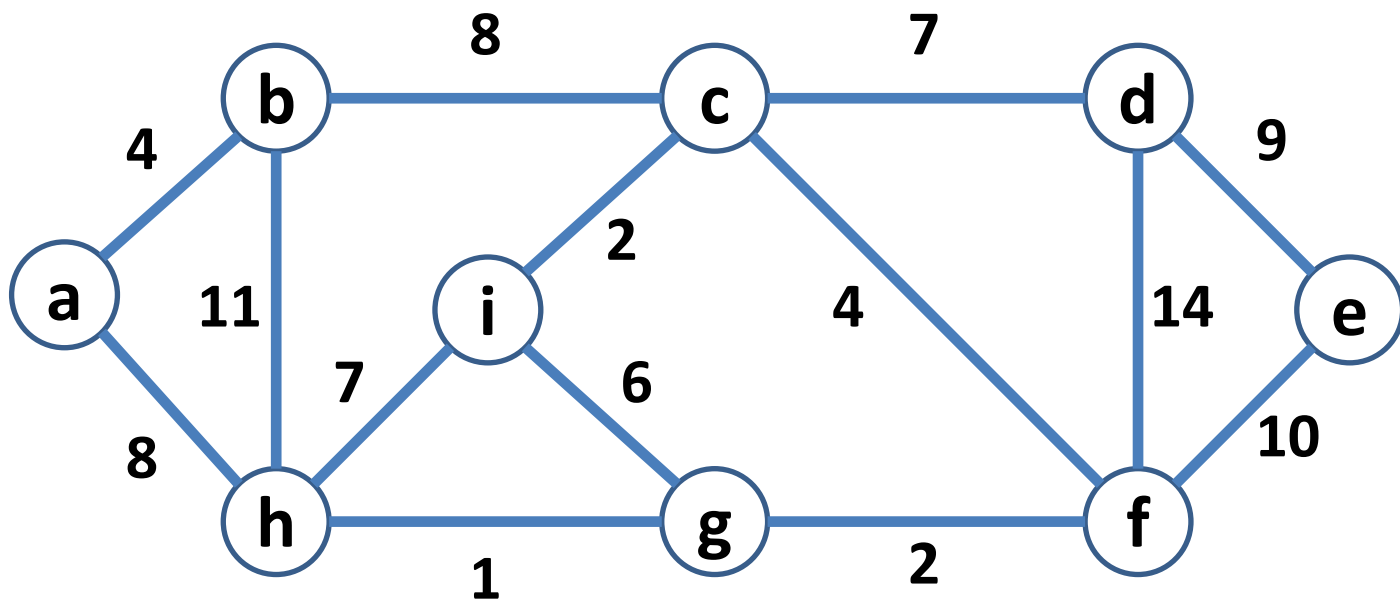


# Exemplo de execução do algoritmo de Prim (*Minimum Spanning Tree*)

Algoritmos e Estruturas de Dados II

Prof. Rafael Fernandes Lopes

Inicialização (linhas 1-3)



key



a b c d e f g h i

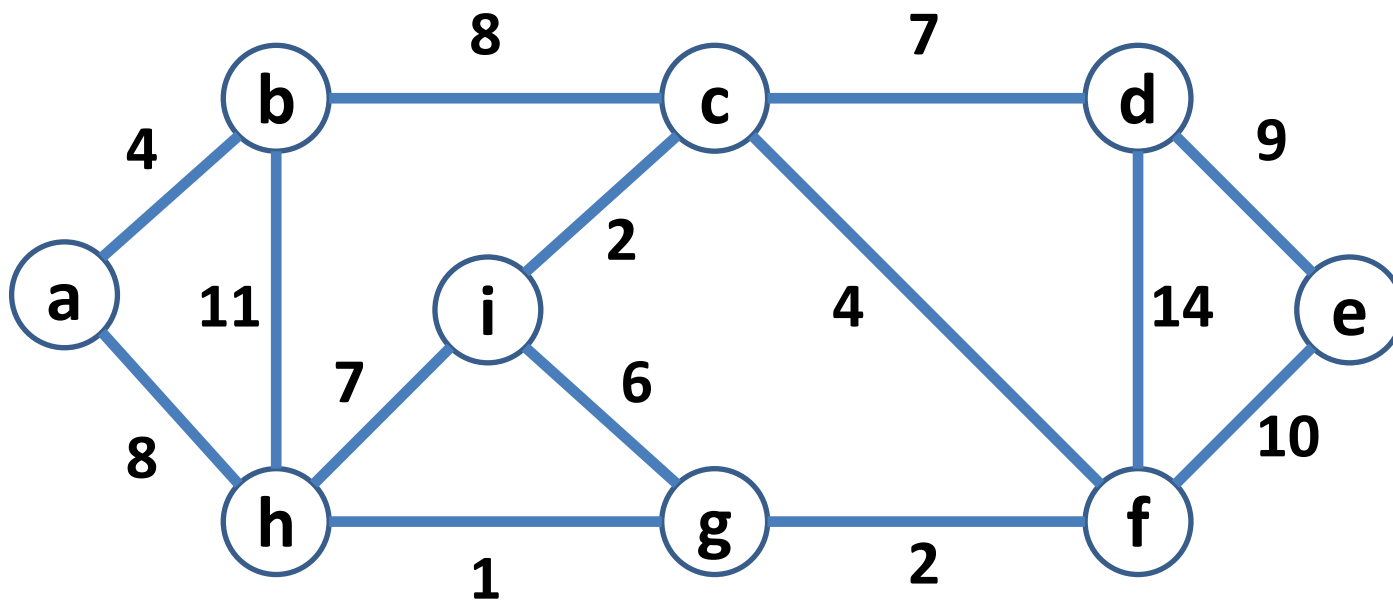


a b c d e f g h i

Q



Inicialização (linhas 4-5)



key

0								
---	--	--	--	--	--	--	--	--

a b c d e f g h i

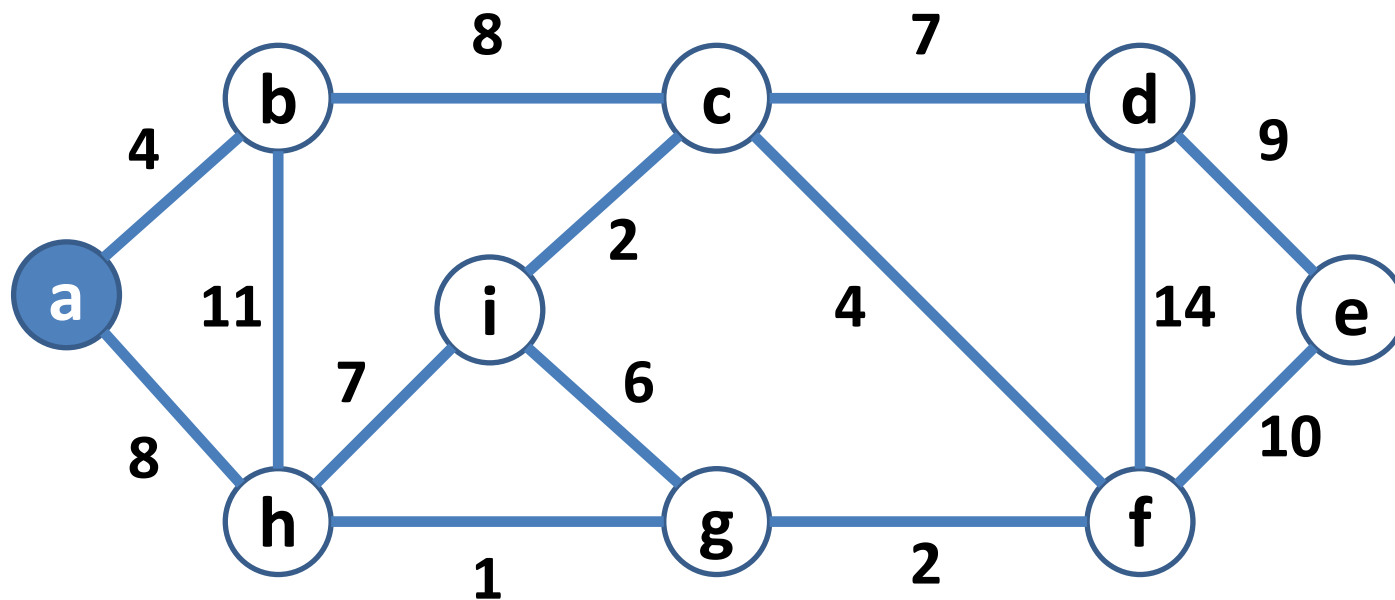
--	--	--	--	--	--	--	--	--

a b c d e f g h i

Q

a	b	c	d	e	f	g	h	i
---	---	---	---	---	---	---	---	---

Loop principal (linha 7)



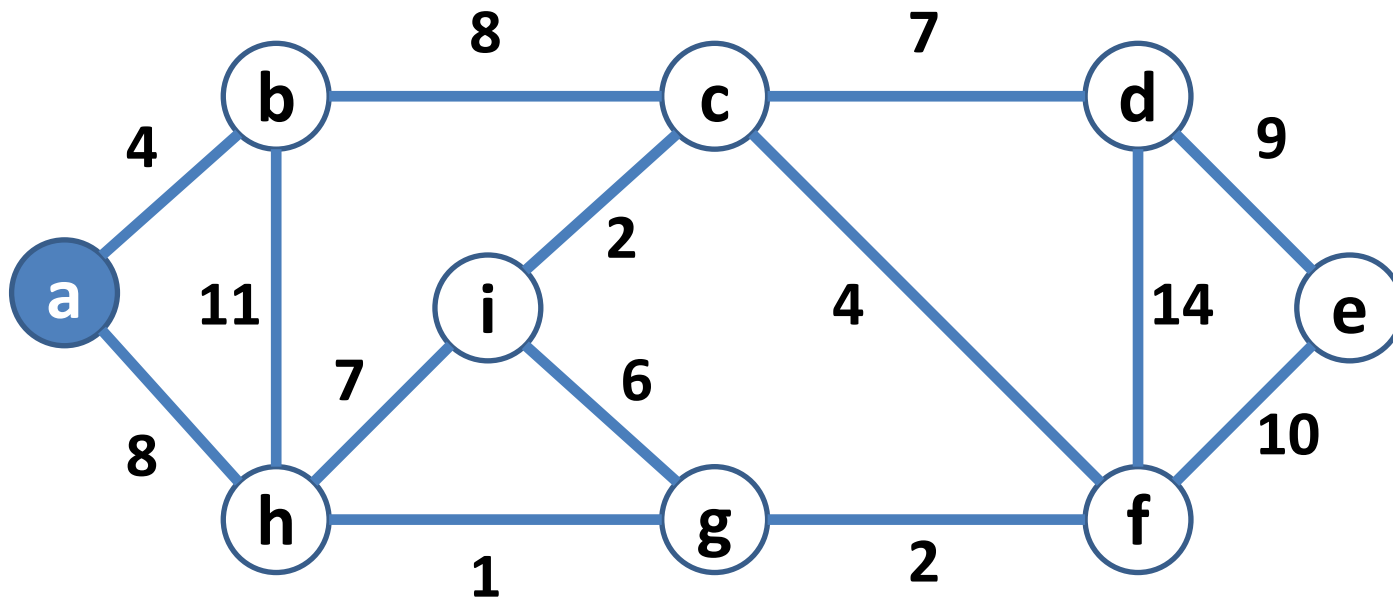
key	0								
	a	b	c	d	e	f	g	h	i

	a	b	c	d	e	f	g	h	i

Q		b	c	d	e	f	g	h	i
---	--	---	---	---	---	---	---	---	---

Loop principal (linhas 8-11)

