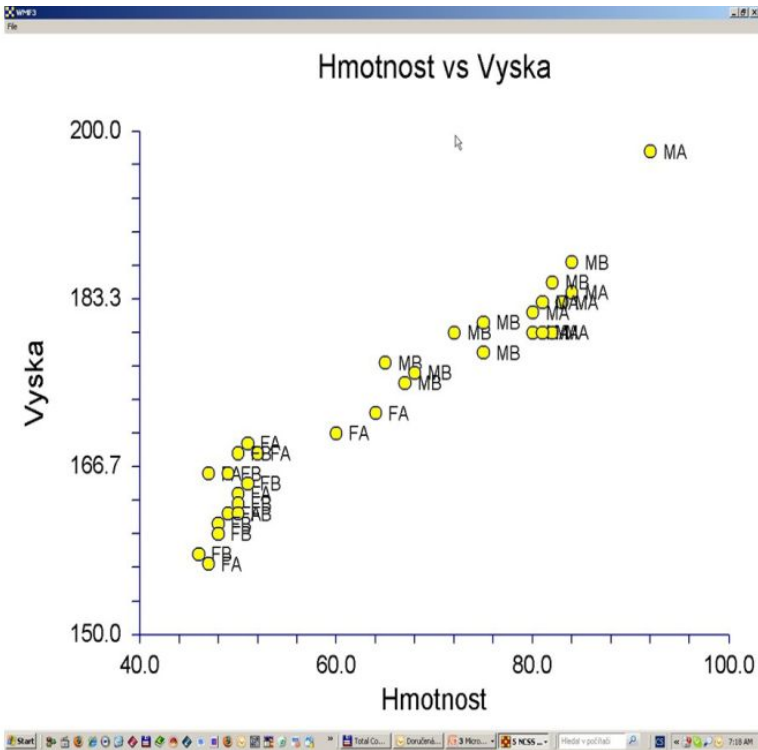
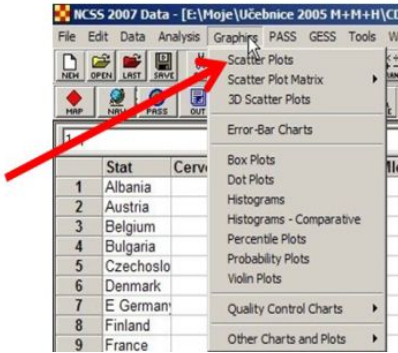


Grafické metody

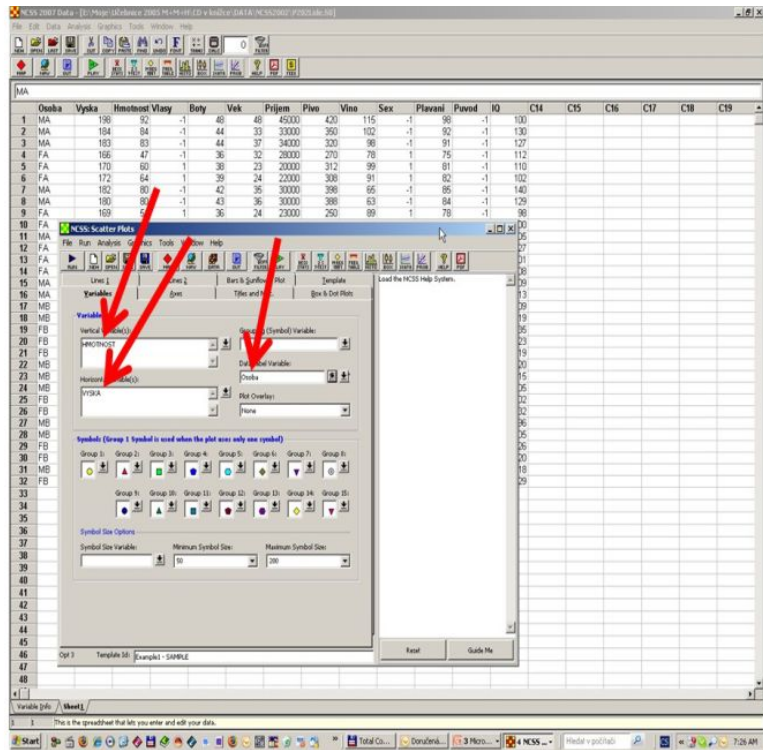
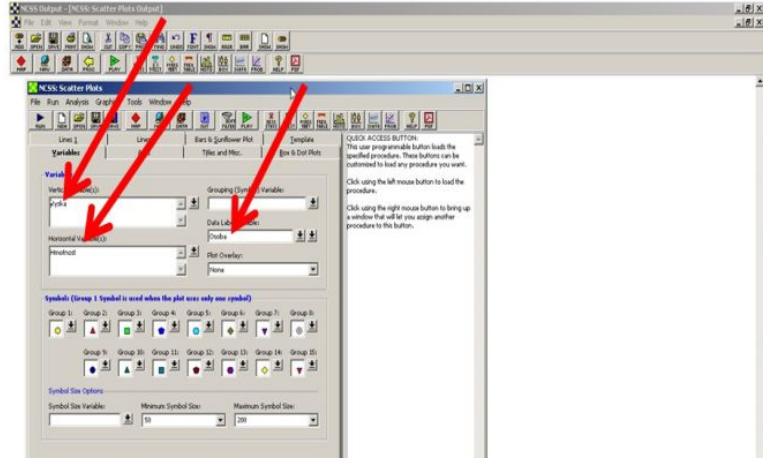
Rozptylový graf

