Presjek lukova

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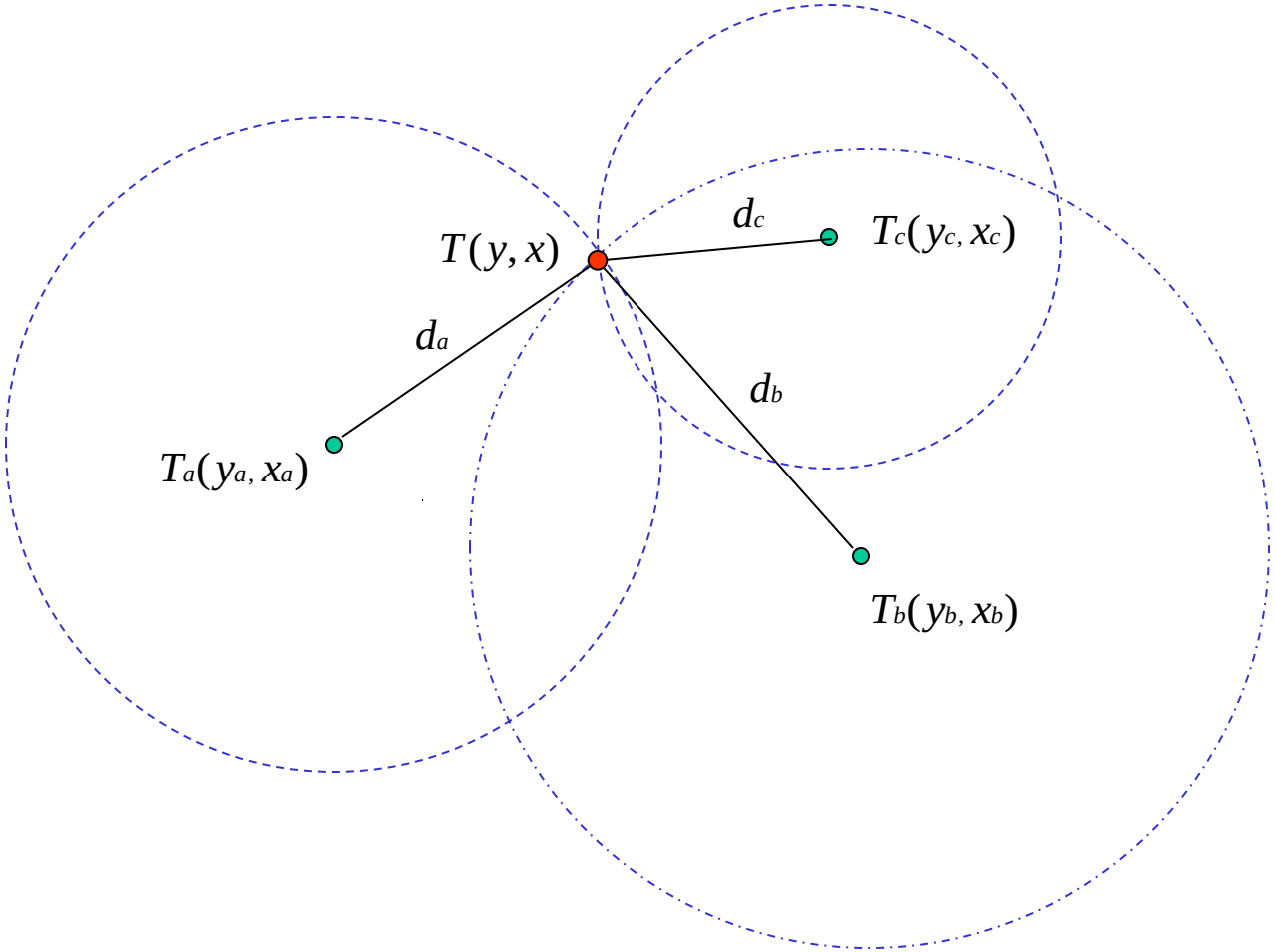
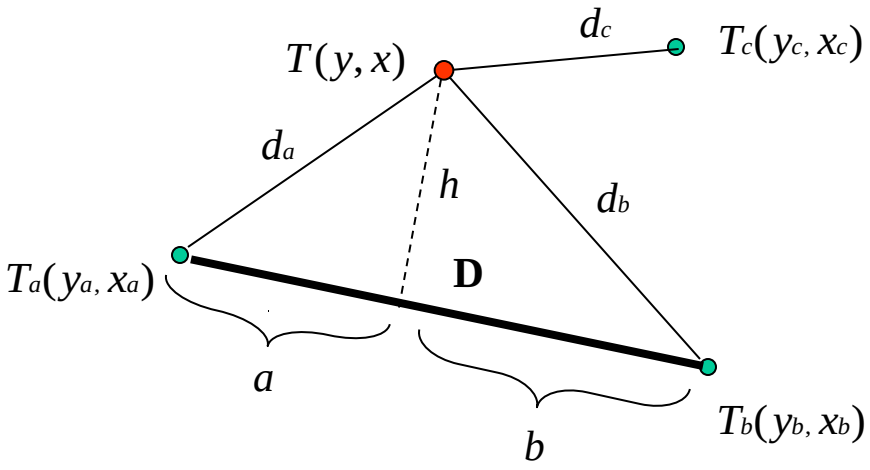
PRESJEK LUKOVA