[adjacente b]



key

0	4							
---	---	--	--	--	--	--	--	--

a b c d e f g h i

	a							
--	---	--	--	--	--	--	--	--

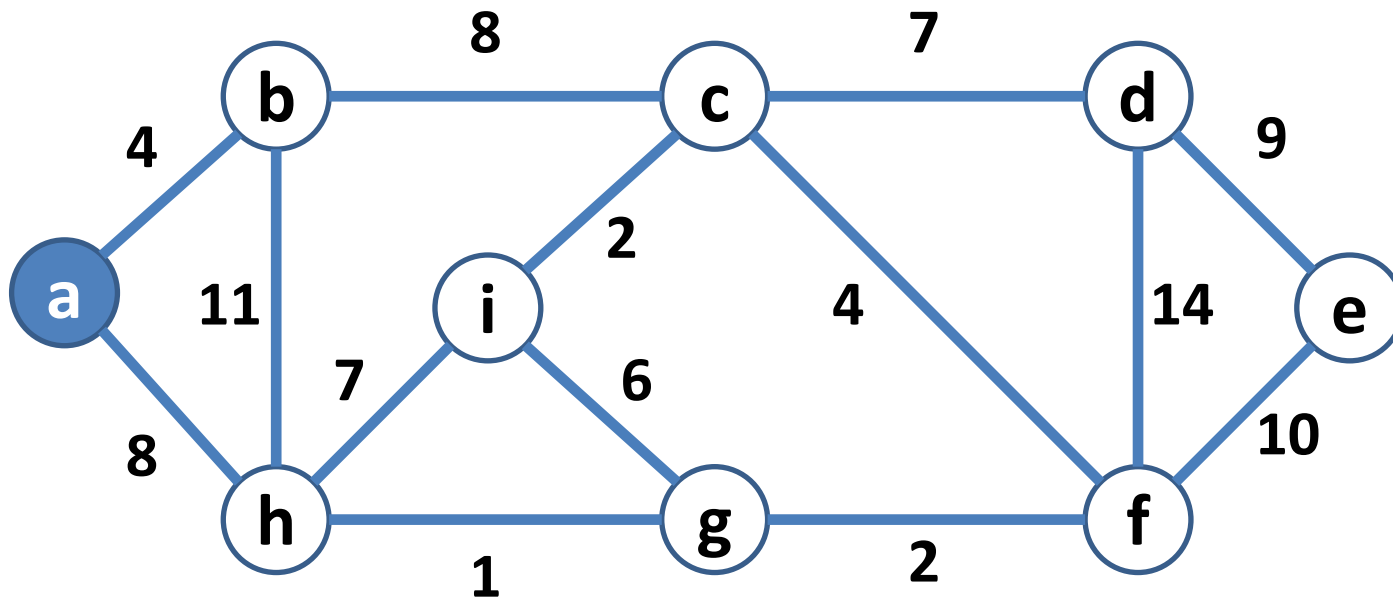
a b c d e f g h i

Q

	b	c	d	e	f	g	h	i
--	---	---	---	---	---	---	---	---

Loop principal (linhas 8-11)

[adjacente h]



key

0	4						8	
---	---	--	--	--	--	--	---	--

a b c d e f g h i

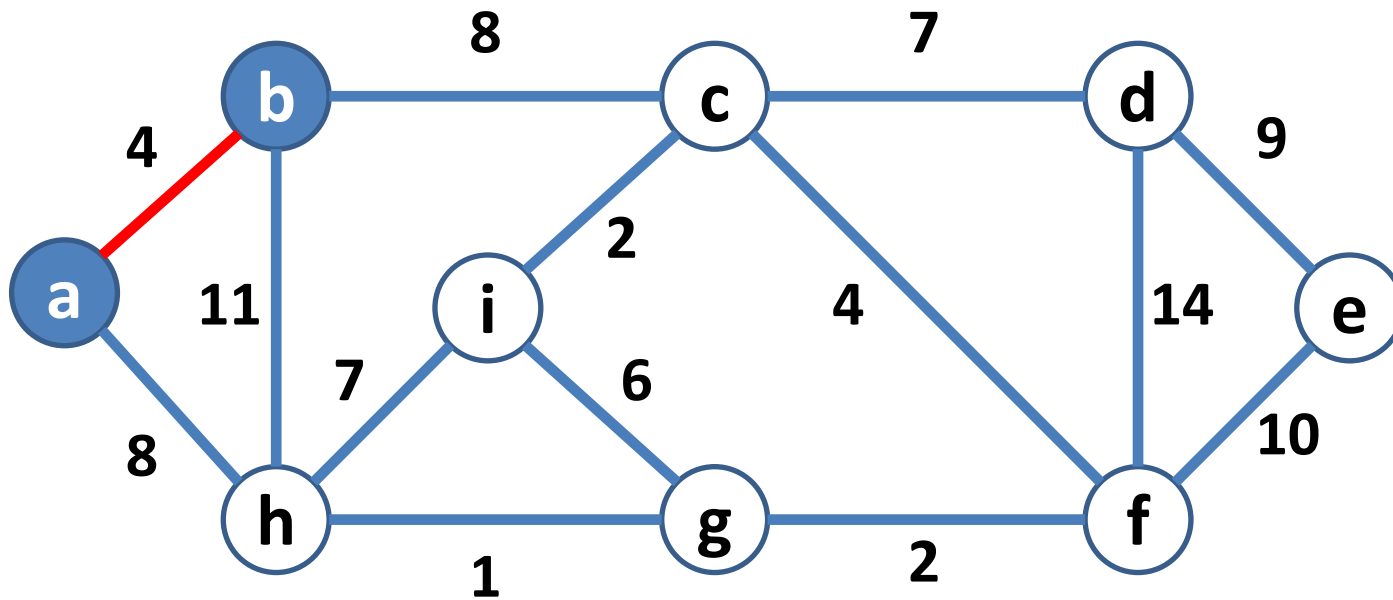
	a						a	
--	---	--	--	--	--	--	---	--

a b c d e f g h i

Q

	b	c	d	e	f	g	h	i
--	---	---	---	---	---	---	---	---

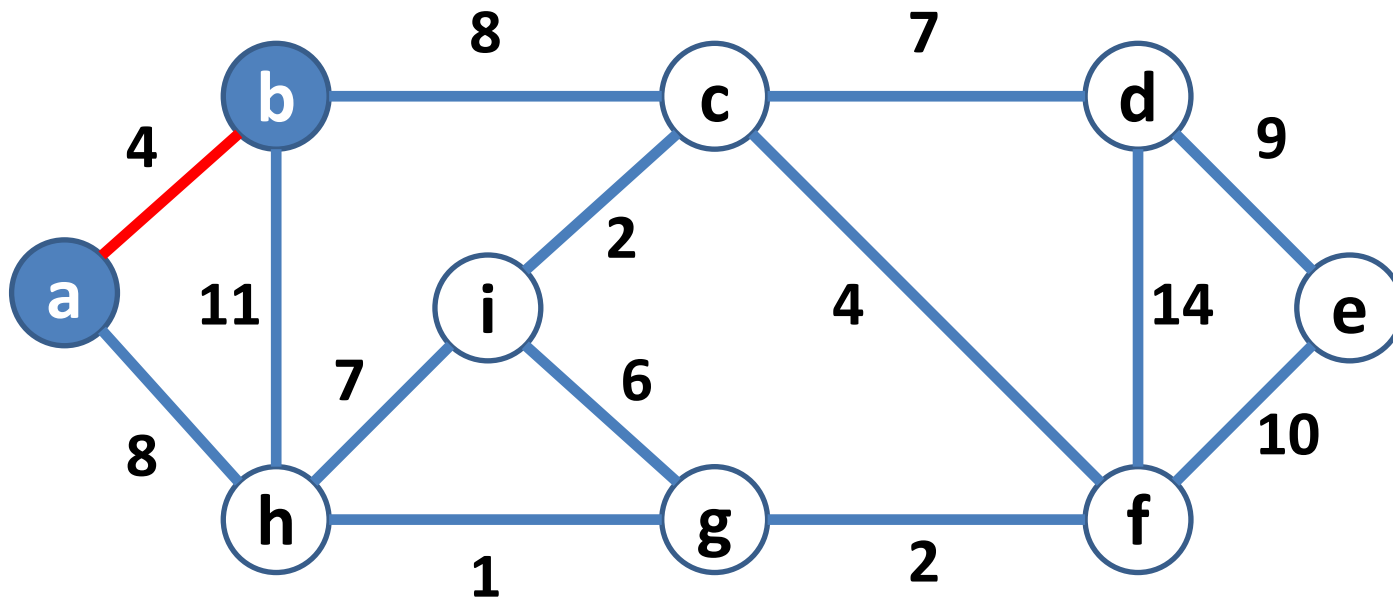
Loop principal (linha 7)



key	0	4						8	
	a	b	c	d	e	f	g	h	i
		a						a	
	a	b	c	d	e	f	g	h	i
Q			c	d	e	f	g	h	i

Loop principal (linhas 8-11)

[adjacente c]