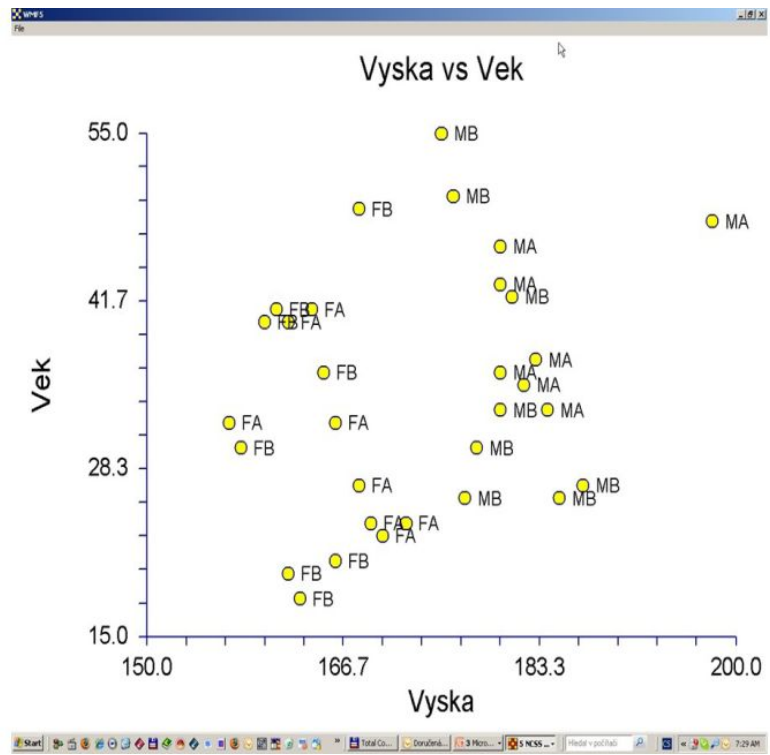
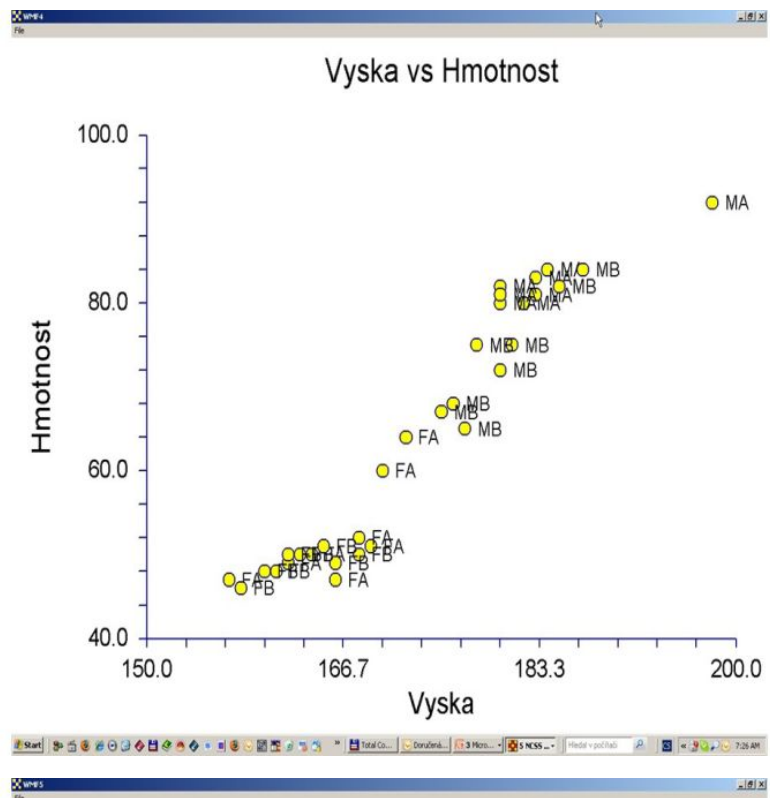
SCATTER PLOT



