0	0	0	0		0	0
A	C	D	E	F	I	G	B	J	H

A* Algorithm

Log
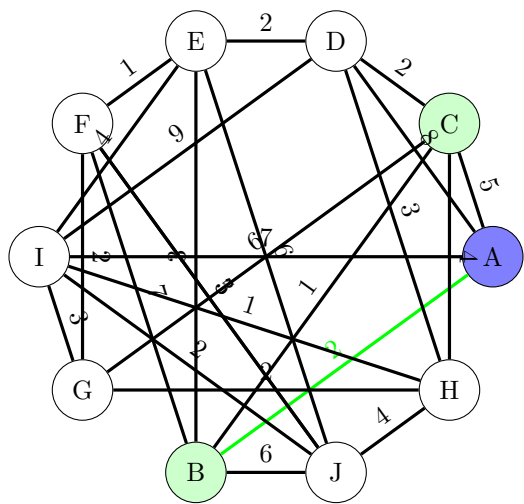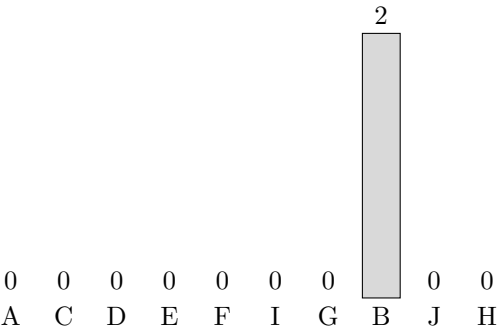
Updating cost for neighbor C (cost: 5)

Graph

Open Set

B	C

Closed Set

A
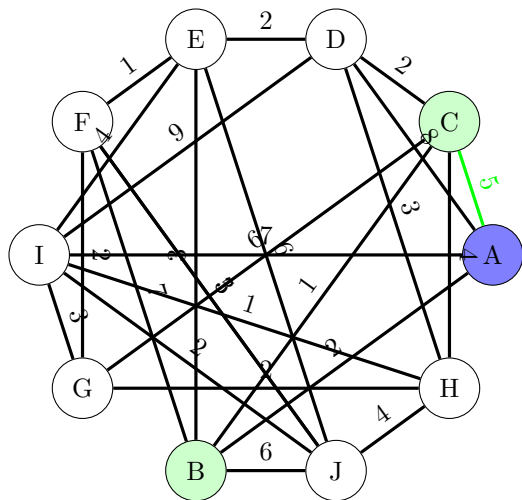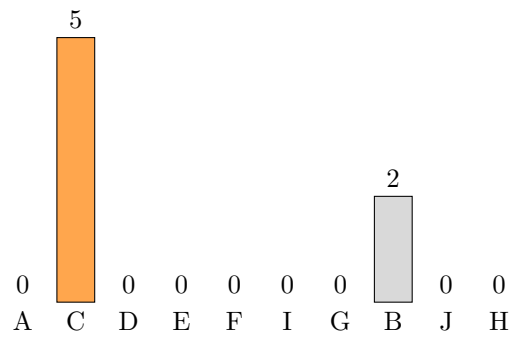
Node Costs

A* Algorithm

Checking neighbor D

Graph

Open Set

B	C

Closed Set

A
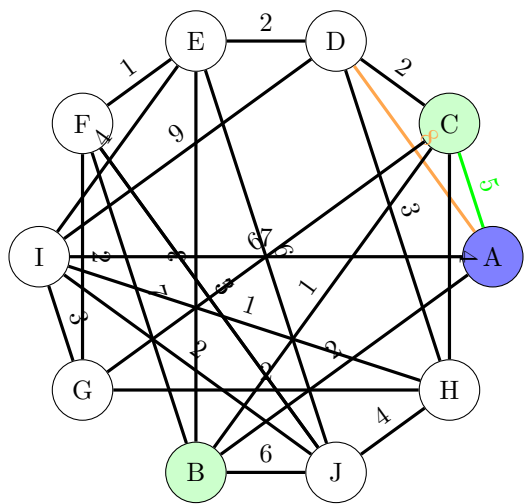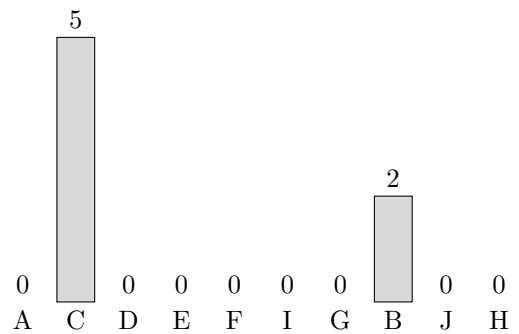
Node Costs

A* Algorithm

Adding neighbor D to open set

Graph

Open Set

B	C	D

Closed Set

A
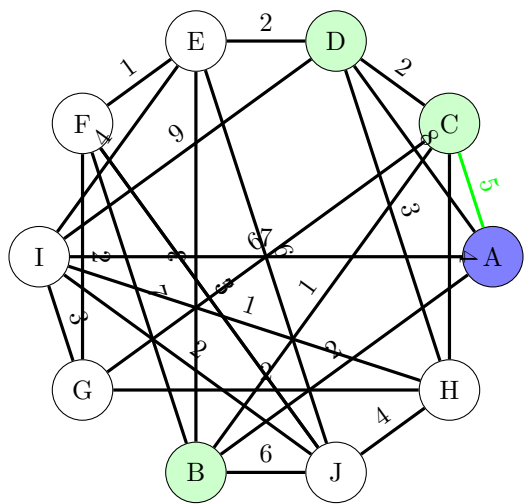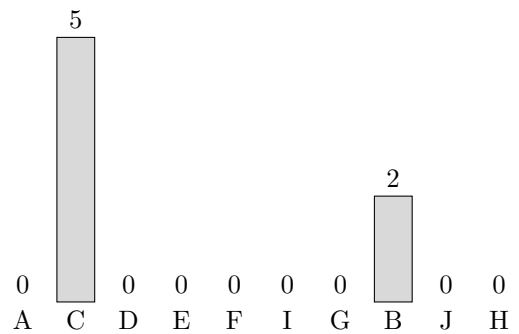
Node Costs

A* Algorithm

Updating cost for neighbor D (cost: 8)

Graph
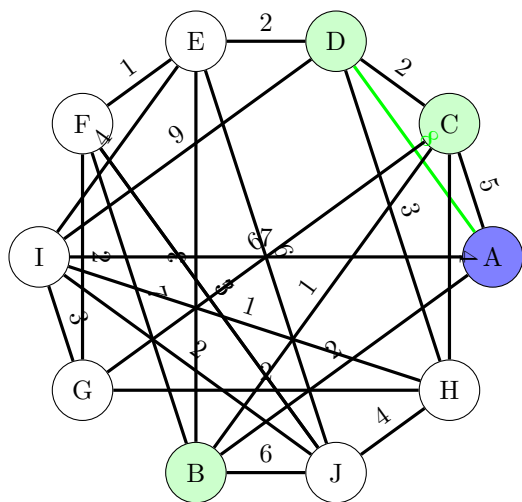
Open Set

B	C	D
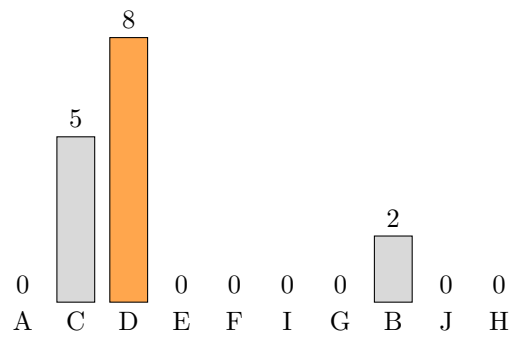
Closed Set

A

Node Costs

A* Algorithm

Log

Graph

Open Set

B	C	D

Closed Set

A
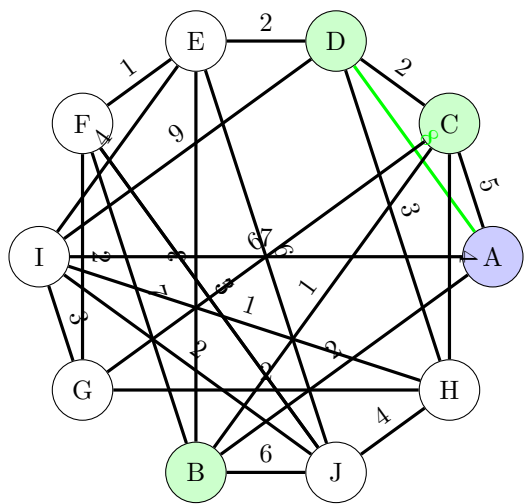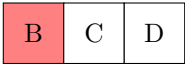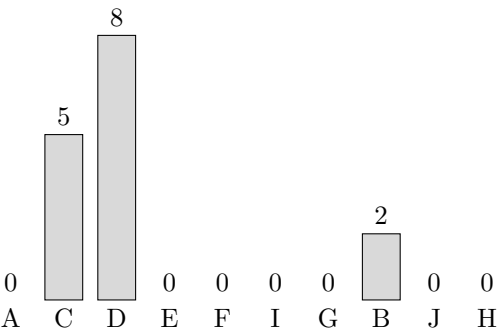
Node Costs