key

0	4	8					8	
---	---	---	--	--	--	--	---	--

a b c d e f g h i

	a	b					a	
--	---	---	--	--	--	--	---	--

a b c d e f g h i

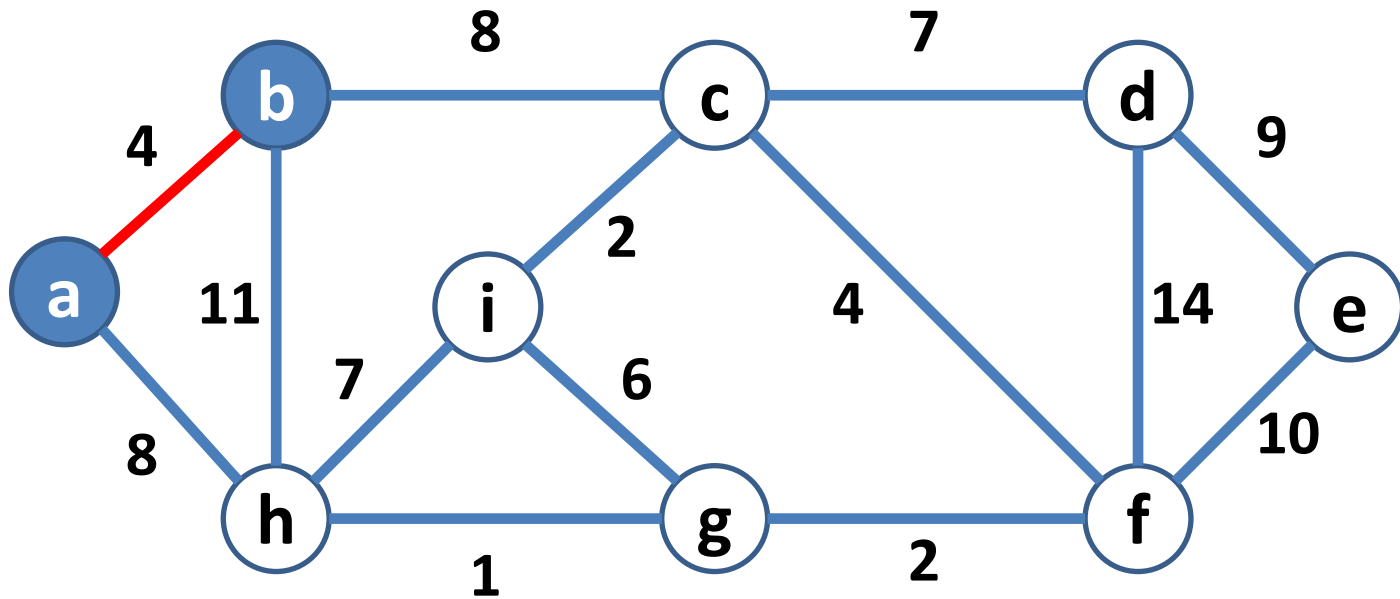
Q

		c	d	e	f	g	h	i
--	--	---	---	---	---	---	---	---



# Loop principal (linhas 8-11)

[adjacente h] – condição **FALSA**



key

0	4	8	□	□	□	□	8	□
---	---	---	---	---	---	---	---	---

a      b      c      d      e      f      g      h      i

□

	a	b					a	
--	---	---	--	--	--	--	---	--

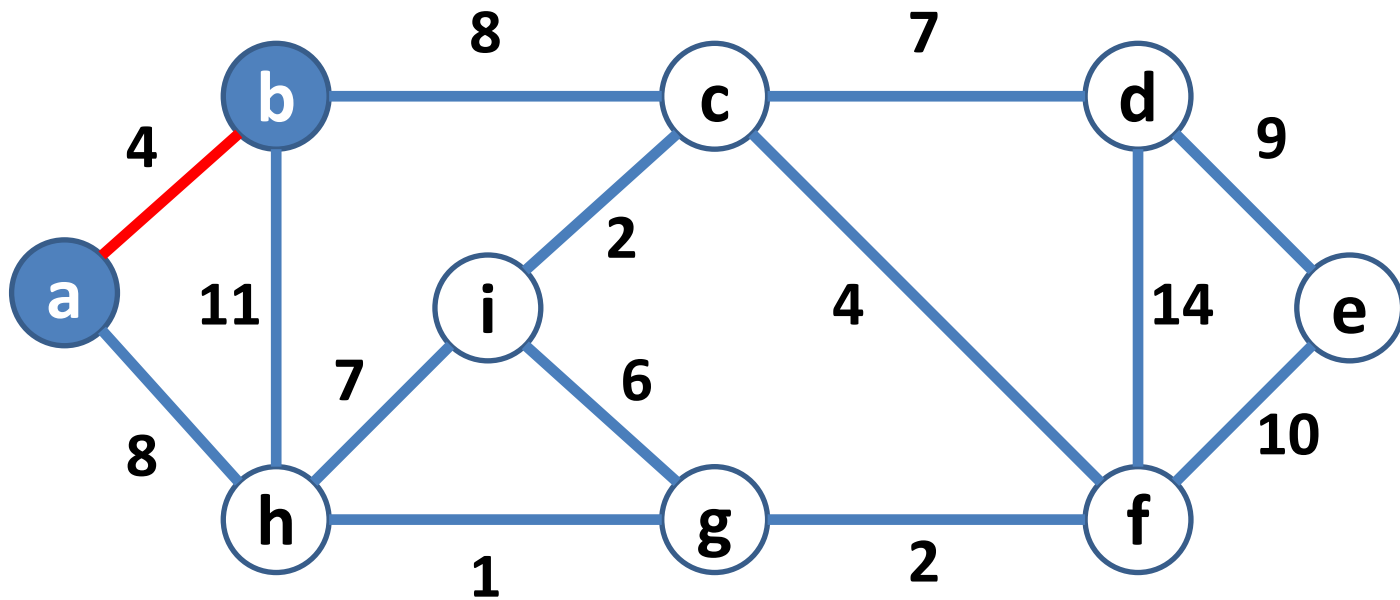
a      b      c      d      e      f      g      h      i

Q

		c	d	e	f	g	h	i
--	--	---	---	---	---	---	---	---

Loop principal (linha 7)

Qual remover da fila: c ou h? vou pegar o c...



key

0	4	8					8	
---	---	---	--	--	--	--	---	--

a b c d e f g h i

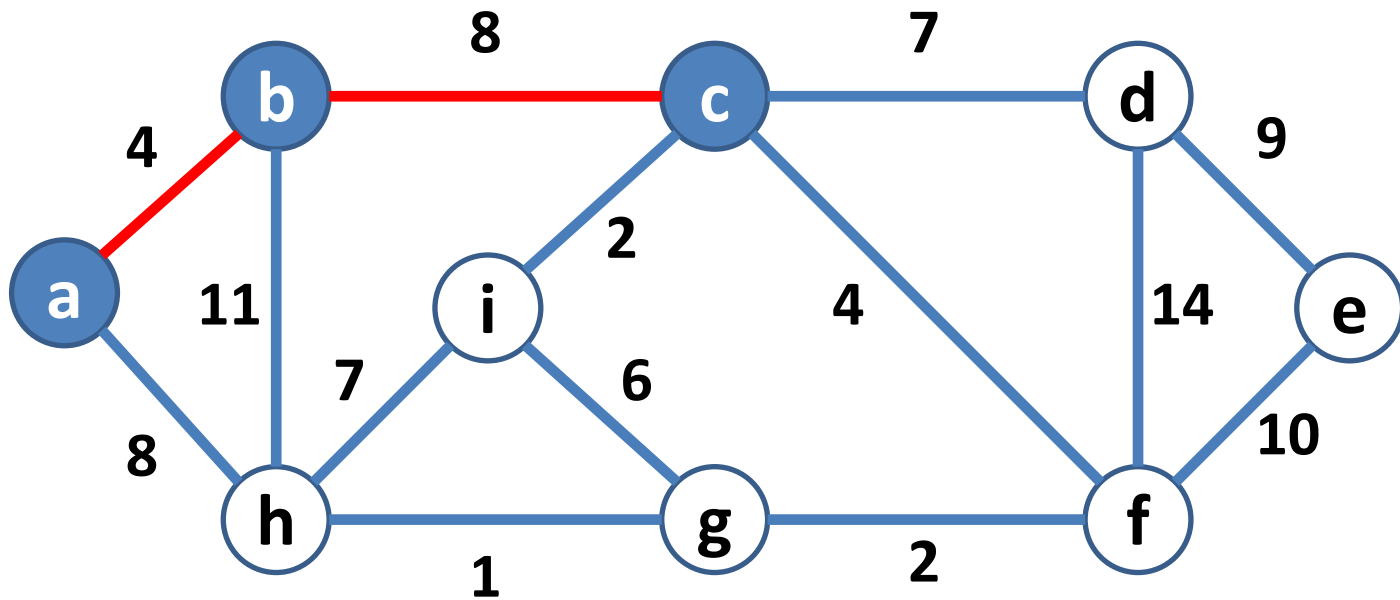
	a	b					a	
--	---	---	--	--	--	--	---	--

a b c d e f g h i

Q

		c	d	e	f	g	h	i
--	--	---	---	---	---	---	---	---

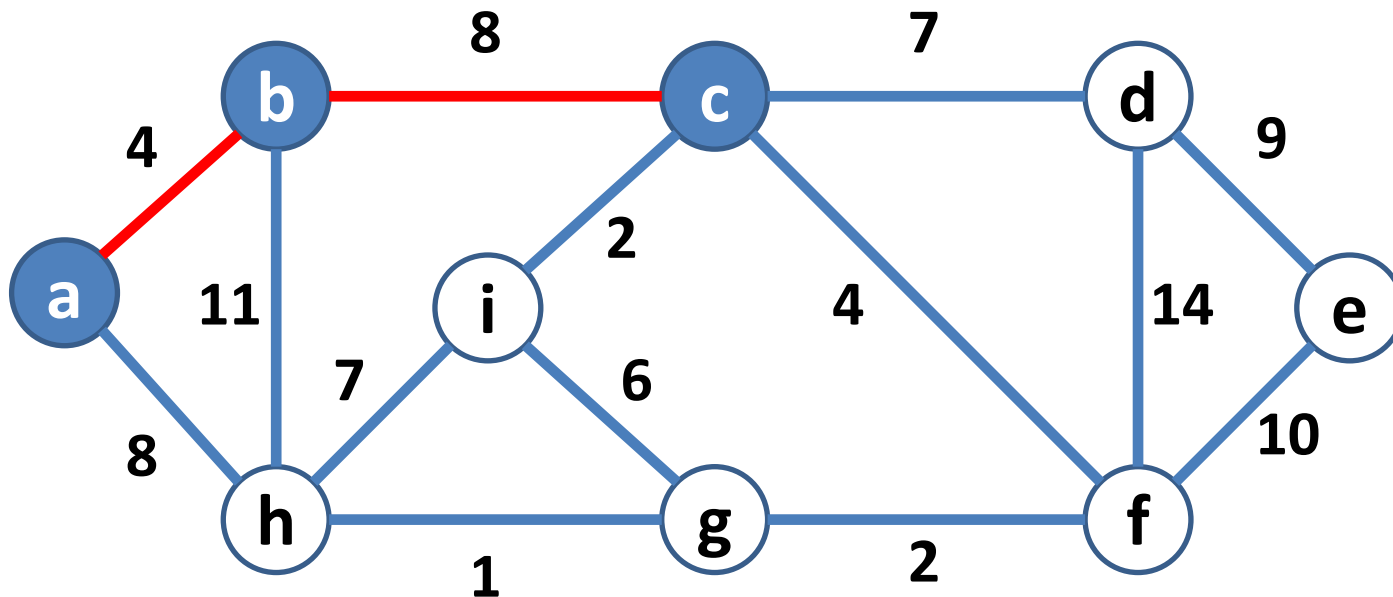
Loop principal (linha 7)



key	0	4	8					8	
	a	b	c	d	e	f	g	h	i
		a	b					a	
	a	b	c	d	e	f	g	h	i
Q				d	e	f	g	h	i

Loop principal (linhas 8-11)