PŘÍKLAD 3.1. Zobrazování znaků zdrojové matice dat demografického souboru Lidé

Využitím rozptylových diagramů a ostatních grafických diagnostik statistické analýzy dat je třeba nalézt trendy a vnitřní párové vztahy mezi 12 znaky zdrojové matice demografického souboru dat Lidé. V rozptylových diagramech je třeba odhalit korelaci dvou znaků, a především pak nejsilnější korelaci s nejvyšší hodnotou korelačního koeficientu. K tomu je třeba vyšetřit všechny možné kombinace dvou znaků.





SSS Scatter Plots dialog box configuration for the 'Vyska vs Hmotnost' plot.

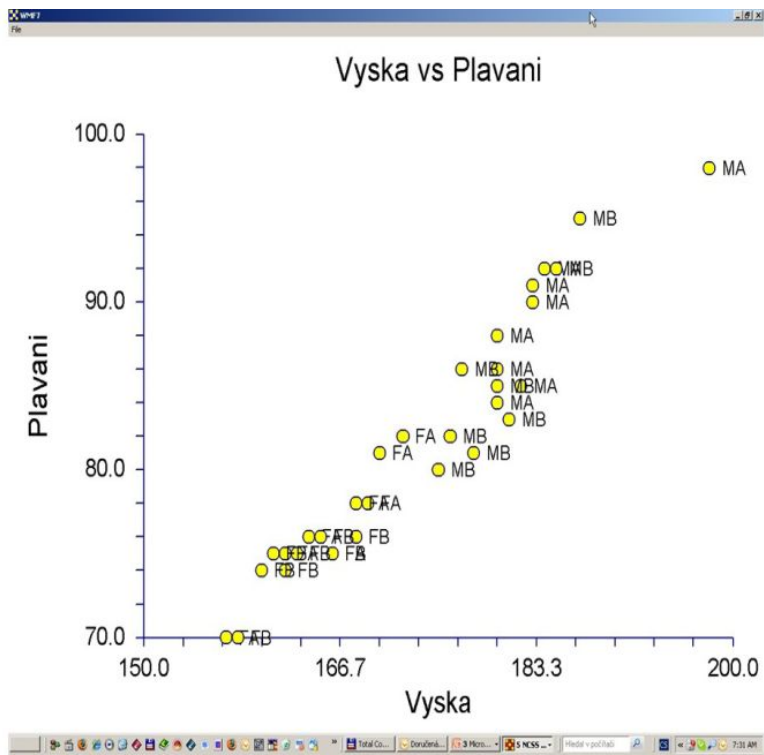
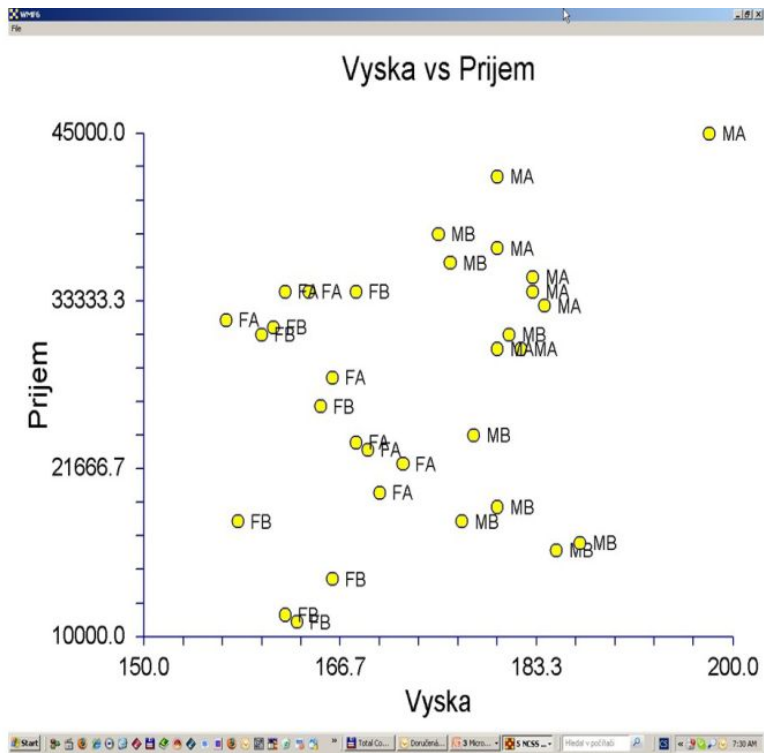
Variable	Group (Symbol)
Vyska	Group 1: Circle
Hmotnost	Group 1: Circle

Symbol Size Options:
 Symbol Size Variable: [None]
 Minimum Symbol Size: 10
 Maximum Symbol Size: 200

SSS Scatter Plots dialog box configuration for the 'Vyska vs Vek' plot.