A* Algorithm

Visiting node B and adding it to closed set

Graph

Open Set

C	D

Closed Set

A	B
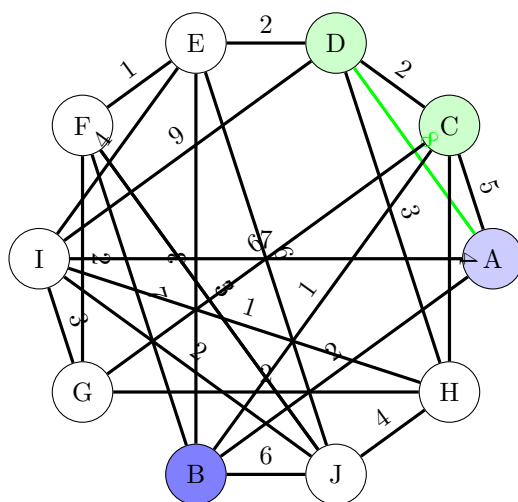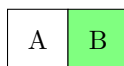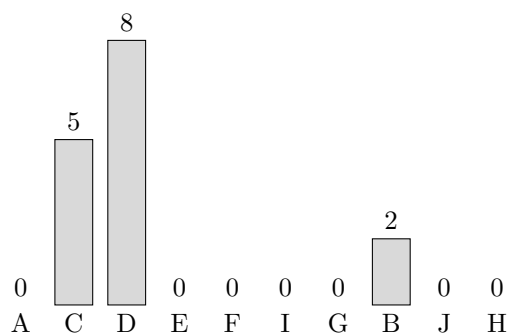
Node Costs

A* Algorithm

Checking neighbor C

Graph

Open Set

C	D

Closed Set

A	B
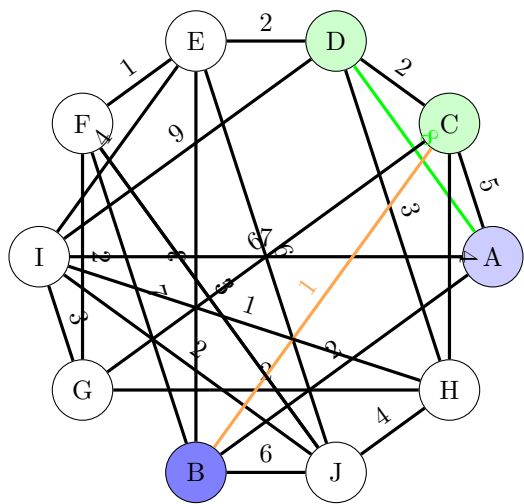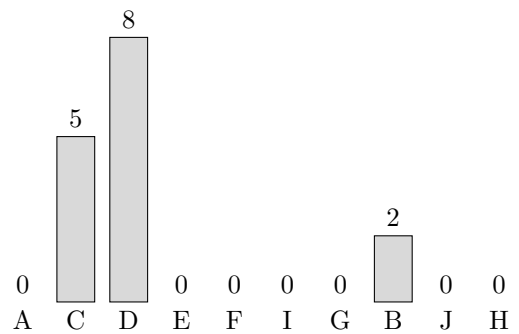
Node Costs

A* Algorithm

Updating cost for neighbor C (cost: 3)

Graph

Open Set

C	D

Closed Set

A	B
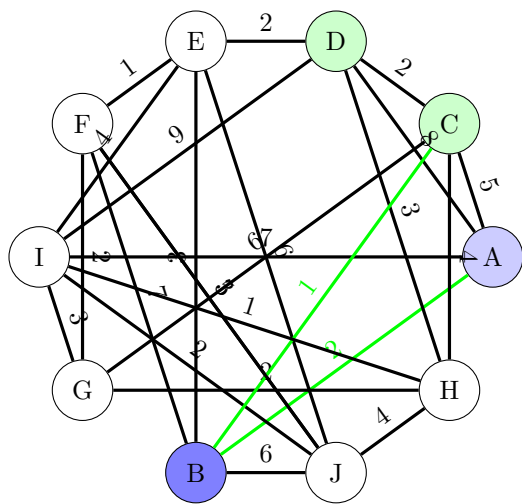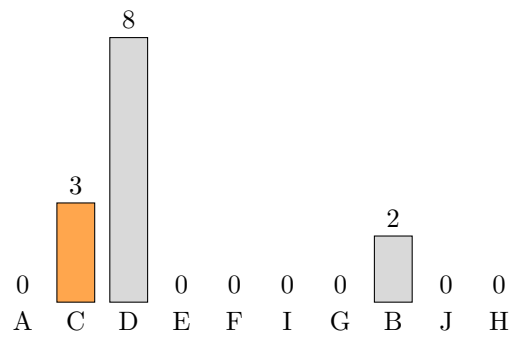
Node Costs

A* Algorithm

Checking neighbor E

Graph

Open Set

C	D

Closed Set

A	B
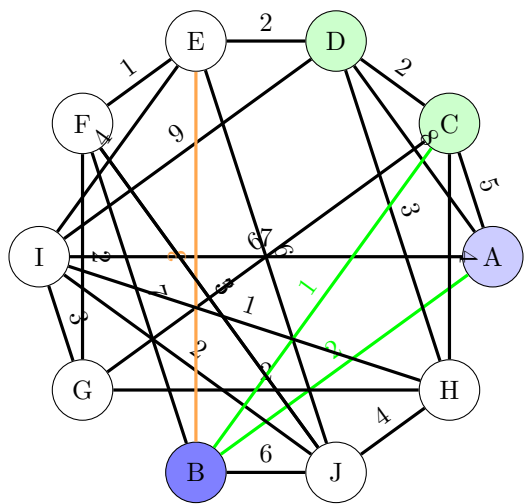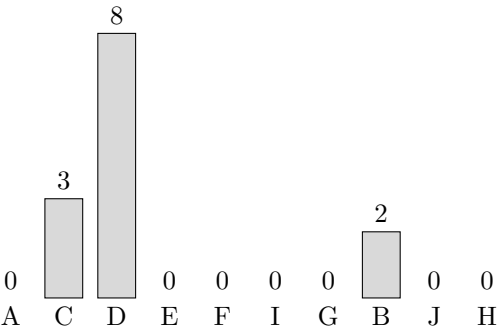
Node Costs

A* Algorithm

Adding neighbor E to open set

Graph

Open Set

C	D	E

Closed Set

A	B

Node Costs

18
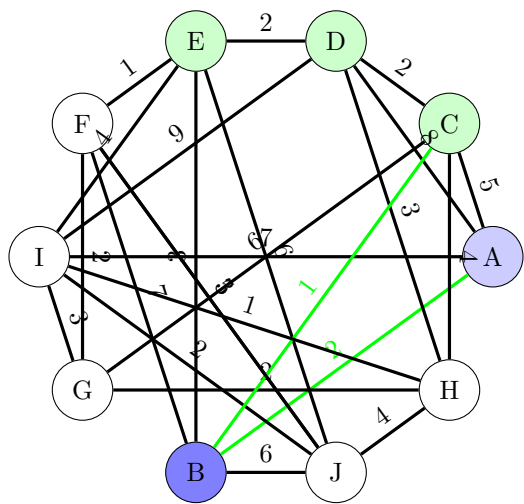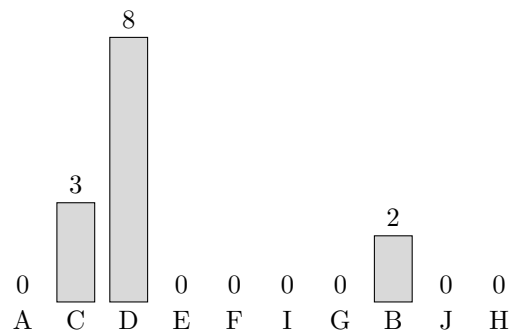
A* Algorithm

Updating cost for neighbor E (cost: 5)

Graph
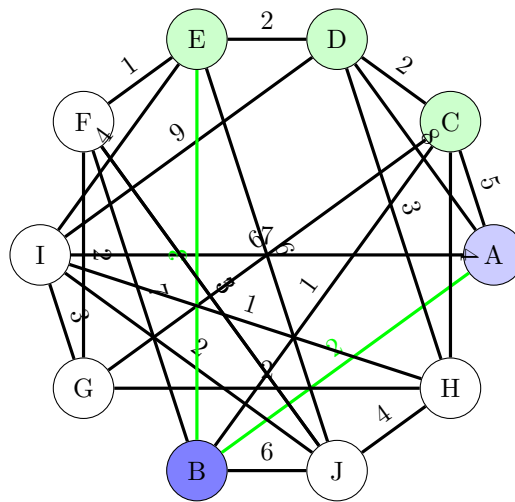
Open Set

C	D	E
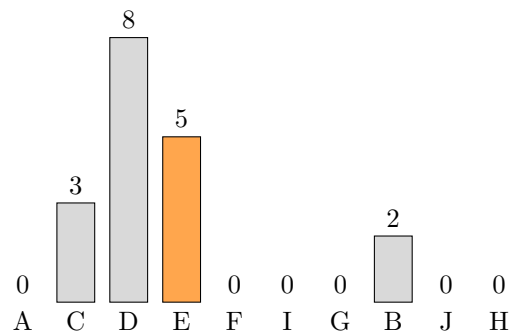
Closed Set

A	B

Node Costs

A* Algorithm

Log

Graph

Open Set

C	D	E

Closed Set

A	B
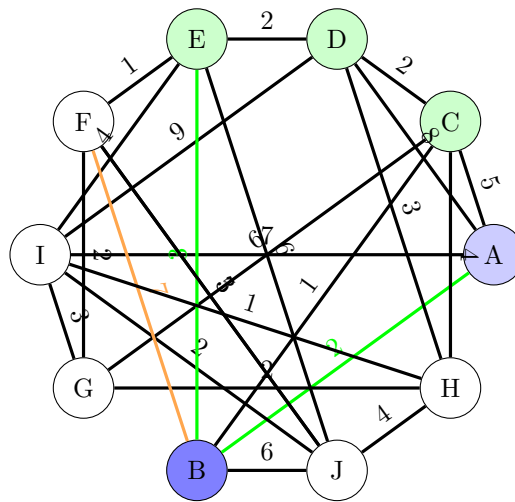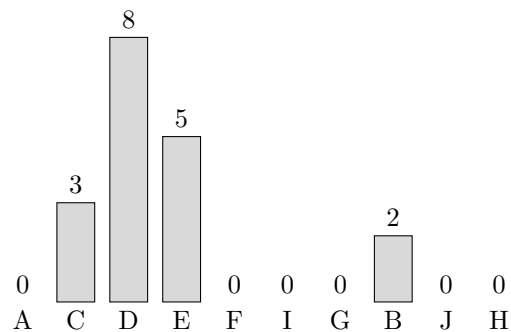
Node Costs