PRESJEK LUKOVA je metoda određivanja koordinata točaka na osnovu najmanje dvije poznate točke i dužina ***d*** mjerenih od danih točaka do tražene točke ***T(y,x).***

PRESJEK LUKOVA



$$h^2 = d_a^2 - a^2$$
$$h^2 = d_b^2 - b^2$$

$$d_a^2 - a^2 = d_b^2 - b^2$$
$$d_a^2 - d_b^2 = a^2 - b^2$$
$$(a-b)\cdot(a+b) = (d_a - d_b)\cdot(d_a + d_b)$$
$$a - b = \frac{(d_a - d_b)\cdot(d_a + d_b)}{(a+b)}$$

$$(a+b) = \sqrt{(y_b - y_a)^2 + (x_b - x_a)^2}$$

$$\begin{aligned} a + b &= A \\ a - b &= B \end{aligned} \quad \Big| \; + \qquad \begin{aligned} a + b &= A \\ a - b &= B \end{aligned} \quad \Big| \; -$$

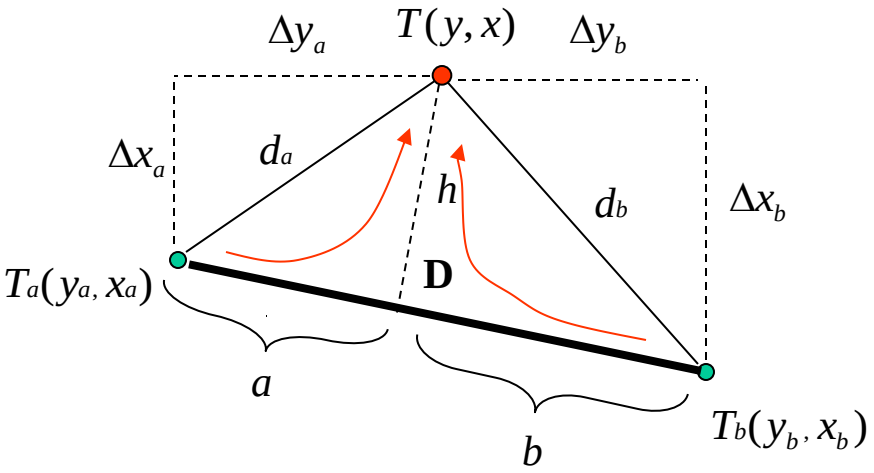
$$2a = A + B \;\Rightarrow\; a = \frac{A+B}{2} \qquad 2b = A - B \;\Rightarrow\; b = \frac{A-B}{2}$$