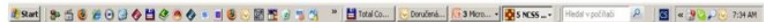
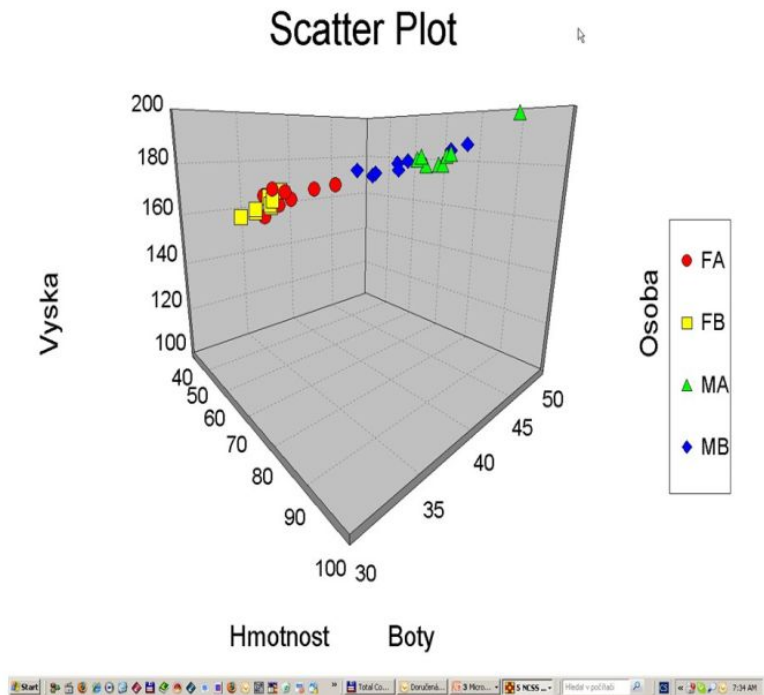
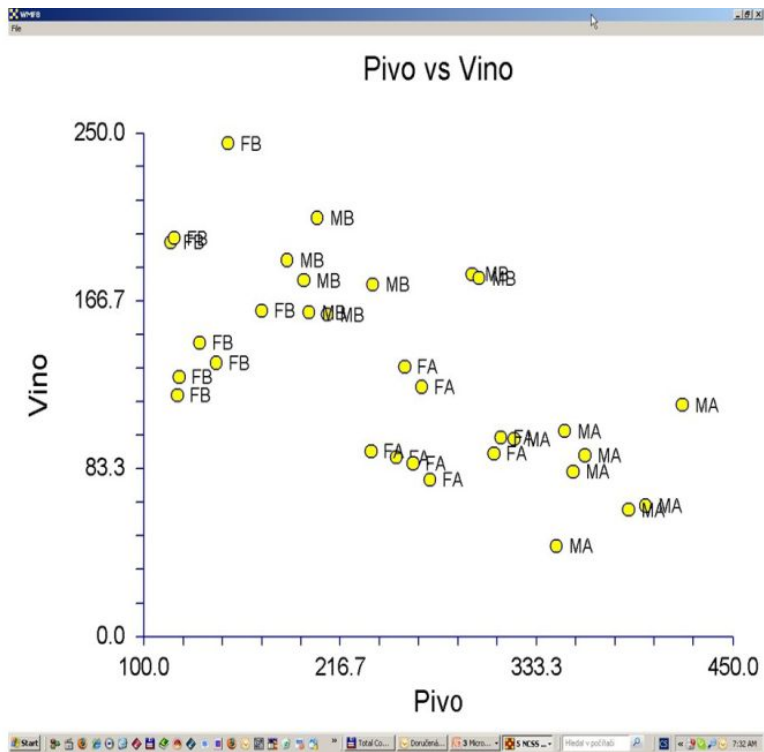
Variable	Group (Symbol)
Vyska	Group 1: Circle
Vek	Group 1: Circle

Symbol Size Options:
 Symbol Size Variable: [None]
 Minimum Symbol Size: 10
 Maximum Symbol Size: 200