A* Algorithm

Adding neighbor F to open set

Graph

Open Set

C	D	E	F

Closed Set

A	B
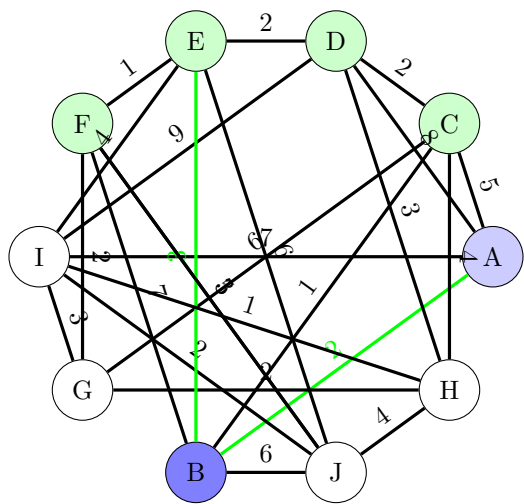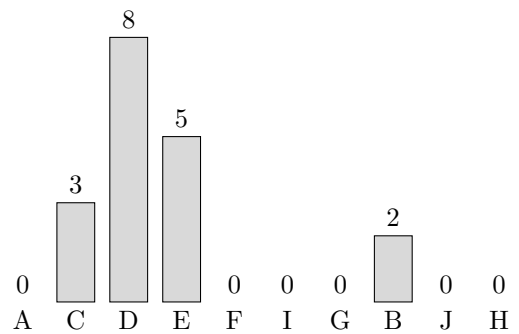
Node Costs

A* Algorithm

Updating cost for neighbor F (cost: 9)

Graph
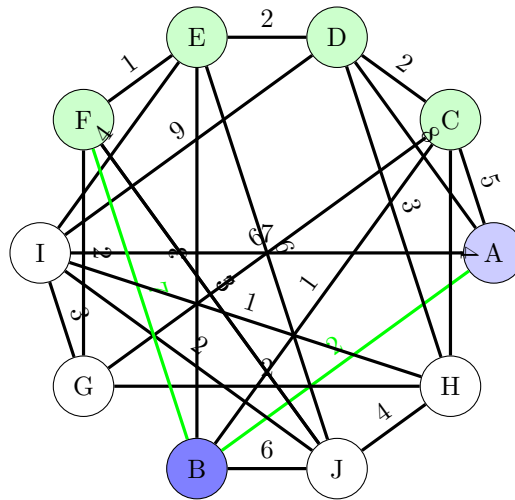
Open Set

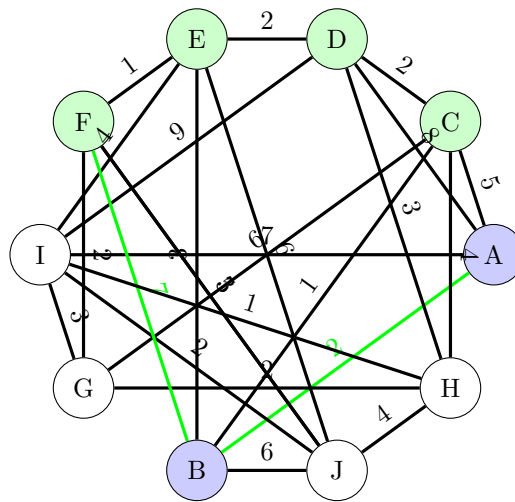| C	D	E	F
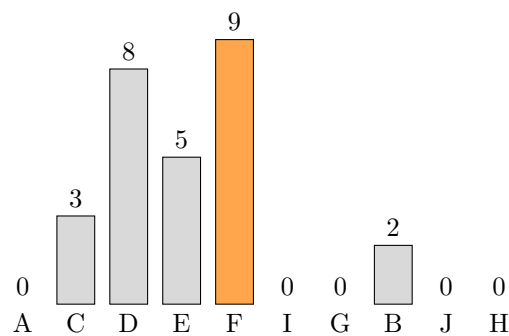
Closed Set

A	B

Node Costs

A* Algorithm

Grabbing first node from open set

Graph

Open Set
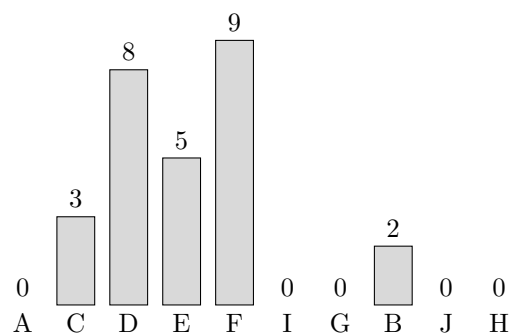
C	D	E	F

Closed Set

A	B
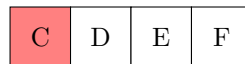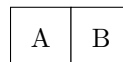
Node Costs

A* Algorithm

Visiting node C and adding it to closed set

Graph

Open Set

D	E	F

Closed Set

A	B	C
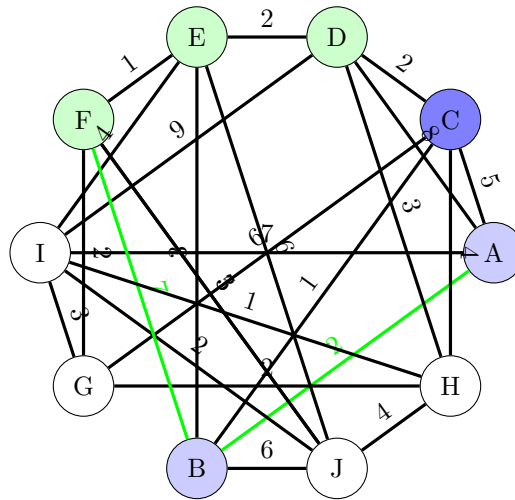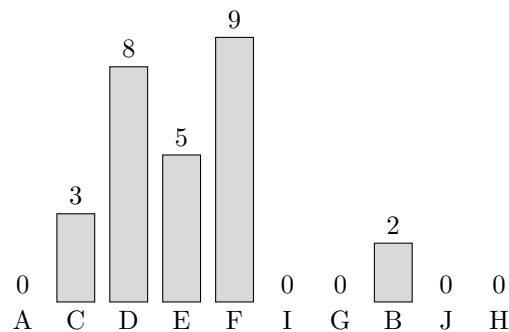
Node Costs

A* Algorithm

Checking neighbor D

Graph

Open Set

D	E	F

Closed Set

A	B	C
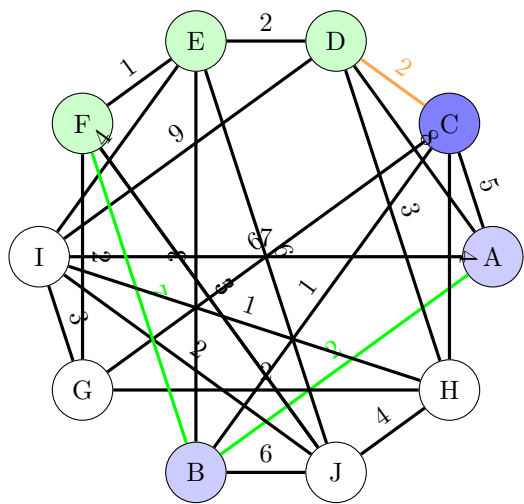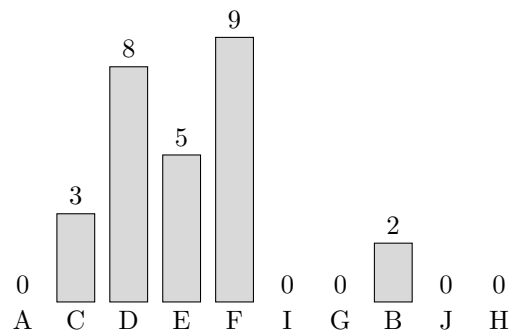
Node Costs

A* Algorithm

Updating cost for neighbor D (cost: 5)