[adjacente d]



key

0	4	8	7	□	□	□	8	□
---	---	---	---	---	---	---	---	---

a b c d e f g h i

□

	a	b	c				a	
--	---	---	---	--	--	--	---	--

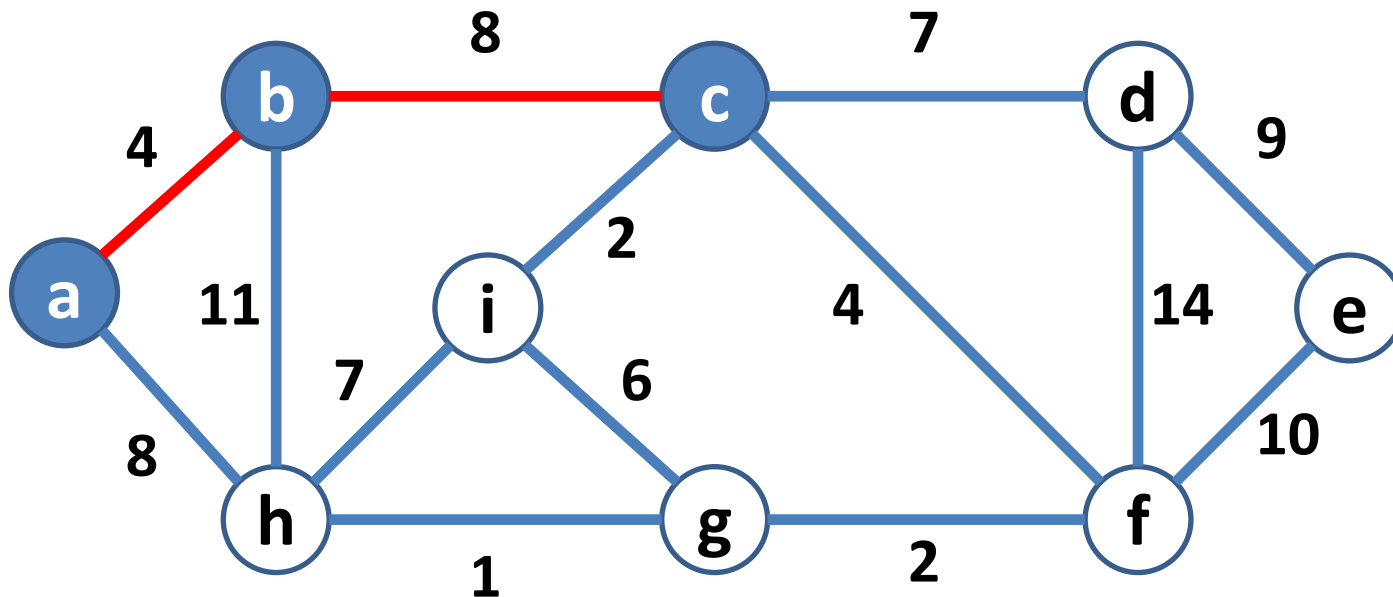
a b c d e f g h i

Q

			d	e	f	g	h	i
--	--	--	---	---	---	---	---	---

Loop principal (linhas 8-11)

[adjacente f]



key

0	4	8	7	□	4	□	8	□
---	---	---	---	---	---	---	---	---

a b c d e f g h i

□

	a	b	c		c		a	
--	---	---	---	--	---	--	---	--

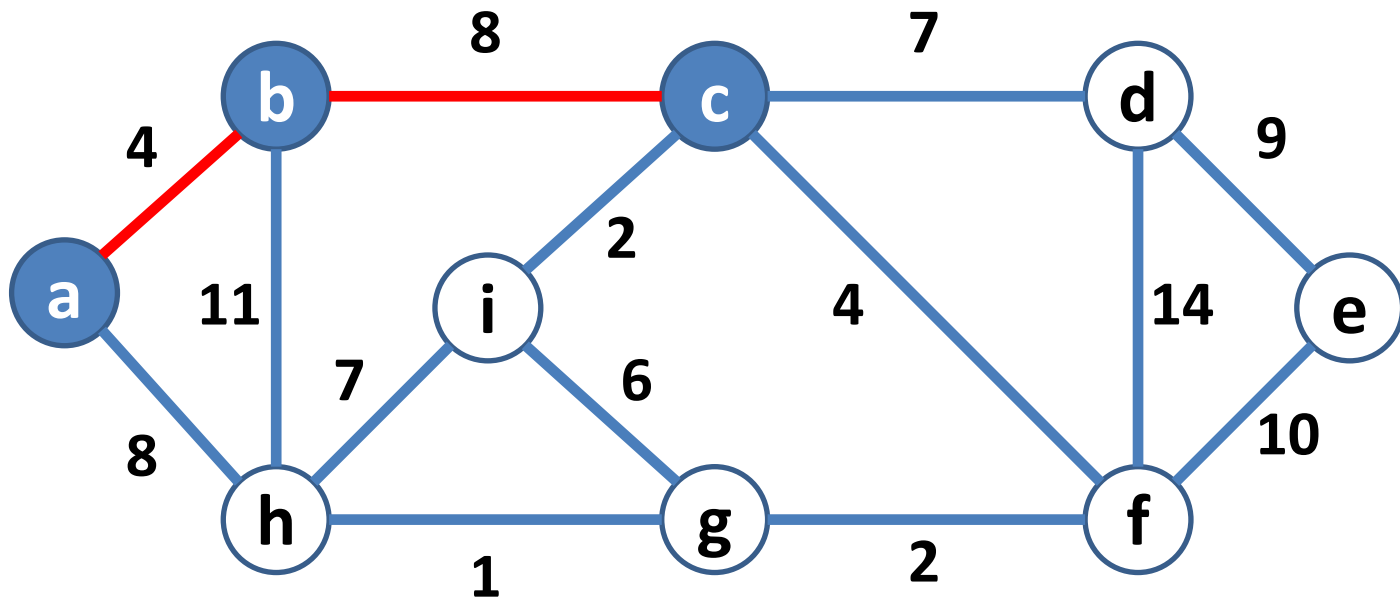
a b c d e f g h i

Q

			d	e	f	g	h	i
--	--	--	---	---	---	---	---	---

Loop principal (linhas 8-11)

[adjacente i]



key

0	4	8	7	□	4	□	8	2
---	---	---	---	---	---	---	---	---

a b c d e f g h i

□

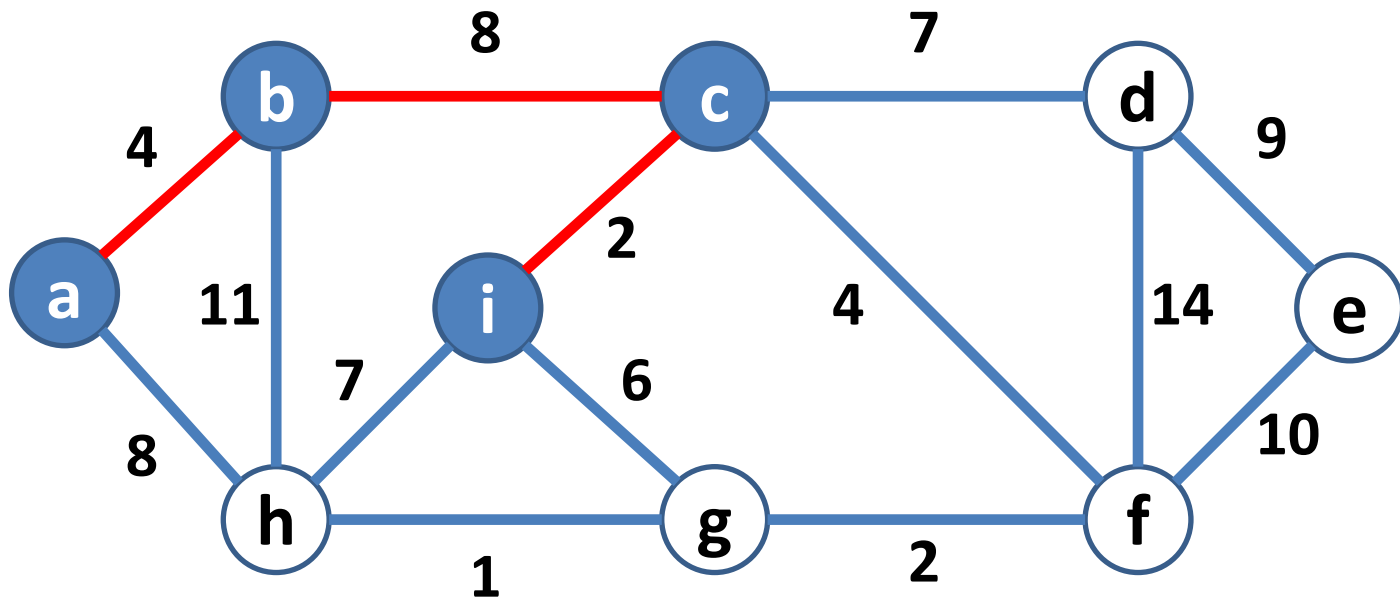
	a	b	c		c		a	c
--	---	---	---	--	---	--	---	---

a b c d e f g h i

Q

			d	e	f	g	h	i
--	--	--	---	---	---	---	---	---

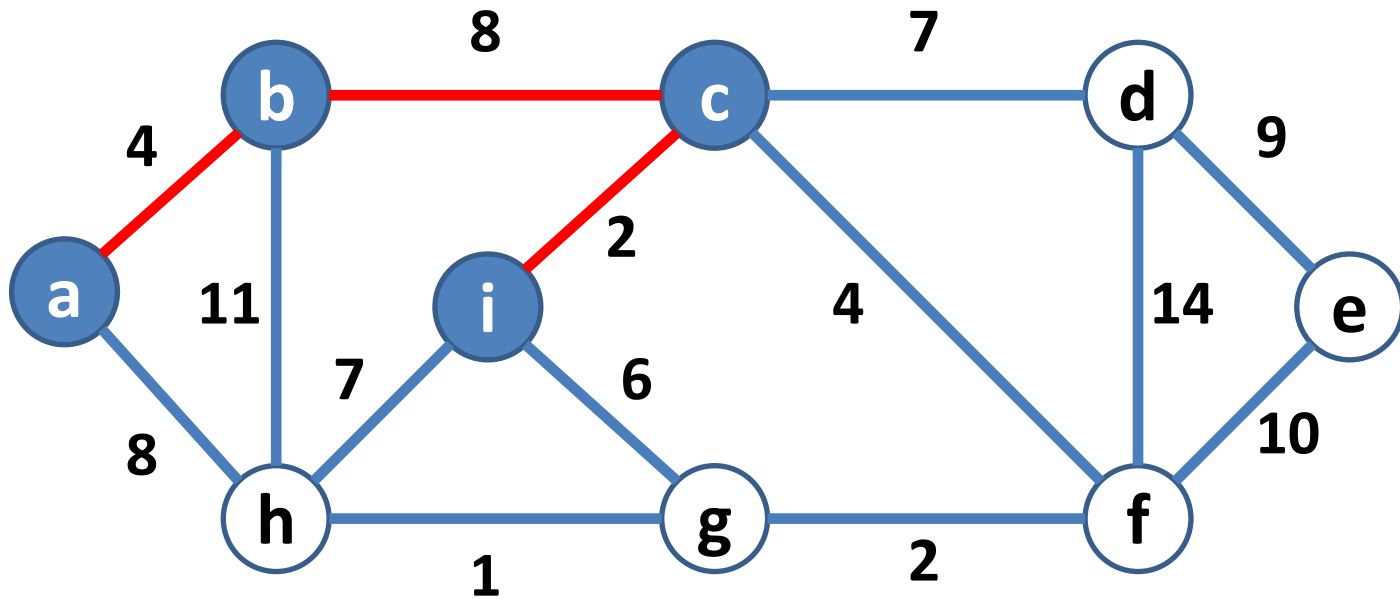
Loop principal (linha 7)



key	0	4	8	7	□	4	□	8	2
	a	b	c	d	e	f	g	h	i
□		a	b	c		c		a	c
	a	b	c	d	e	f	g	h	i
Q				d	e	f	g	h	