$$h = \sqrt{d_a^2 - a^2} = \sqrt{d_b^2 - b^2}$$

PRESJEK LUKOVA

$$\Delta y_i = p \cdot a_i + q \cdot h_i \qquad i = 1,2,\ldots n$$

$$\Delta x_i = q \cdot a_i - p \cdot h_i$$



PRVI SMJER RAČUNANJA

$$\Delta y_a = (+p) \cdot (+a) + (-q) \cdot (-h)$$

$$\Delta x_a = (-q) \cdot (+a) - (+p) \cdot (-h)$$

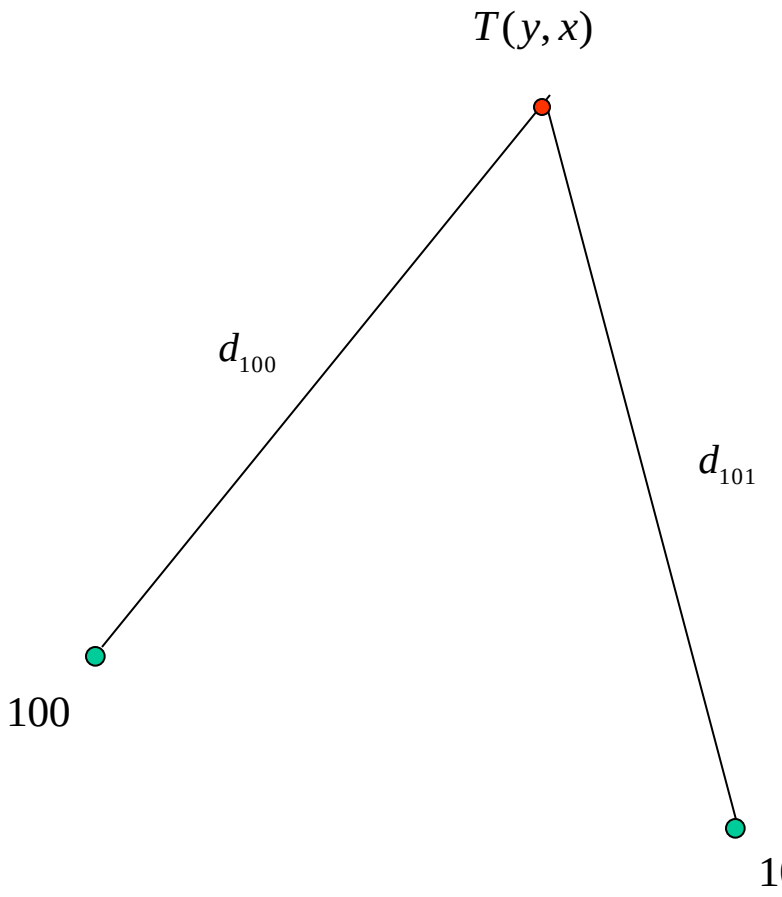
DRUGI SMJER RAČUNANJA

$$\Delta y_b = (-p) \cdot (+b) + (+q) \cdot (+h)$$

$$\Delta x_b = (+q) \cdot (+b) - (-p) \cdot (+h)$$

$$y = y_a + \Delta y_a = y_b + \Delta y_b \qquad x = x_a + \Delta x_a = x_b + \Delta x_b$$

PRESJEK LUKOVA



100 $y = 42152.32$ $x = 26544.56$

101 $y = 42375.50$ $x = 26490.28$

$d_{100} = 220.25$

$d_{101} = 200.36$

PRESJEK LUKOVA $\frac{a-b}{2}=\frac{(d_a-d_b)\cdot(d_a+d_b)}{2(a+b)}$ $\frac{a+b}{2}=\frac{1}{2}\sqrt{(y_b-y_a)^2+(x_b-x_a)^2}$