Graph

Open Set

D	E	F

Closed Set

A	B	C
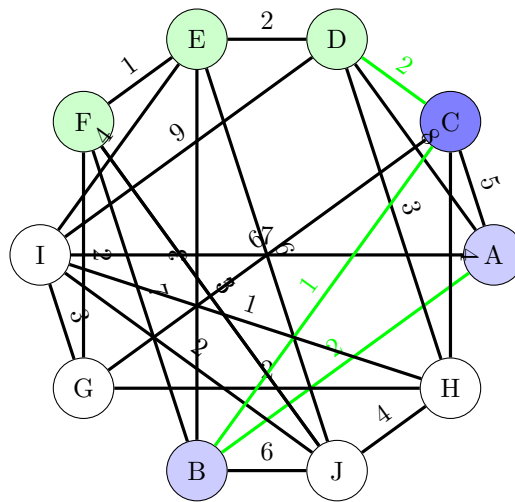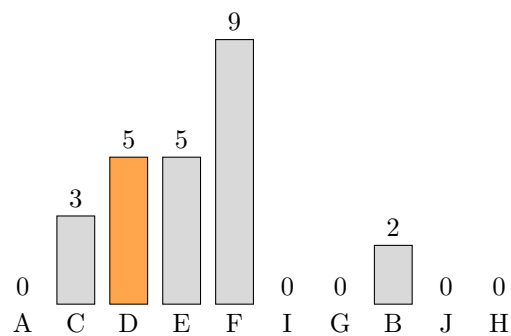
Node Costs

A* Algorithm

Checking neighbor G

Graph

Open Set

D	E	F

Closed Set

A	B	C
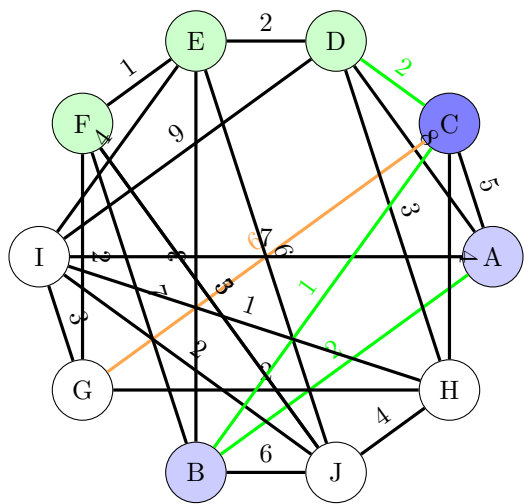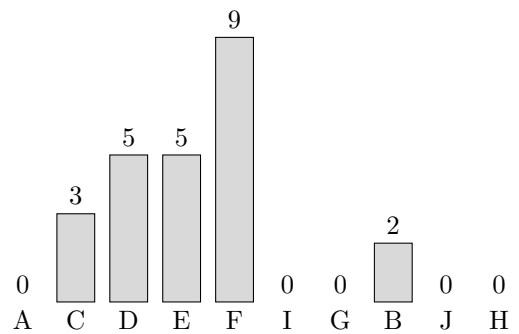
Node Costs

A* Algorithm

Adding neighbor G to open set

Graph
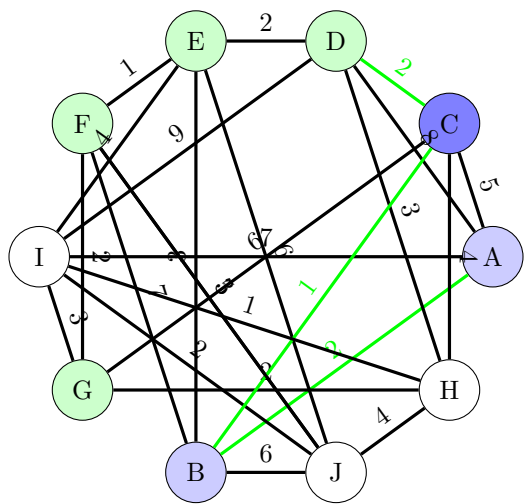
Open Set
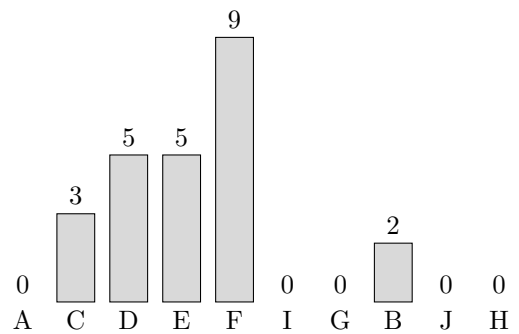
D	E	F	G

Closed Set

A	B	C

Node Costs

A* Algorithm

Log

Graph

Open Set

D	E	F	G

Closed Set

A	B	C
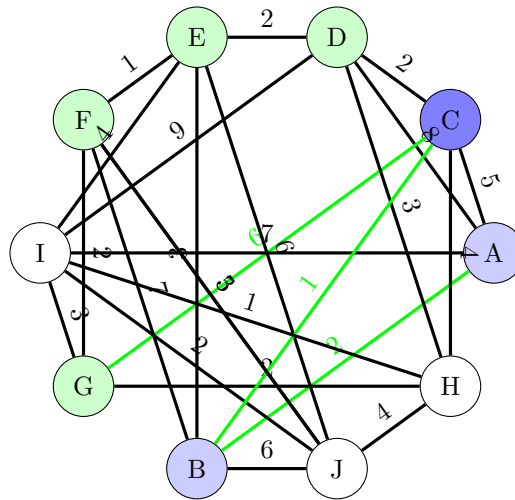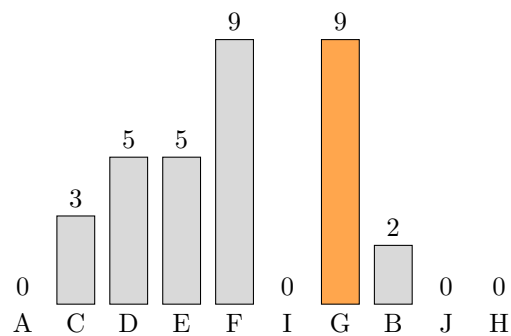
Node Costs

A* Algorithm

Checking neighbor H

Graph

Open Set

D	E	F	G

Closed Set

A	B	C
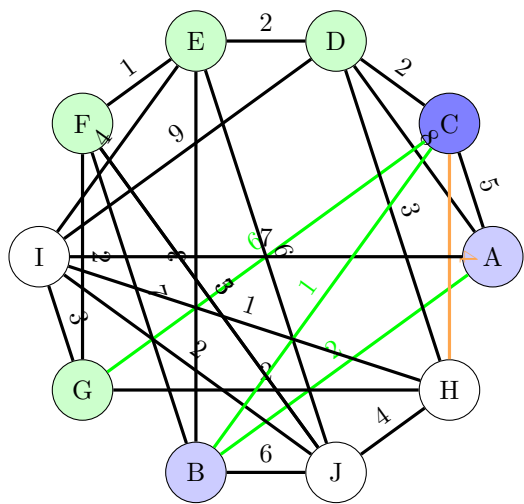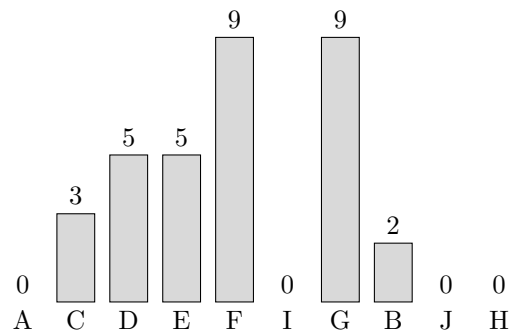
Node Costs

A* Algorithm

Adding neighbor H to open set

Graph

Open Set

D	E	F	G	H

Closed Set

A	B	C
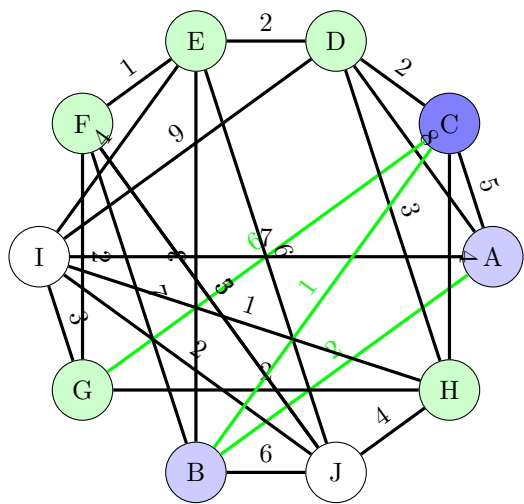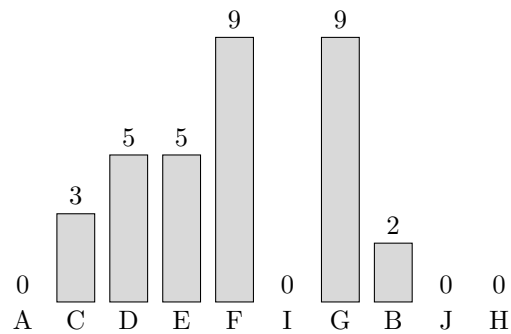
Node Costs

A* Algorithm

Updating cost for neighbor H (cost: 7)