# Loop principal (linhas 8-11)

[adjacente h] – condição **FALSA**



key

0	4	8	7	□	4	□	8	2
---	---	---	---	---	---	---	---	---

a      b      c      d      e      f      g      h      i

□

	a	b	c		c		a	c
--	---	---	---	--	---	--	---	---

a      b      c      d      e      f      g      h      i

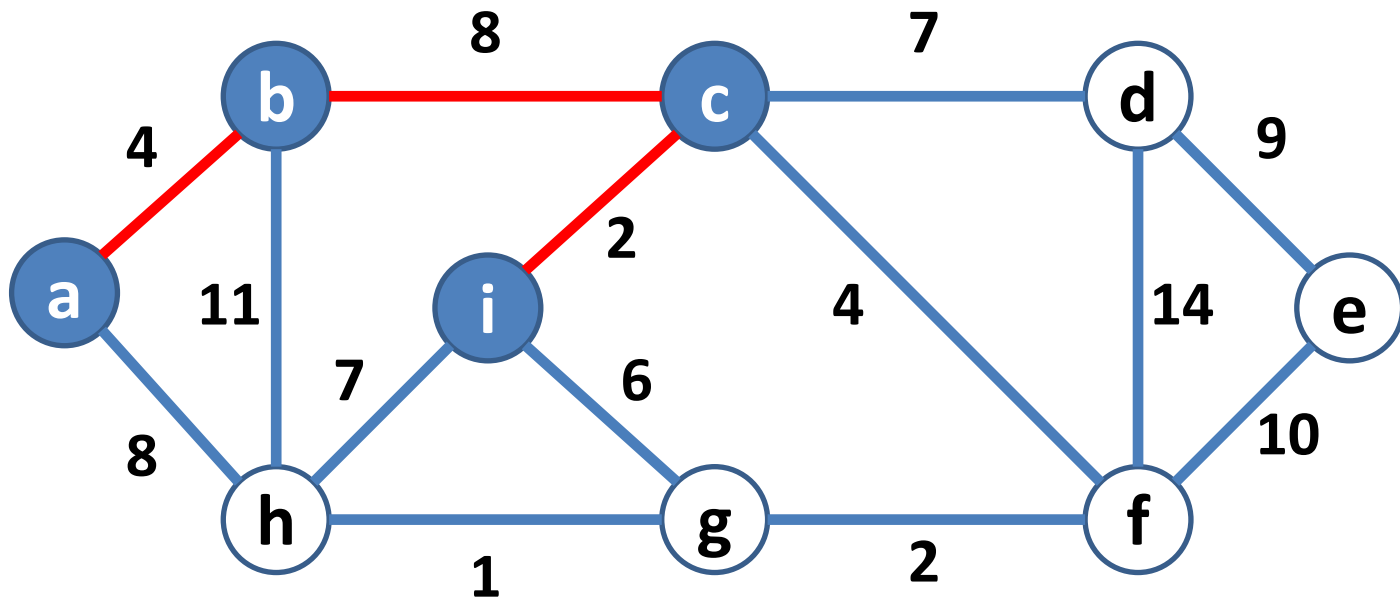
Q

			d	e	f	g	h	
--	--	--	---	---	---	---	---	--



Loop principal (linhas 8-11)

[adjacente g]



key

0	4	8	7	□	4	6	8	2
---	---	---	---	---	---	---	---	---

a b c d e f g h i

□

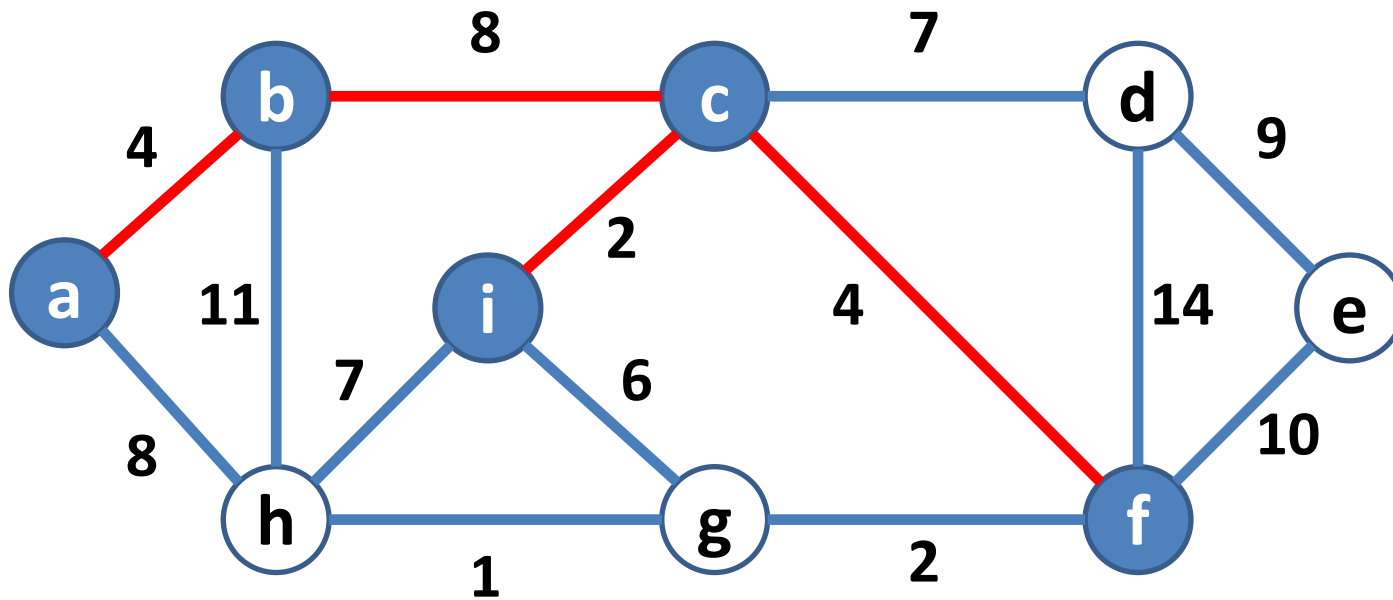
	a	b	c		c	i	a	c
--	---	---	---	--	---	---	---	---

a b c d e f g h i

Q

			d	e	f	g	h	
--	--	--	---	---	---	---	---	--

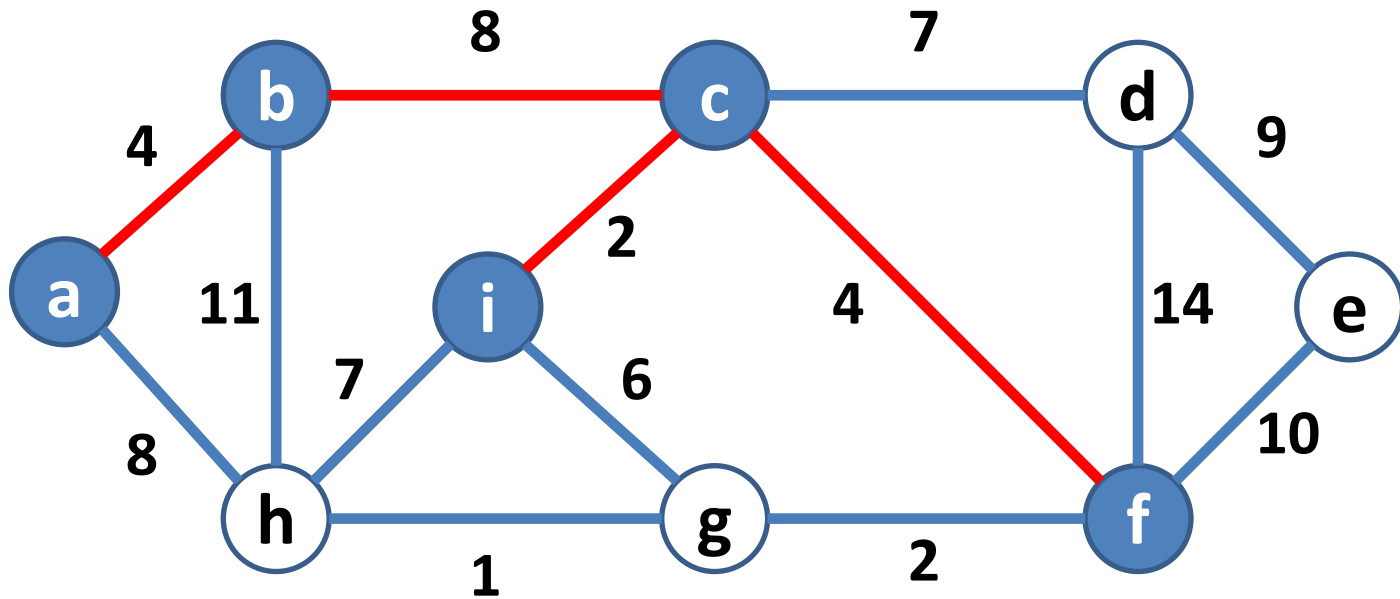
Loop principal (linha 7)



key	0	4	8	7	□	4	6	8	2
	a	b	c	d	e	f	g	h	i
□		a	b	c		c	i	a	c
	a	b	c	d	e	f	g	h	i
Q				d	e		g	h	

# Loop principal (linhas 8-11)

[adjacente d] – condição **FALSA**



key

0	4	8	7	□	4	6	8	2
---	---	---	---	---	---	---	---	---

a      b      c      d      e      f      g      h      i

□

	a	b	c		c	i	a	c
--	---	---	---	--	---	---	---	---

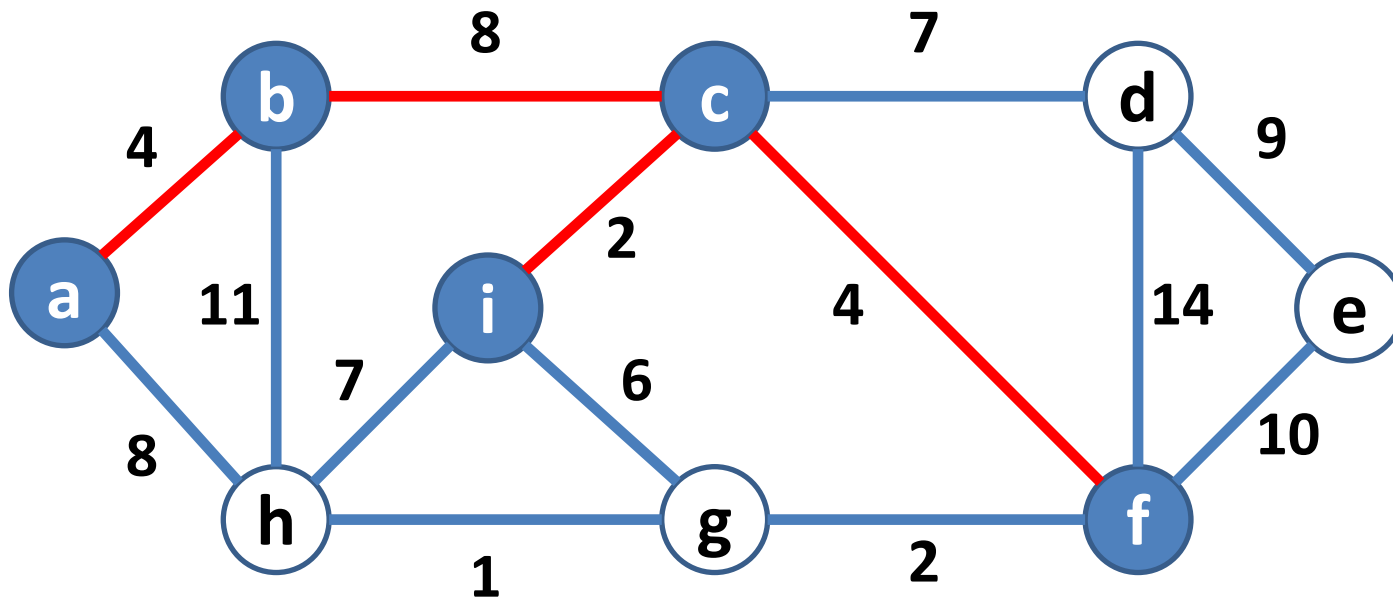
a      b      c      d      e      f      g      h      i

