20.10.2011 Statistics

If p < 0,05 then we reject null hypothesis

If p > 0,05 then we not reject null hypothesis

If p = 0,05 then you can choose

t-test

Null hypothesis: samples are equal (are the same)

T-test for Dependent Samples (Desetiboj) Marked differences are significant at p < ,05000

	Mean	Std.Dv.	N	t	df	p
points 100 m	871,7179	53,0997				
points long jump	803,3333	246,5539	39	1,880152	38	*0,067769*

Because p (0,06)>0,05, we not reject null hypothesis, which is telling that samples are equal. It means that from "100m" has obtained *same* points. Difference is not statistically significant.
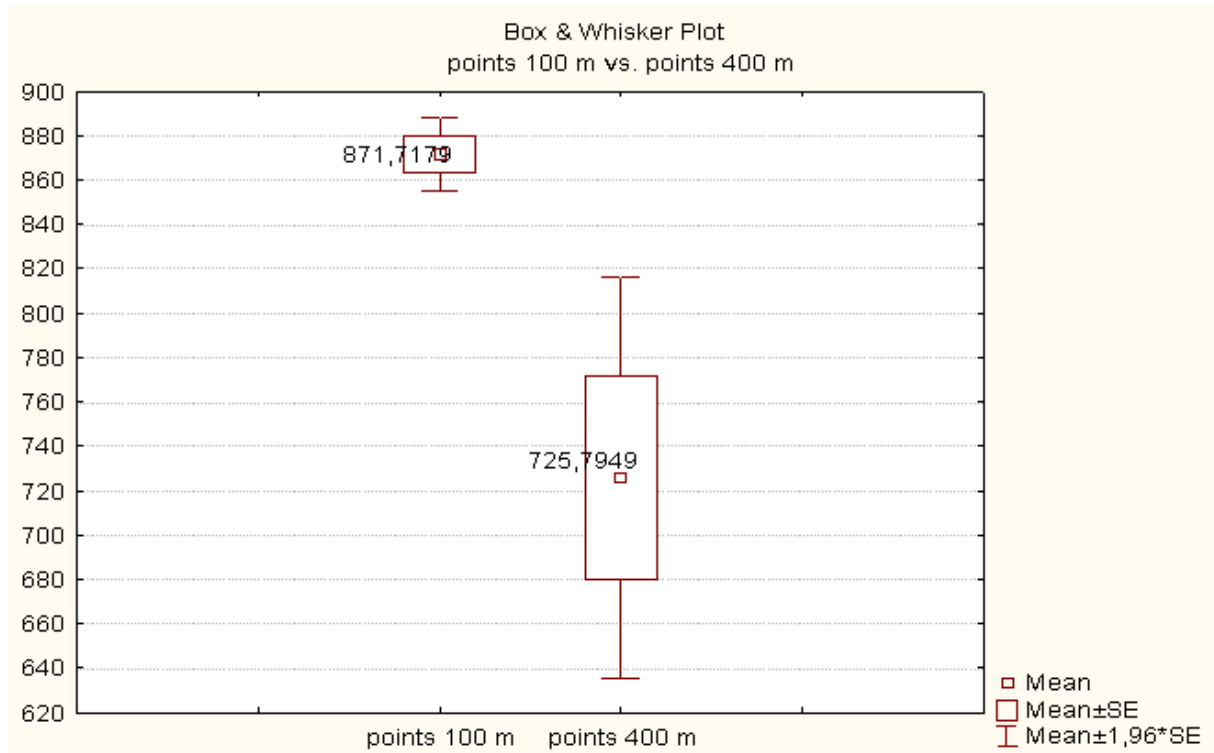
Box & Whisker Plot
points 100 m vs. points long jump
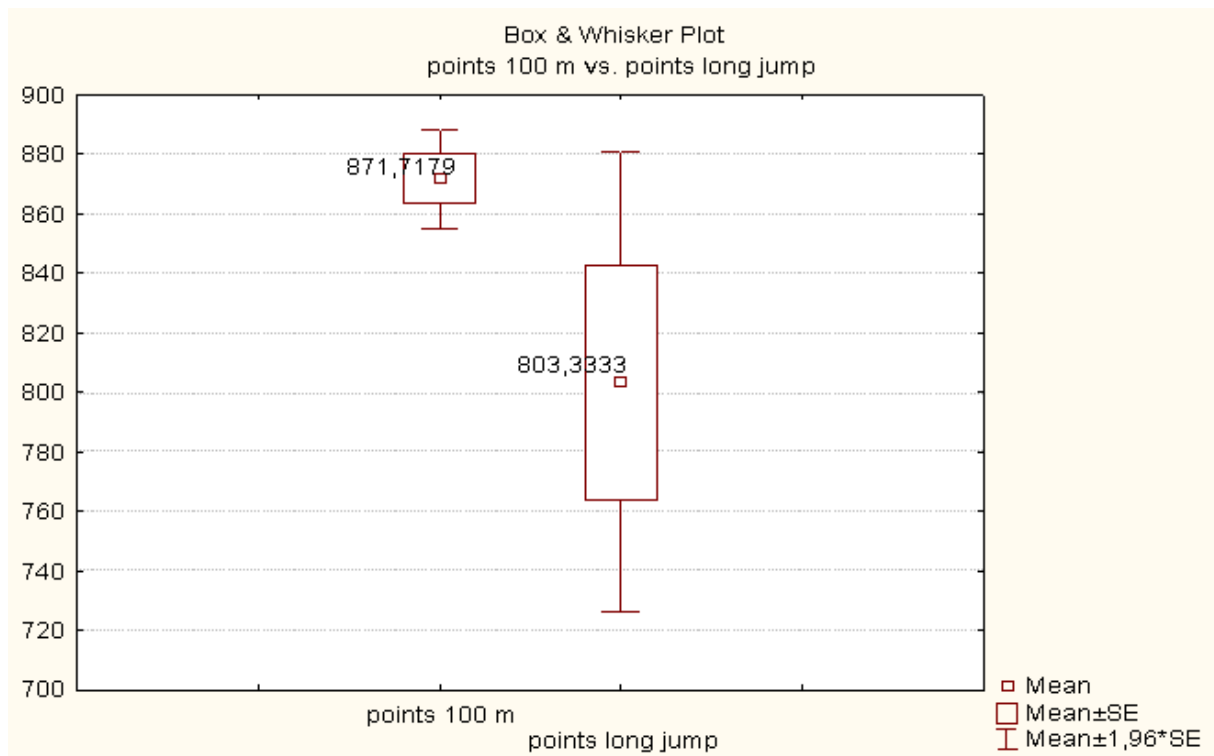
From statistical point of view, 871 points from "100 m" is equal 803 point from "long jump". This difference is not statistically significant. At the 5% level of statistical significance