Graph
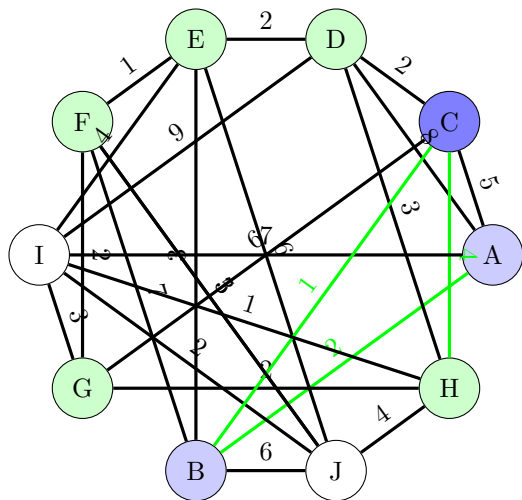
Open Set

D	E	F	G	H
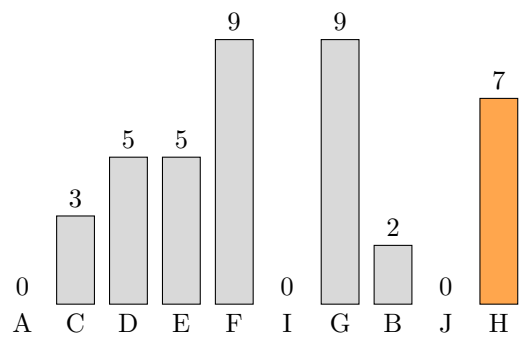
Closed Set

A	B	C

Node Costs

A* Algorithm

Grabbing first node from open set

Graph

Open Set

D	E	F	G	H

Closed Set

A	B	C

Node Costs

33
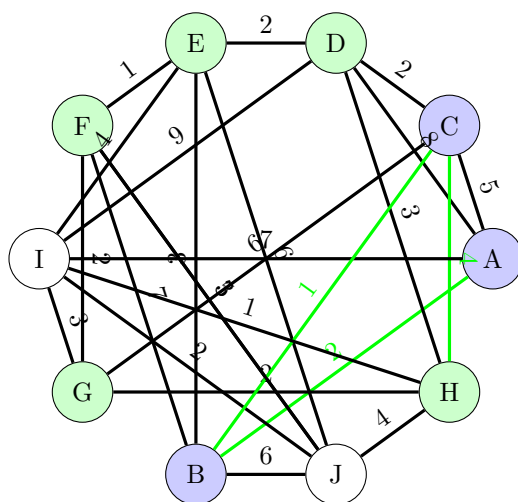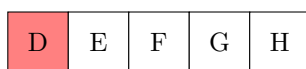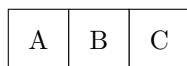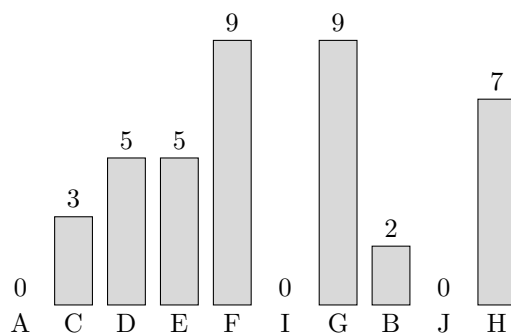
A* Algorithm

Visiting node E and adding it to closed set
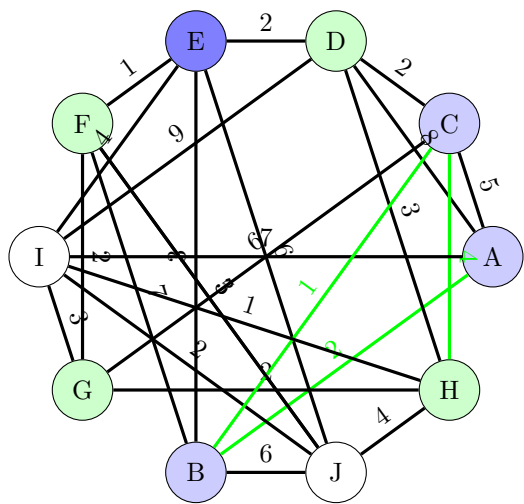
Graph

Open Set

E	F	G	H

Closed Set
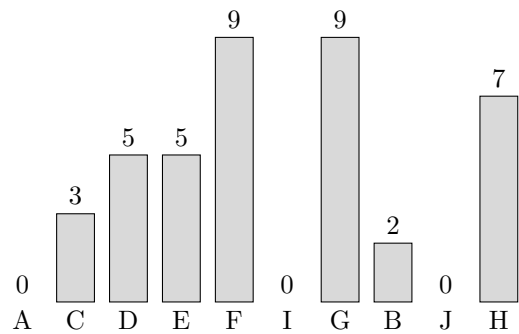
A	B	C	E

Node Costs

A* Algorithm

Checking neighbor F
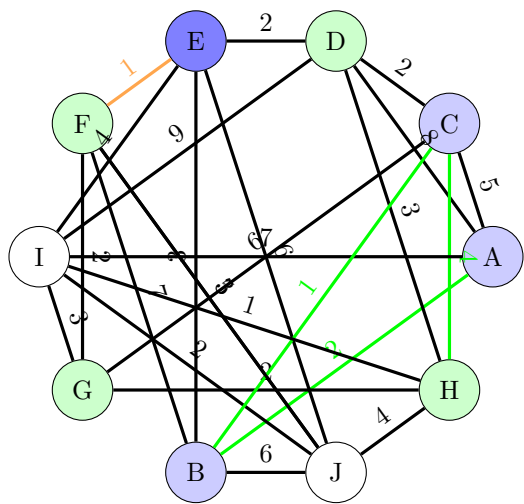
Graph

Open Set

E	F	G	H

Closed Set
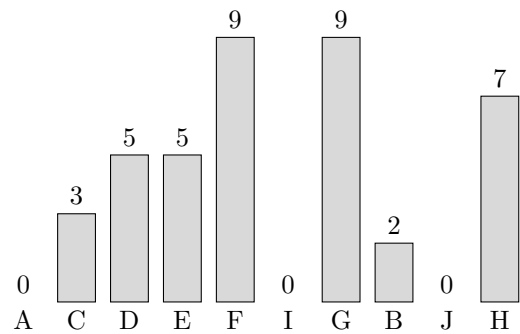
A	B	C	E

Node Costs

A* Algorithm

Updating cost for neighbor F (cost: 6)

Graph
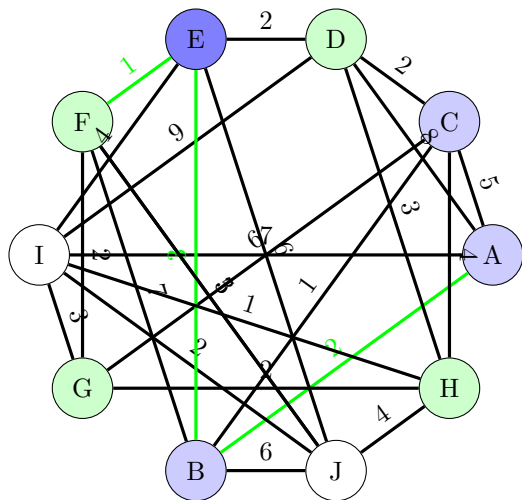
Open Set

E	F	G	H

Closed Set
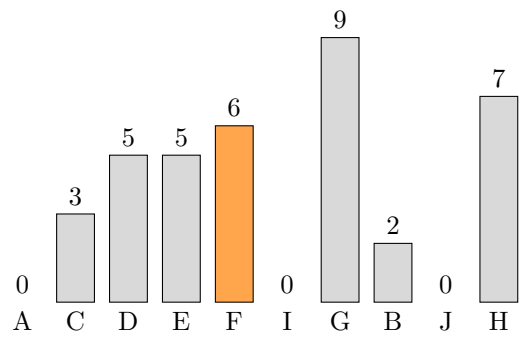
A	B	C	E

Node Costs

A* Algorithm

Checking neighbor I
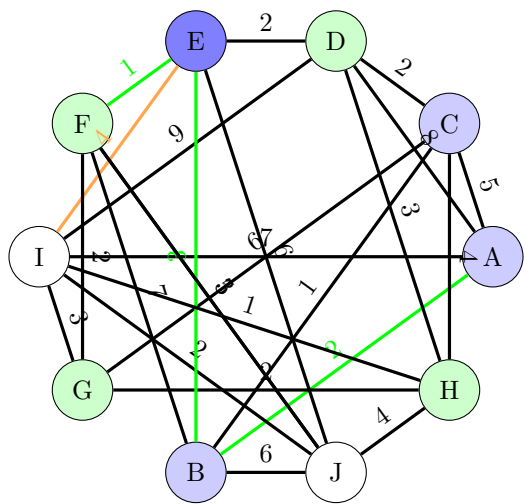
Graph

Open Set

E	F	G	H

Closed Set
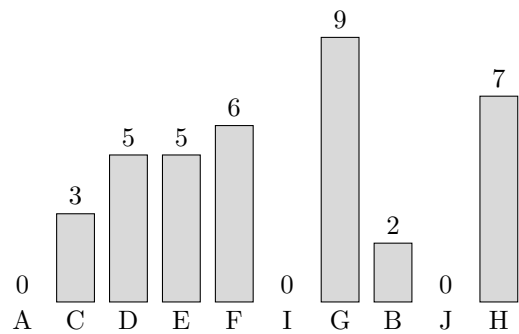
A	B	C	E

Node Costs

A* Algorithm

Adding neighbor I to open set

Graph
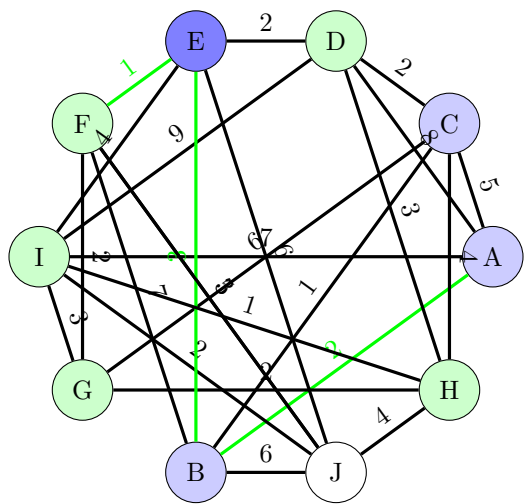
Open Set

E	F	G	H	I

Closed Set

A	B	C	E

Node Costs

A* Algorithm

Log
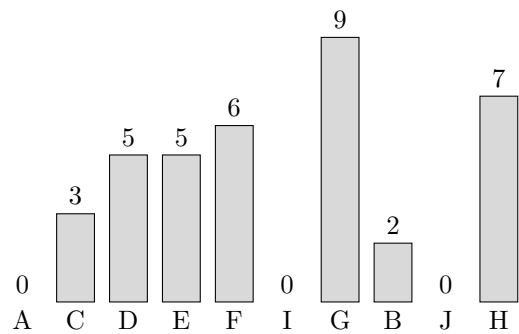
Updating cost for neighbor I (cost: 9)