Q

			d	e		g	h	
--	--	--	---	---	--	---	---	--

Loop principal (linhas 8-11)

[adjacente e]



key

0	4	8	7	10	4	6	8	2
---	---	---	---	----	---	---	---	---

a b c d e f g h i

□

	a	b	c	f	c	i	a	c
--	---	---	---	---	---	---	---	---

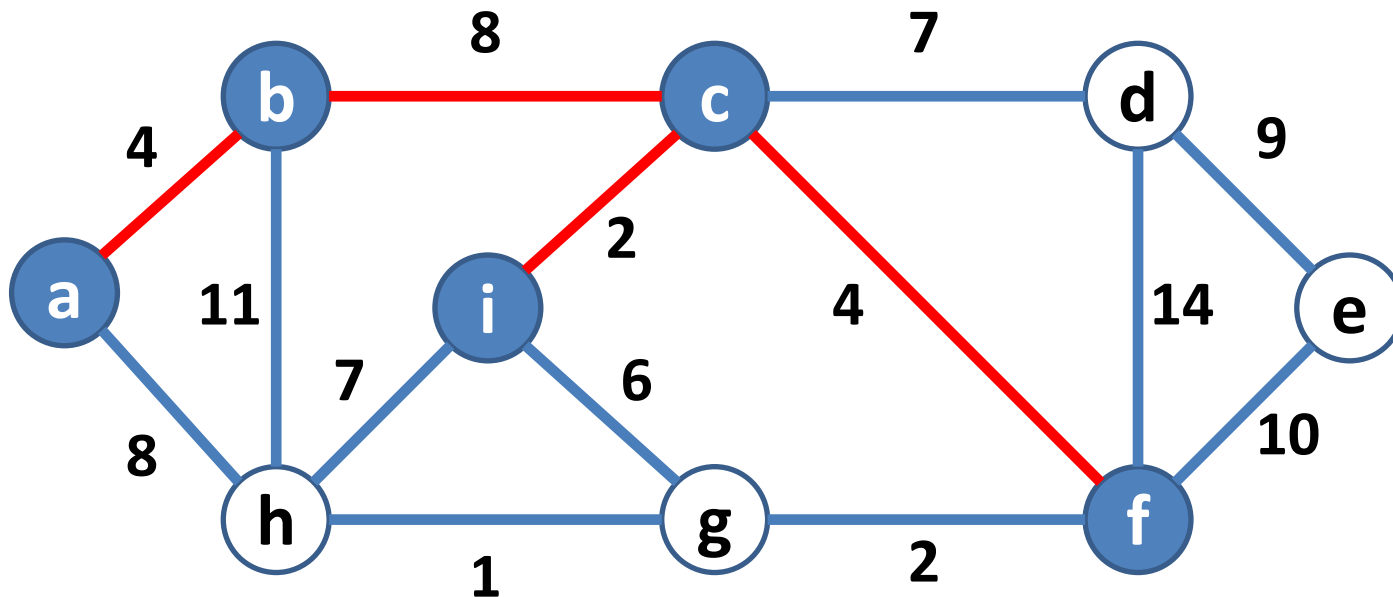
a b c d e f g h i

Q

			d	e		g	h	
--	--	--	---	---	--	---	---	--

Loop principal (linhas 8-11)

[adjacente g]



key

0	4	8	7	10	4	2	8	2
---	---	---	---	----	---	---	---	---

a b c d e f g h i

□

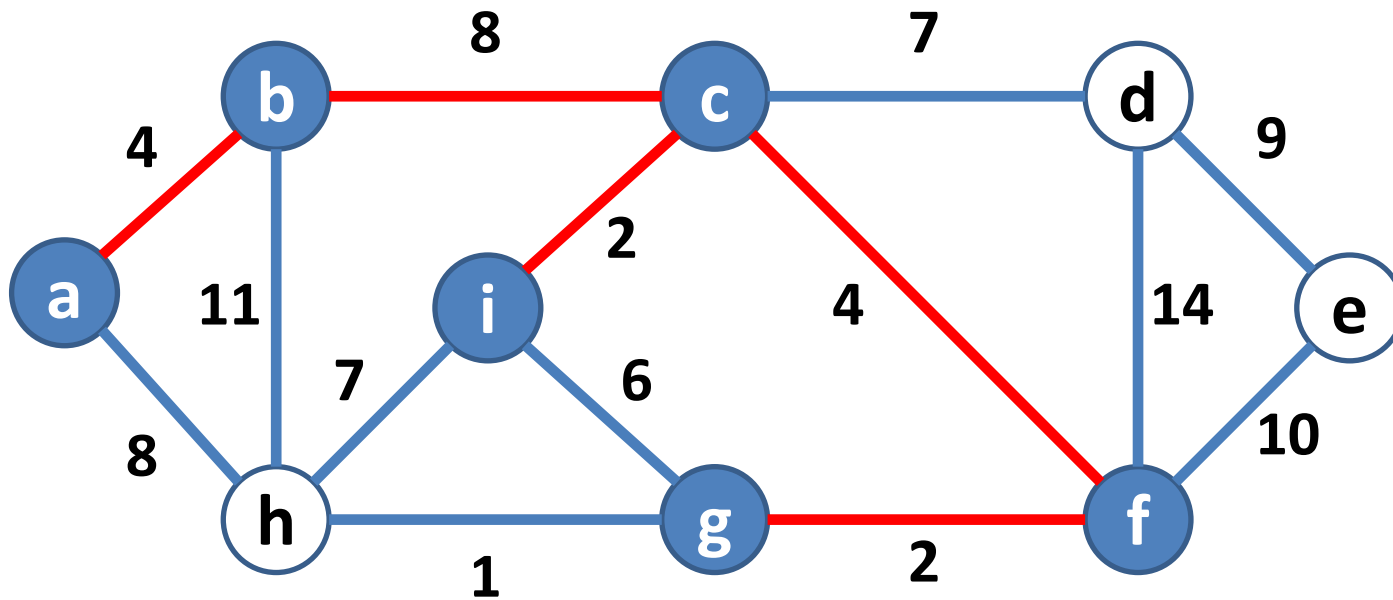
	a	b	c	f	c	f	a	c
--	---	---	---	---	---	---	---	---

a b c d e f g h i

Q

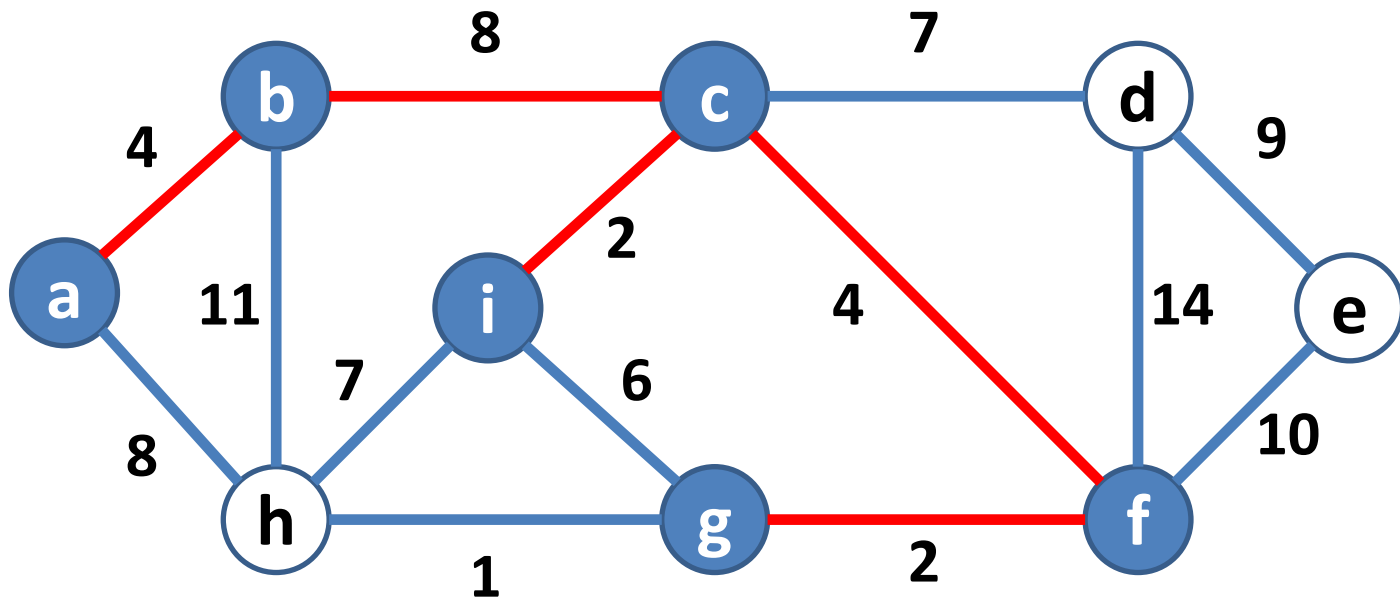
			d	e		g	h	
--	--	--	---	---	--	---	---	--

Loop principal (linha 7)



key	0	4	8	7	10	4	2	8	2
	a	b	c	d	e	f	g	h	i
□		a	b	c	f	c	f	a	c
	a	b	c	d	e	f	g	h	i
Q				d	e			h	

Loop principal (linhas 8-11)  
 [adjacente f] – condição **FALSA**



key

0	4	8	7	10	4	2	8	2
---	---	---	---	----	---	---	---	---

a      b      c      d      e      f      g      h      i

□

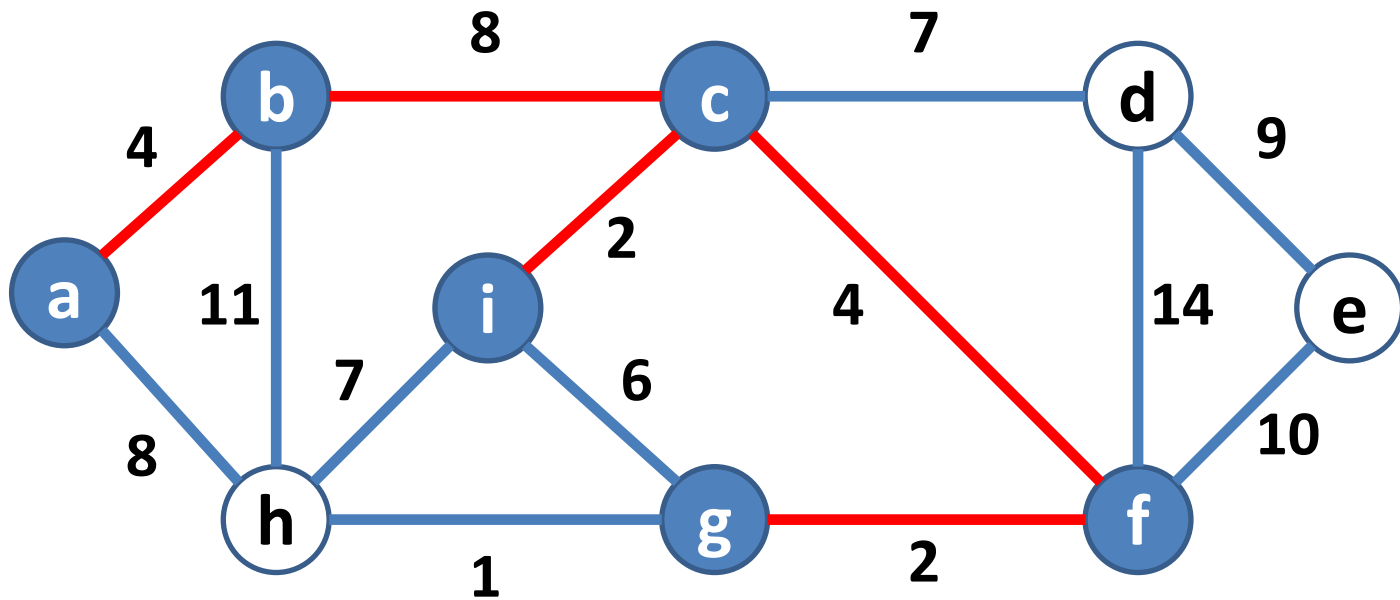
	a	b	c	f	c	f	a	c
--	---	---	---	---	---	---	---	---