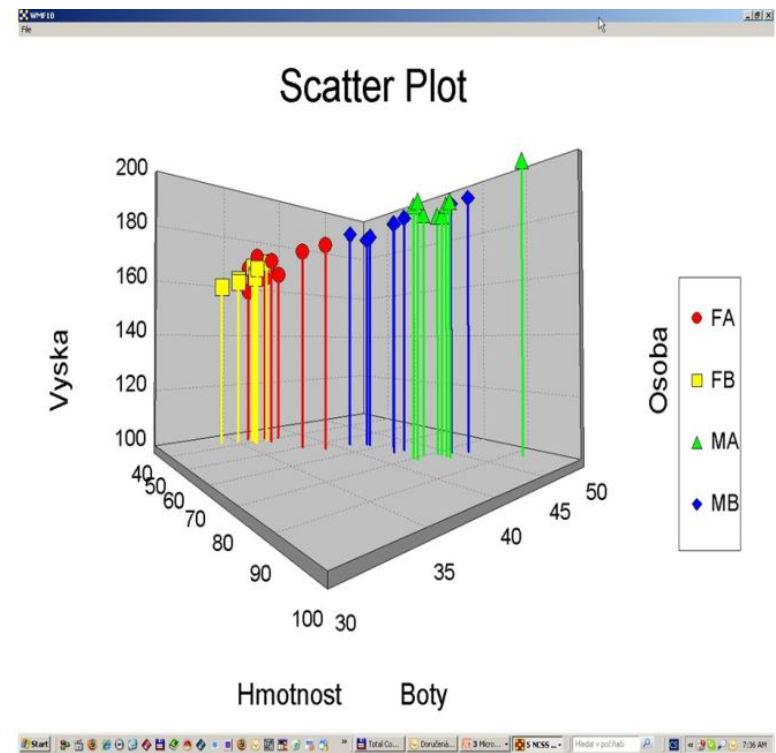
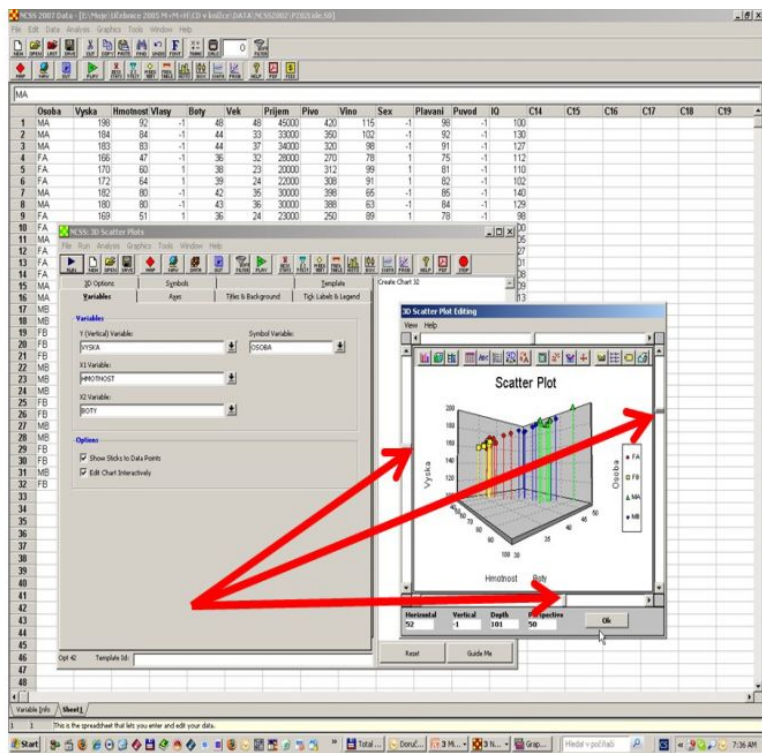