Graph
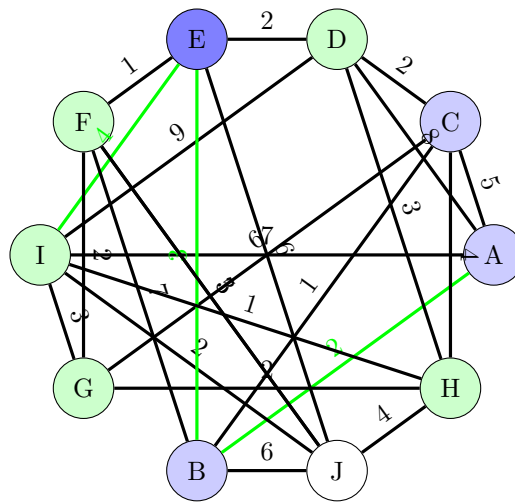
Open Set

E	F	G	H	I

Closed Set
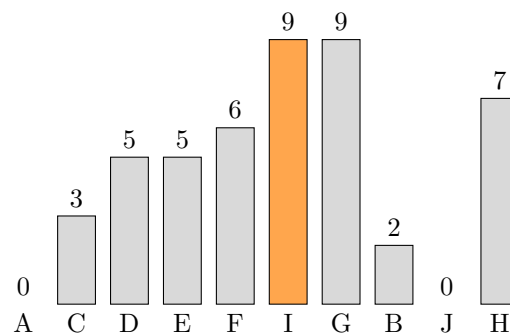
A	B	C	E

Node Costs

A* Algorithm

Checking neighbor J
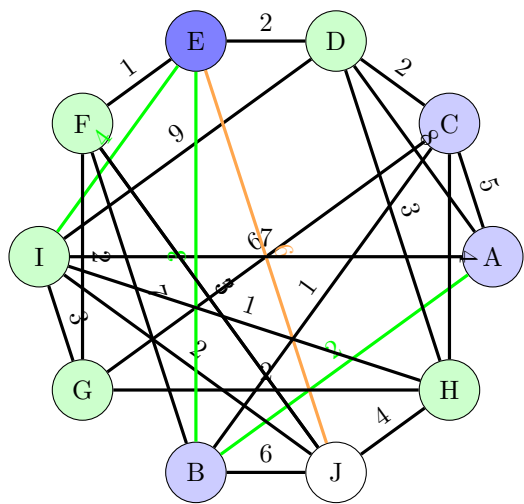
Graph

Open Set

E	F	G	H	I

Closed Set
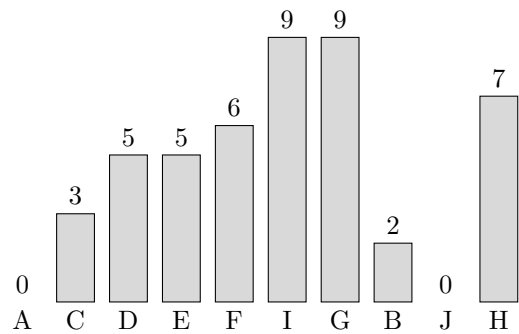
A	B	C	E

Node Costs

A* Algorithm

Adding neighbor J to open set

Graph
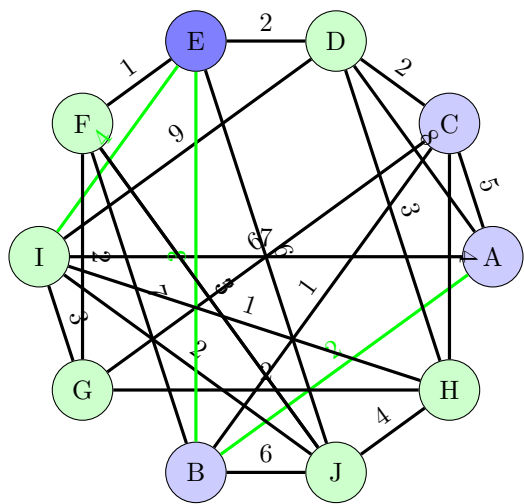
Open Set

E	F	G	H	I	J

Closed Set
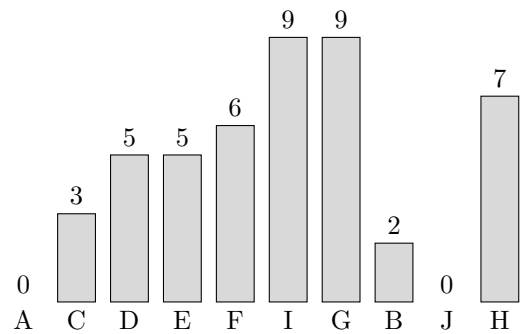
A	B	C	E

Node Costs

A* Algorithm

Updating cost for neighbor J (cost: 11)

Graph
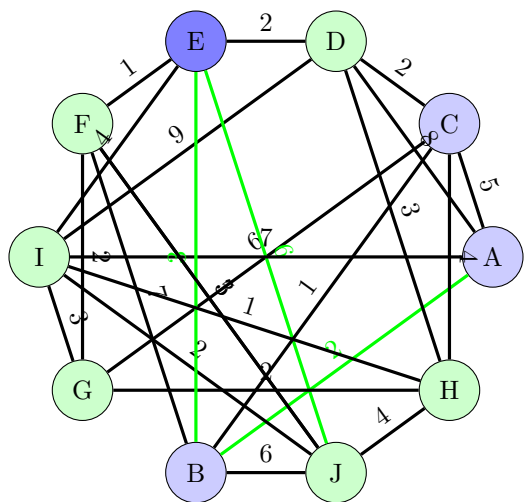
Open Set

E	F	G	H	I	J
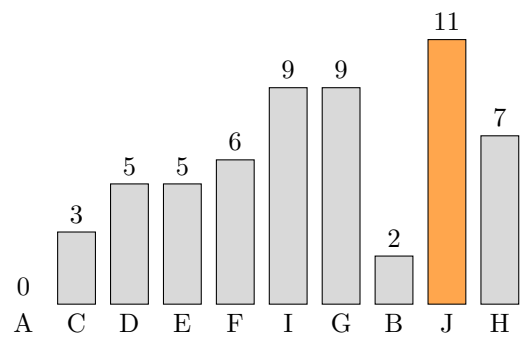
Closed Set

A	B	C	E

Node Costs

A* Algorithm

Grabbing first node from open set
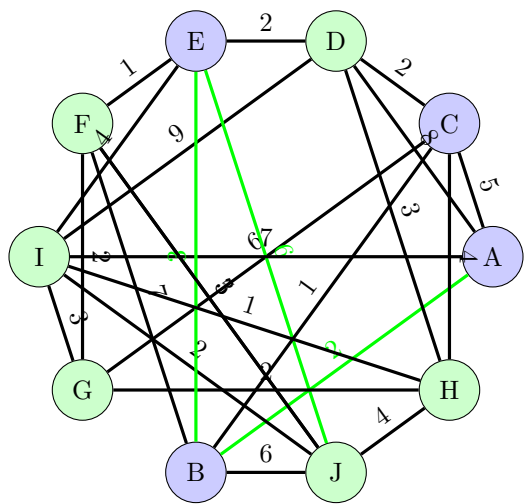
Graph

Open Set

E	F	G	H	I	J

Closed Set
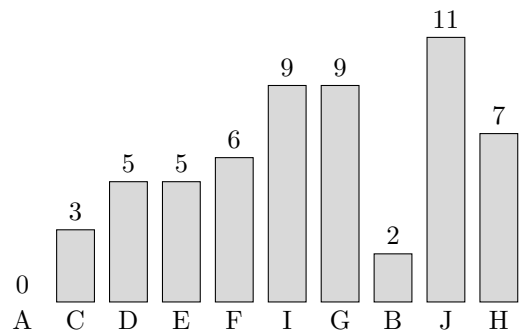
A	B	C	E

Node Costs

A* Algorithm

Visiting node D and adding it to closed set
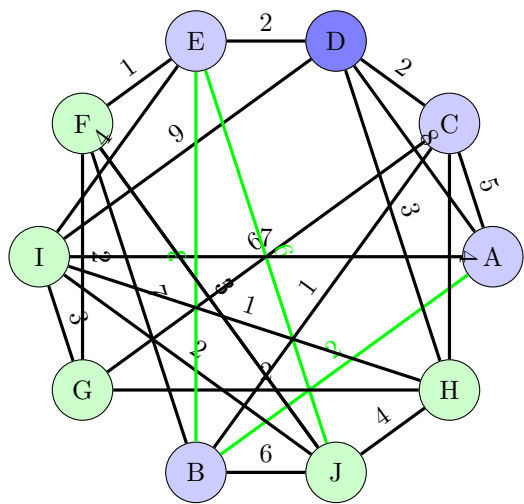
Graph