100	y_a	42152.32	x_a	26544.56	$(y_b-y_a)^2$	49809.31	$p\cdot a$ 129.28
101	y_b	42375.50	x_b	26490.28	$(x_b-x_a)^2$	2946.32	$q\cdot h$ +41.48
	y_b-y_a	223.18	x_b-x_a	−54.28	$(a+b)^2$	52755.63	Δy_a 170.76
	$y-y_a$	170.76	$x-x_a$	139.11	$a+b$	229.69	
	$y-y_b$	−52.43	$x-x_b$	193.39	$p=\frac{y_b-y_a}{a+b}$		$q\cdot a$ −31.44
	$y_\circ$	42323.08 42323.07	$x_\circ$	26683.67 26683.67	p	0.97166	$-p\cdot h$ 170.55
	d_a	220.25	d_a^2	48510.06	$q=\frac{x_b-x_a}{a+b}$		Δx_a 139.11
	d_b	200.36	$-a^2$	−17702.30	q	−0.23632	
	d_a-d_b	19.89	d_b^2	40144.13	p^2	0.94412	$p\cdot b$ −93.91
	d_a+d_b	420.61	$-b^2$	−9341.22	q^2	0.05585	$q\cdot h$ 41.48
	$2(a+b)$	459.37	h^2	30807.76	$1=p^2+q^2$	0.99997	Δy_b −52.43
	$\frac{a-b}{2}$	18.20	h^2	30802.91			
	$\frac{a+b}{2}$	114.85	h	175.52 175.51			$q\cdot b$ 22.84
	a	133.05					$-p\cdot h$ 170.55
	b	96.65					Δx_b 193.39

PRESJEK LUKOVA

$$\frac{a-b}{2}=\frac{(d_a-d_b)\cdot(d_a+d_b)}{2(a+b)} \qquad \frac{a+b}{2}=\frac{1}{2}\sqrt{(y_b-y_a)^2+(x_b-x_a)^2}$$

101

100

y_a	42375.50	x_a	26490.28	$(y_b-y_a)^2$	49809.31	$p\cdot a$	−93.91
y_b	42152.32	x_b	26544.56	$(x_b-x_a)^2$	2946.32	$q\cdot h$	41.48
y_b-y_a	−223.18	x_b-x_a	54.28	$(a+b)^2$	52755.63	Δy_a	−52.43
$y-y_a$	−52.43	$x-x_a$	193.39	$a+b$	229.69		
$y-y_b$	170.76	$x-x_b$	139.11	$p=\frac{y_b-y_a}{a+b}$		$q\cdot a$	22.84
$y_\circ$	42323.07 42323.08	$x_\circ$	26683.67 26683.67	p	−0.97166	$-p\cdot h$	170.55
d_a	200.36	d_a^2	40144.13	$q=\frac{x_b-x_a}{a+b}$		Δx_a	193.39
d_b	220.25	$-a^2$	−9341.22	q	0.23632		
d_a-d_b	−19.89	d_b^2	48510.06	p^2	0.94412	$p\cdot b$	129.28
d_a+d_b	420.61	$-b^2$	−17702.30	q^2	0.05585	$q\cdot h$	+41.48
$2(a+b)$	459.37	h^2	30802.91	$1=p^2+q^2$	0.99997	Δy_b	170.76
$\frac{a-b}{2}$	−18.20	h^2	30807.76				
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y_a	x_a	$(y_b-y_a)^2$	$p\cdot a$
y_b	x_b	$(x_b-x_a)^2$	$q\cdot h$
y_b-y_a	x_b-x_a	$(a+b)^2$	Δy_a
$y-y_a$	$x-x_a$	$a+b$	
$y-y_b$	$x-x_b$	$p=\frac{y_b-y_a}{a+b}$	$q\cdot a$
$y_\circ$	$x_\circ$	p	$-p\cdot h$
d_a	d_a^2	$q=\frac{x_b-x_a}{a+b}$	Δx_a
d_b	$-a^2$	q	
d_a-d_b	d_b^2	p^2	$p\cdot b$
d_a+d_b	$-b^2$	q^2	$q\cdot h$
$2(a+b)$	h^2	$1=p^2+q^2$	Δy_b
$\frac{a-b}{2}$	h^2		
$\frac{a+b}{2}$	h		$q\cdot b$
a			$-p\cdot h$
b			Δx_b