	Mean	Std.Dv.	N	t	df	p
points 100 m	871,7179	53,0997				
points 400 m	725,7949	287,4990	39	3,323692	38	0,001974

Because p (0,00)<0,05, we reject null hypothesis, which is telling that samples are equal. It means that

from "100m" athletes have obtained <u>different</u> (more) points than from "400 m". Difference is statistically significant.

Box & Whisker Plot
points 100 m vs. points 400 m

871,7179

725,7949

points 100 m   points 400 m

□ Mean
□ Mean±SE
⊥ Mean±1,96*SE

Graph is used to confuse the reader.

There are three lies. Terrible, ugly and statistics.

Do not believe the charts, believe numbers.

Correlation

	points 100 m	points long jump
points 100 m	1,0000	,4589
	p= ---	p=,003
points long jump	,4589	1,0000
	p=,003	p= ---

Because p (0,003)<0,05, we reject null hypothesis, which is telling that correlation coefficient is ZERO. It means that correlation is not ZERO, and is 0,4589. Correlation is statistically significant. This relationship is direct.

	points 100 m	points high jump
points 100 m	1,0000	,2792
	p= ---	p=,085
points high jump	,2792	1,0000
	p=,085	p= ---

Because p (0,085)>0,05, we don´t reject null hypothesis, which is telling that correlation coefficient is ZERO. It means that correlation coefficient is ZERO. Correlation is statistically significant.