Open Set

F	G	H	I	J

Closed Set
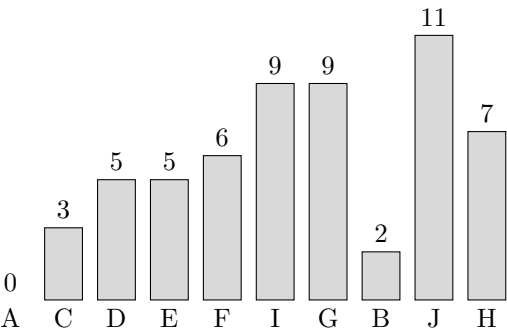
A	B	C	E	D

Node Costs

A* Algorithm

Checking neighbor E
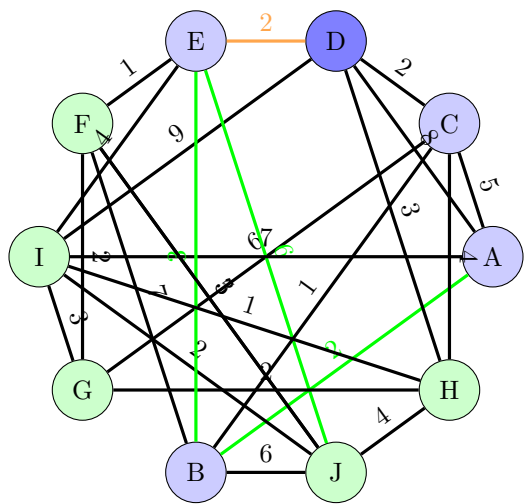
Graph

Open Set

F	G	H	I	J

Closed Set
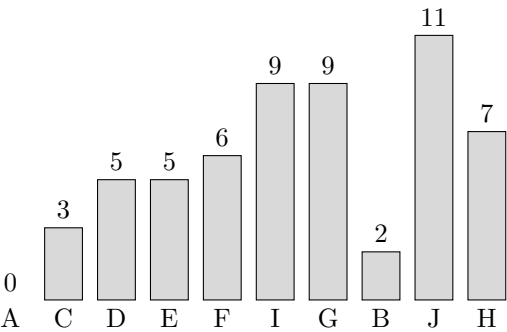
A	B	C	E	D

Node Costs

A* Algorithm

Checking neighbor H

Graph

Open Set

F	G	H	I	J

Closed Set

A	B	C	E	D

Node Costs

A* Algorithm

Checking neighbor I

Graph

Open Set

F	G	H	I	J
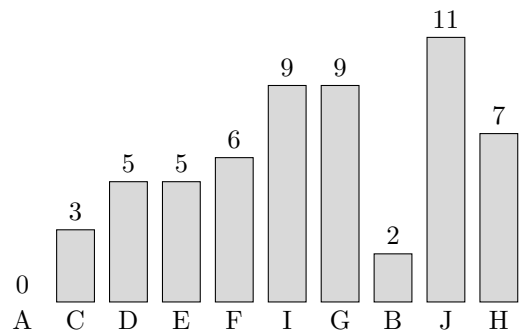
Closed Set

A	B	C	E	D

Node Costs

A* Algorithm

Grabbing first node from open set

Graph

Open Set

F	G	H	I	J

Closed Set

A	B	C	E	D

Node Costs

A* Algorithm

Visiting node F and adding it to closed set
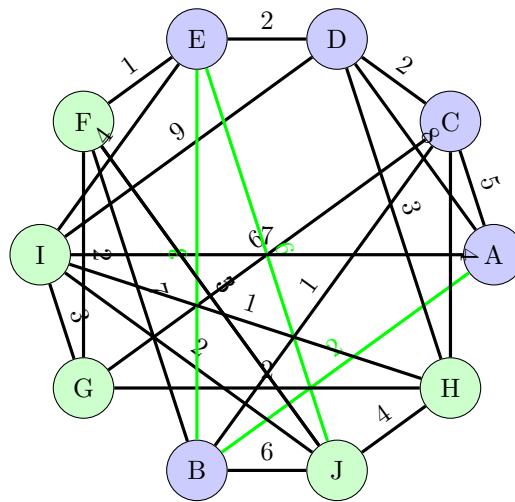
Graph

Open Set

G	H	I	J

Closed Set

A	B	C	E	D	F

Node Costs

A* Algorithm

Checking neighbor G

Graph

Open Set

G	H	I	J

Closed Set

A	B	C	E	D	F

Node Costs

A* Algorithm

Updating cost for neighbor G (cost: 8)

Graph

Open Set

G	H	I	J

Closed Set

A	B	C	E	D	F

Node Costs

A* Algorithm

Checking neighbor J

Graph

Open Set

G	H	I	J

Closed Set

A	B	C	E	D	F

Node Costs

A* Algorithm

Grabbing first node from open set

Graph

Open Set

G	H	I	J

Closed Set

A	B	C	E	D	F

Node Costs

A* Algorithm

Log

Graph

Open Set

H	I	J

Closed Set

A	B	C	E	D	F	H

Node Costs

A* Algorithm

Checking neighbor I

Graph

Open Set

H	I	J

Closed Set

A	B	C	E	D	F	H

Node Costs

A* Algorithm

Updating cost for neighbor I (cost: 8)

Graph
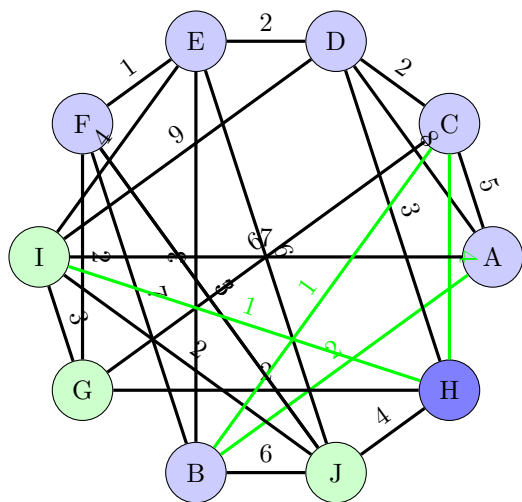
Open Set

H	I	J
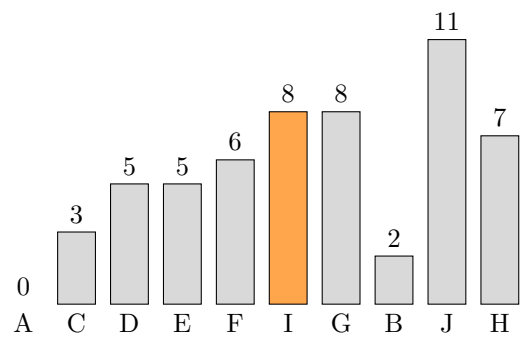
Closed Set

A	B	C	E	D	F	H

Node Costs

A* Algorithm

Checking neighbor J

Graph

Open Set

H	I	J

Closed Set

A	B	C	E	D	F	H

Node Costs

A* Algorithm

Grabbing first node from open set

Graph

Open Set

H	I	J
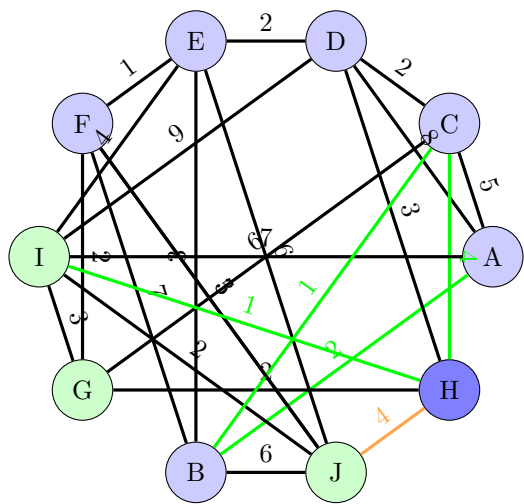
Closed Set
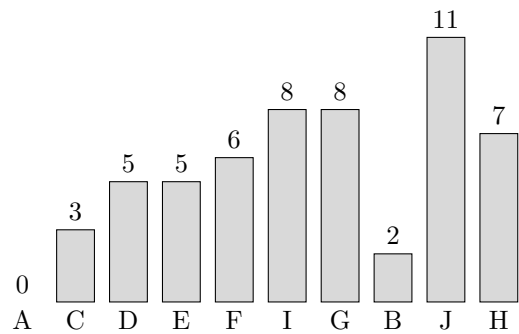
A	B	C	E	D	F	H

Node Costs

A* Algorithm

Visiting node G and adding it to closed set
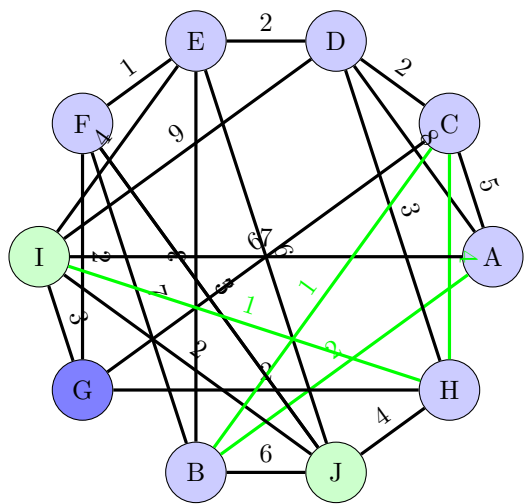
Graph