a      b      c      d      e      f      g      h      i

Q

			d	e			h	
--	--	--	---	---	--	--	---	--

Loop principal (linhas 8-11)  
 [adjacente i] – condição **FALSA**



key

0	4	8	7	10	4	2	8	2
---	---	---	---	----	---	---	---	---

a      b      c      d      e      f      g      h      i

□

	a	b	c	f	c	f	a	c
--	---	---	---	---	---	---	---	---

a      b      c      d      e      f      g      h      i

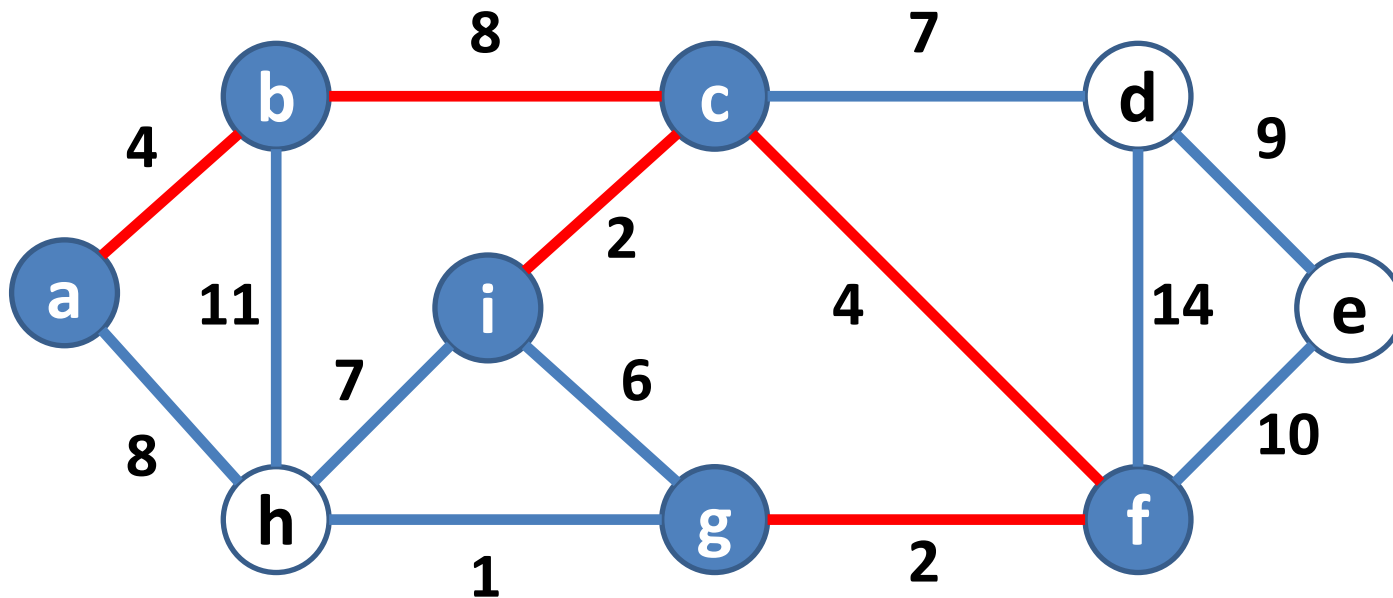
Q

			d	e			h	
--	--	--	---	---	--	--	---	--



Loop principal (linhas 8-11)

[adjacente h]



key

0	4	8	7	10	4	2	1	2
---	---	---	---	----	---	---	---	---

a b c d e f g h i

□

	a	b	c	f	c	f	g	c
--	---	---	---	---	---	---	---	---

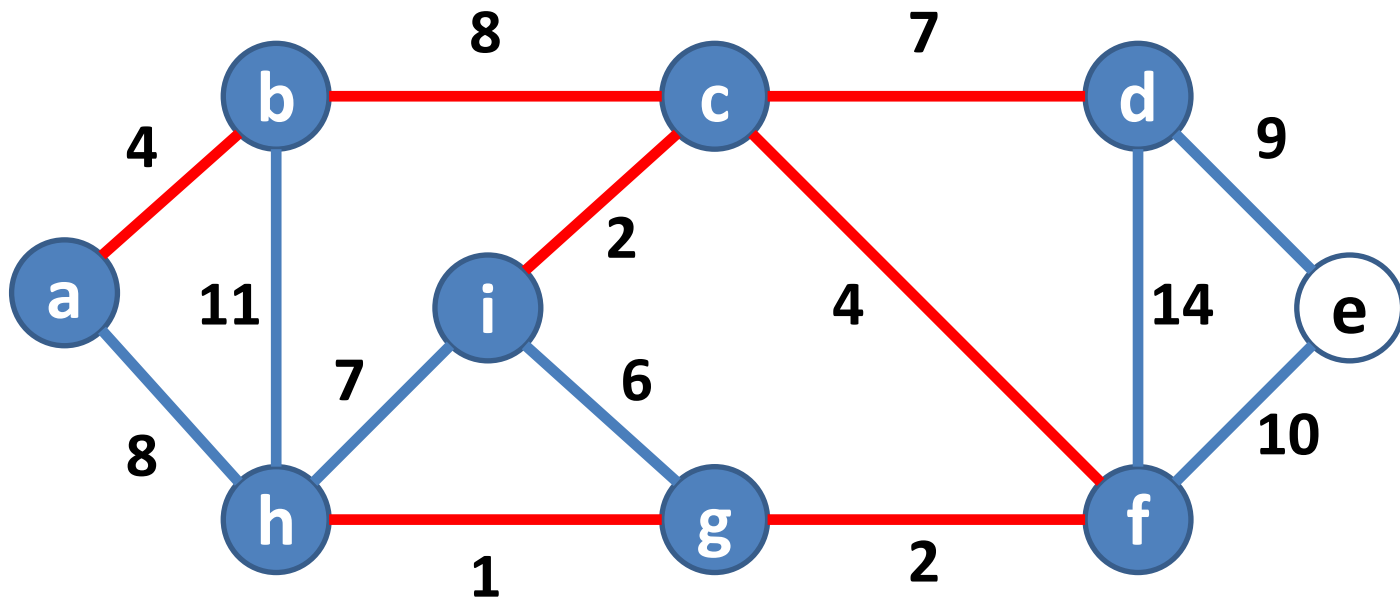
a b c d e f g h i

Q

			d	e			h	
--	--	--	---	---	--	--	---	--



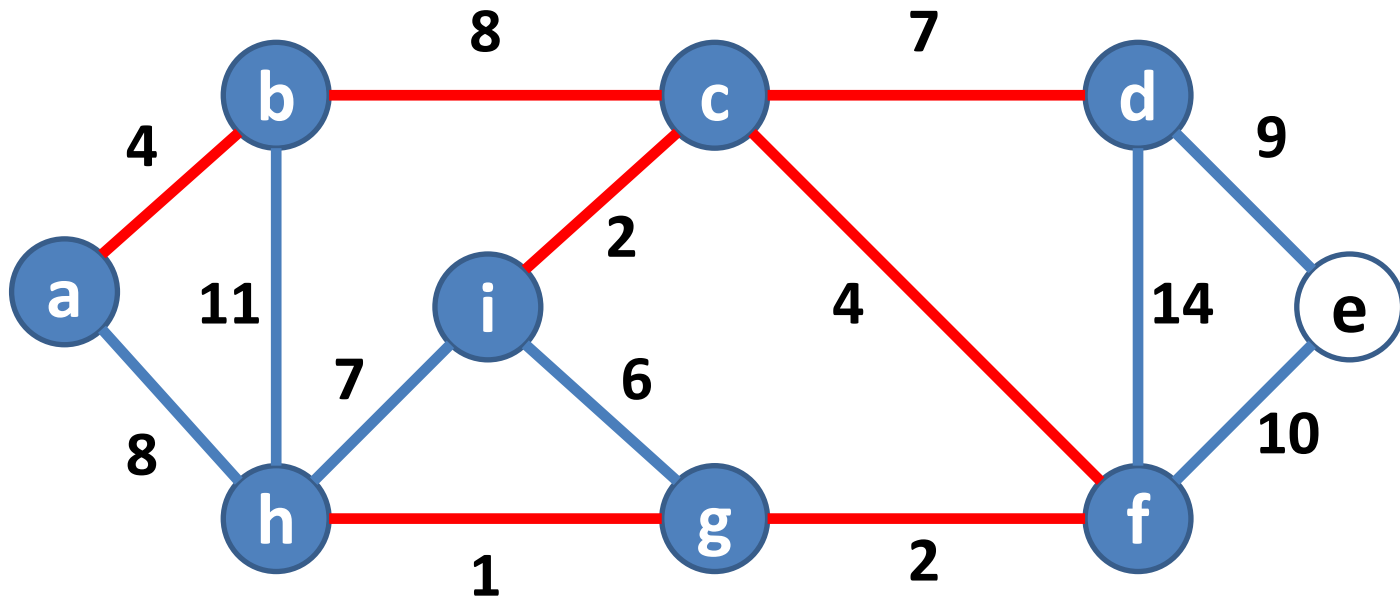
Loop principal (linha 7)



key	0	4	8	7	10	4	2	1	2
	a	b	c	d	e	f	g	h	i
□		a	b	c	f	c	f	g	c
	a	b	c	d	e	f	g	h	i
Q					e				