Open Set

I	J

Closed Set
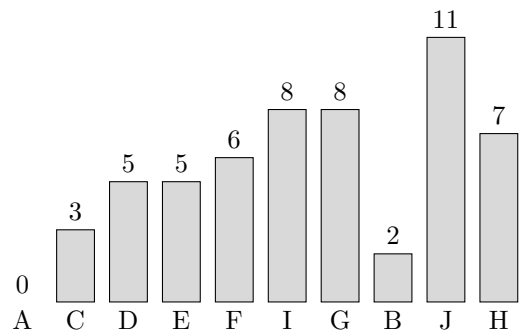
A	B	C	E	D	F	H	G

Node Costs

A* Algorithm

Checking neighbor H

Graph

Open Set

I	J

Closed Set
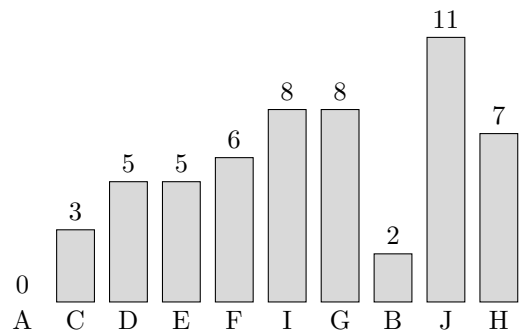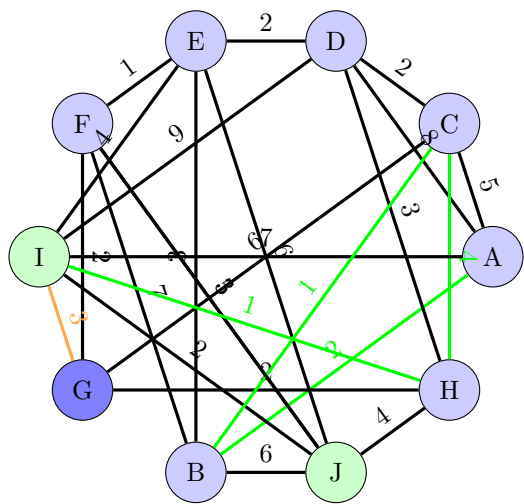
A	B	C	E	D	F	H	G

Node Costs

A* Algorithm

Checking neighbor I

Graph

Open Set

I	J

Closed Set
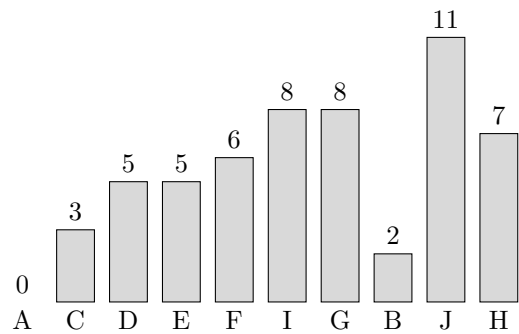
A	B	C	E	D	F	H	G

Node Costs

A* Algorithm

Grabbing first node from open set

Graph

Open Set

I	J
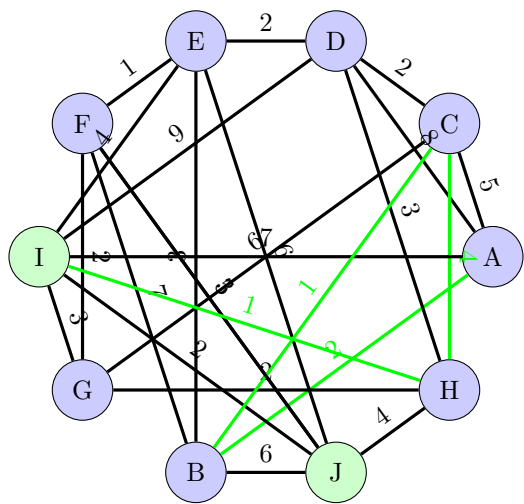
Closed Set

A	B	C	E	D	F	H	G

Node Costs

A* Algorithm

Visiting node I and adding it to closed set

Graph

Open Set

J

Closed Set
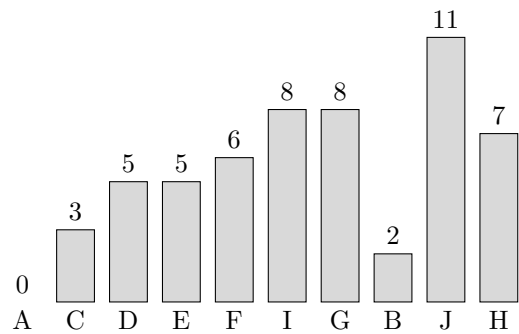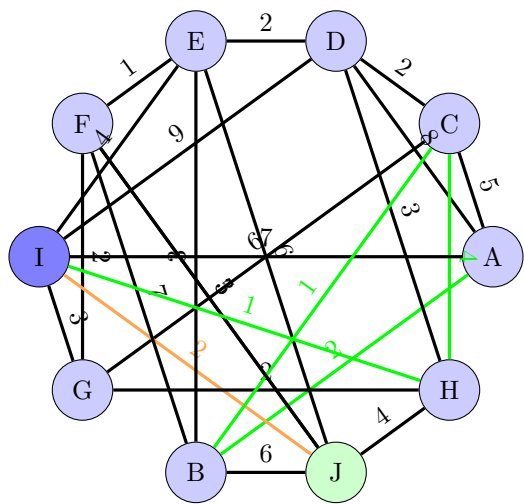
A	B	C	E	D	F	H	G	I

Node Costs

63

A* Algorithm

Checking neighbor J

Graph

Open Set

J

Closed Set
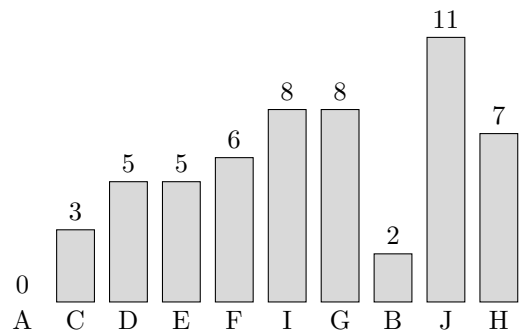
A	B	C	E	D	F	H	G	I

Node Costs

A* Algorithm

Log

Graph

Open Set

J

Closed Set

A	B	C	E	D	F	H	G	I

Node Costs

A* Algorithm

Log
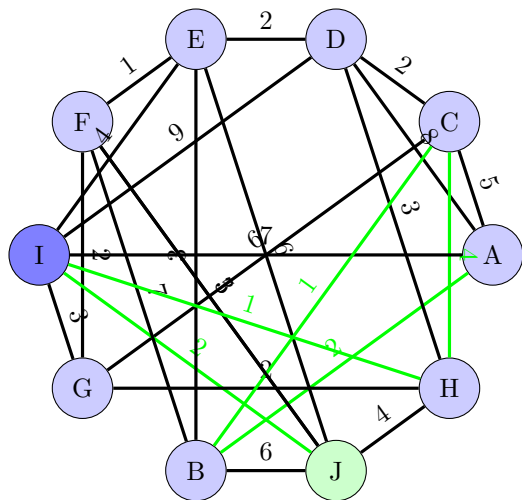
Checking neighbor A

Graph

Open Set

J

Closed Set

A	B	C	E	D	F	H	G	I

Node Costs

66

A* Algorithm

Graph

Open Set

J

Closed Set
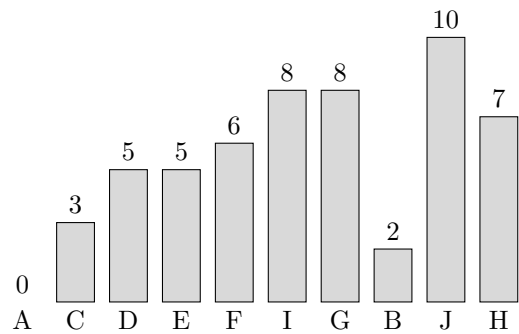
A	B	C	E	D	F	H	G	I

Node Costs

A* Algorithm

Visiting node J and adding it to closed set
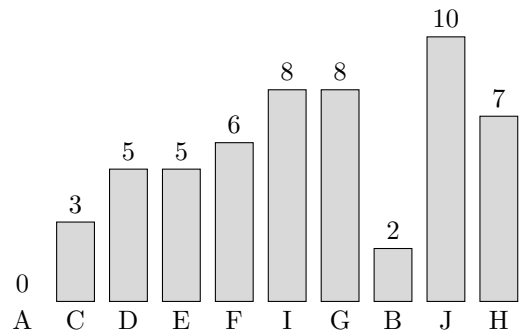
Graph

Open Set

Closed Set

A	B	C	E	D	F	H	G	I	J

Node Costs

A* Algorithm

Log

Graph

Open Set

Closed Set

A	B	C	E	D	F	H	G	I	J

Node Costs

A* Algorithm

Log
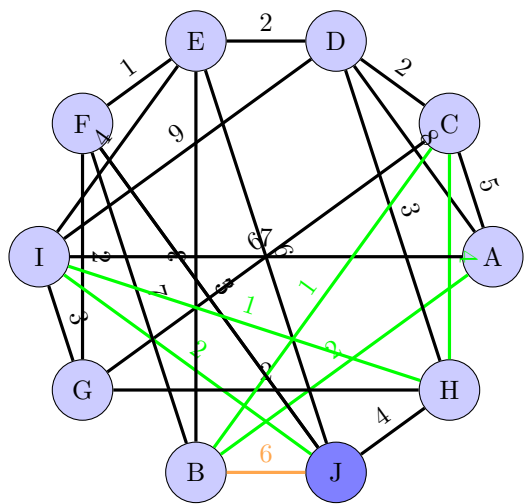
Checking neighbor F

Graph

Open Set

Closed Set

A	B	C	E	D	F	H	G	I	J

Node Costs

70

A* Algorithm

Complex A* simulation complete

Graph

Open Set

Closed Set

A	B	C	E	D	F	H	G	I	J

Node Costs