# Loop principal (linhas 8-11)

[adjacente c] – condição FALSA



key

0	4	8	7	10	4	2	1	2
---	---	---	---	----	---	---	---	---

a b c d e f g h i

□

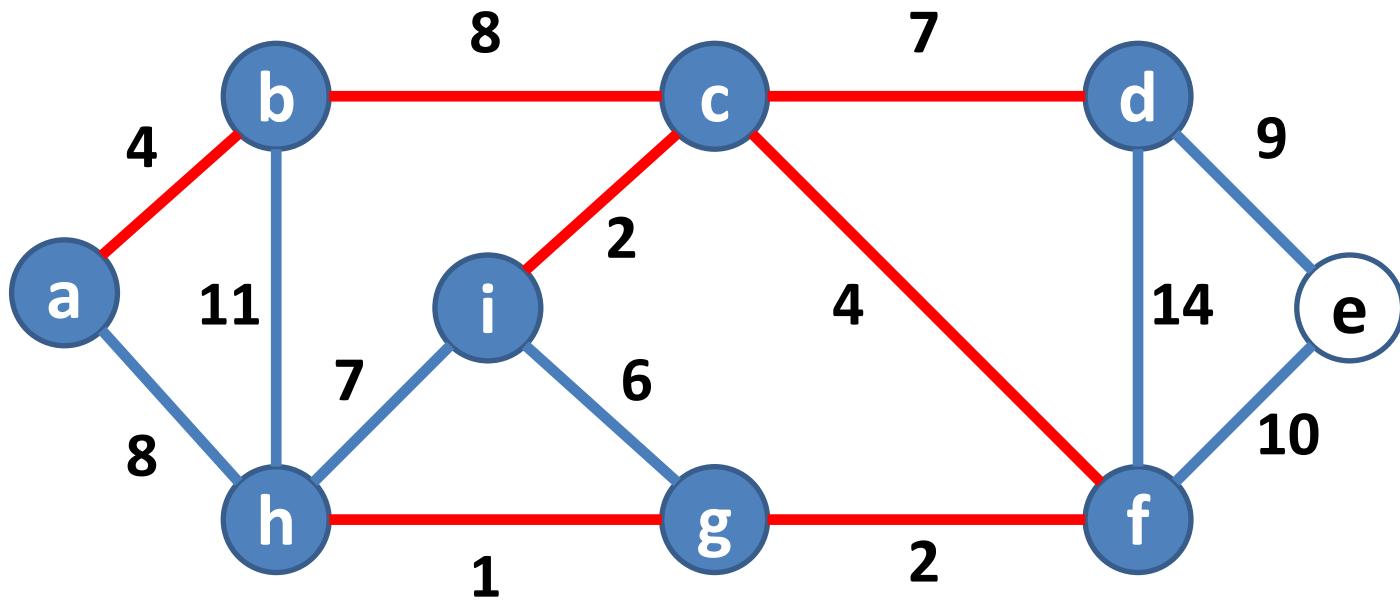
	a	b	c	f	c	f	g	c
--	---	---	---	---	---	---	---	---

a b c d e f g h i

Q

				e				
--	--	--	--	---	--	--	--	--

Loop principal (linhas 8-11)  
[adjacente f] – condição **FALSA**



key

0	4	8	7	10	4	2	1	2
---	---	---	---	----	---	---	---	---

a      b      c      d      e      f      g      h      i

□

	a	b	c	f	c	f	g	c
--	---	---	---	---	---	---	---	---

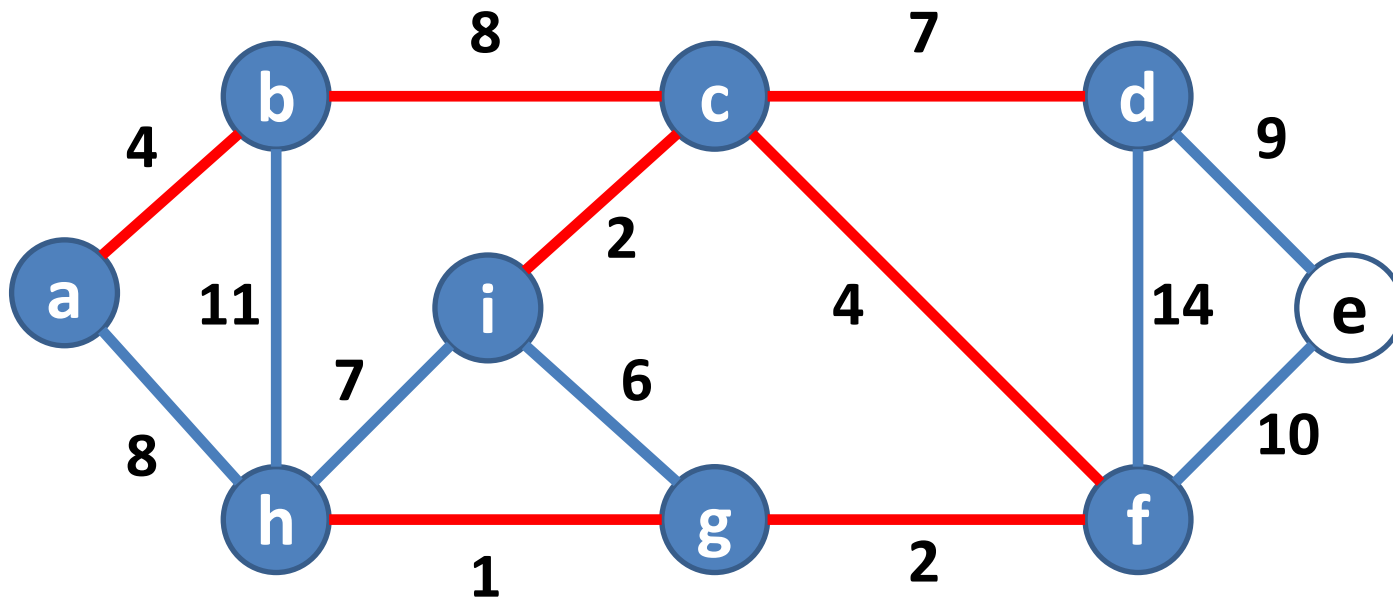
a      b      c      d      e      f      g      h      i

Q

				e				
--	--	--	--	---	--	--	--	--

Loop principal (linhas 8-11)

[adjacente e]



key

0	4	8	7	9	4	2	1	2
---	---	---	---	---	---	---	---	---

a b c d e f g h i

□

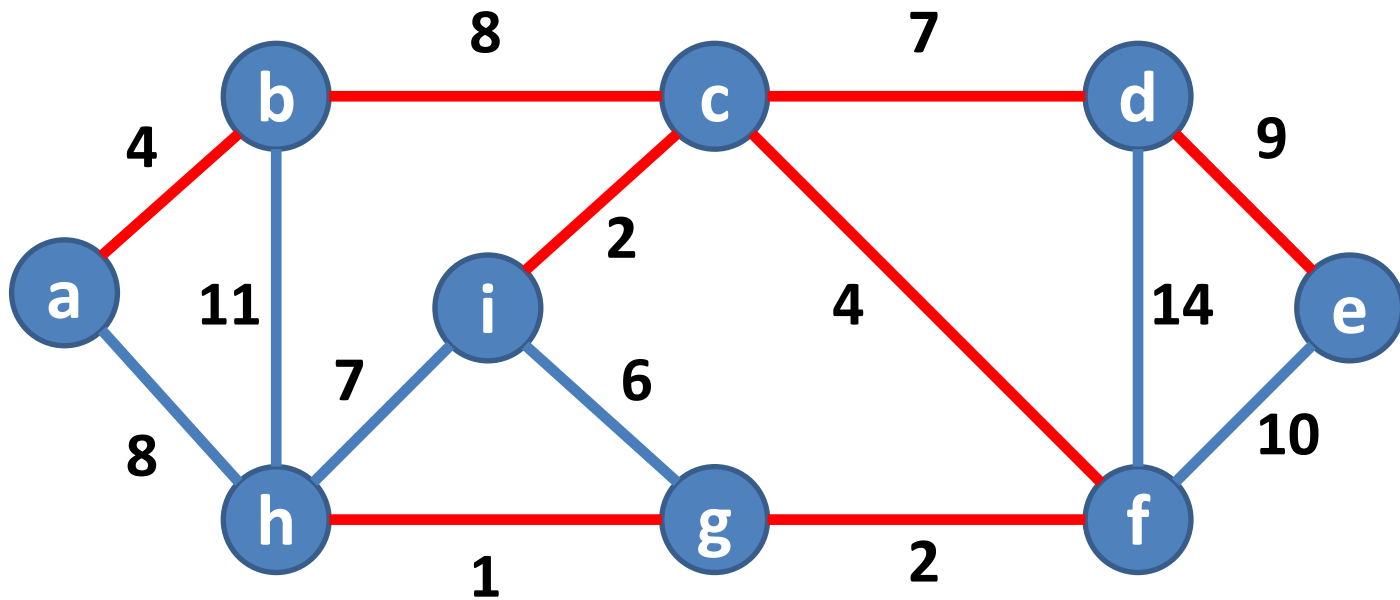
	a	b	c	d	c	f	g	c
--	---	---	---	---	---	---	---	---

a b c d e f g h i

Q

				e				
--	--	--	--	---	--	--	--	--

Loop principal (linha 7)



key

0	4	8	7	9	4	2	1	2
---	---	---	---	---	---	---	---	---

a b c d e f g h i

□

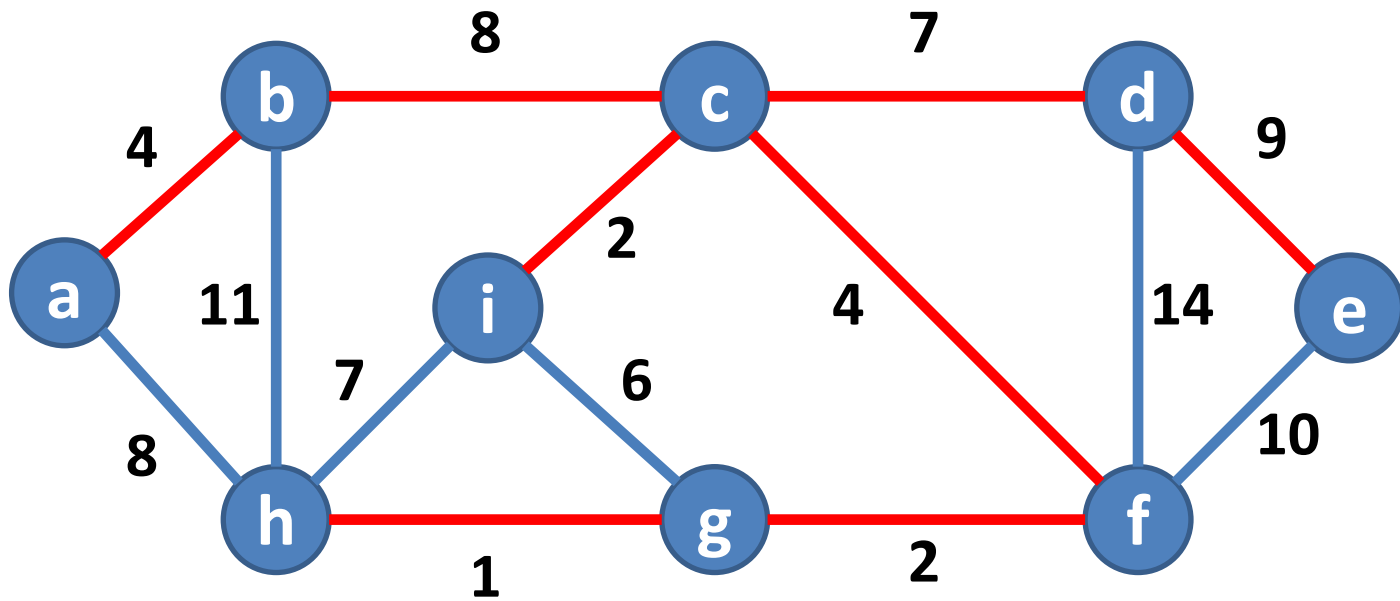
	a	b	c	d	c	f	g	c
--	---	---	---	---	---	---	---	---

a b c d e f g h i

Q

--	--	--	--	--	--	--	--	--

## Fila vazia (condição de parada)



**key**

2

i

1

C

i

## Q