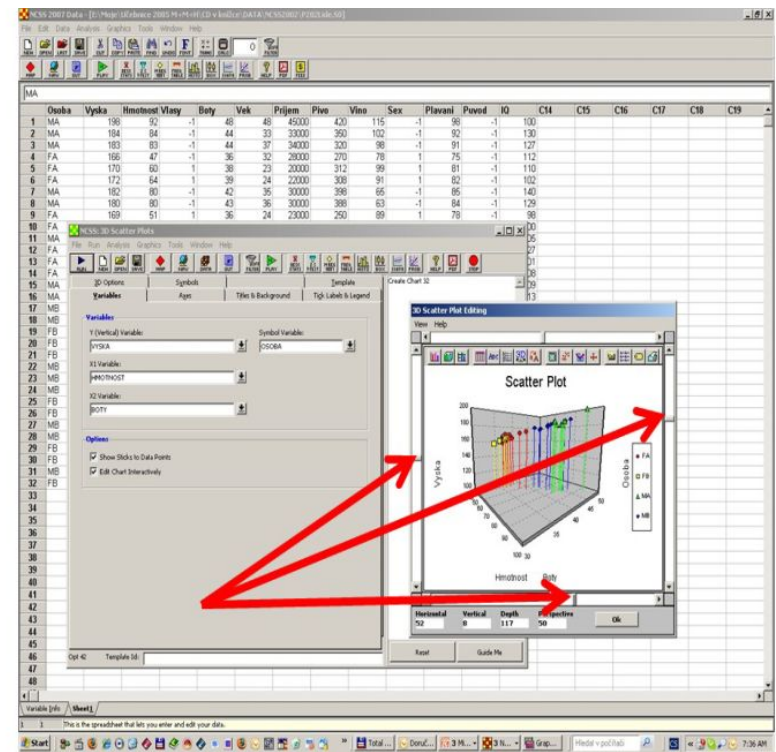
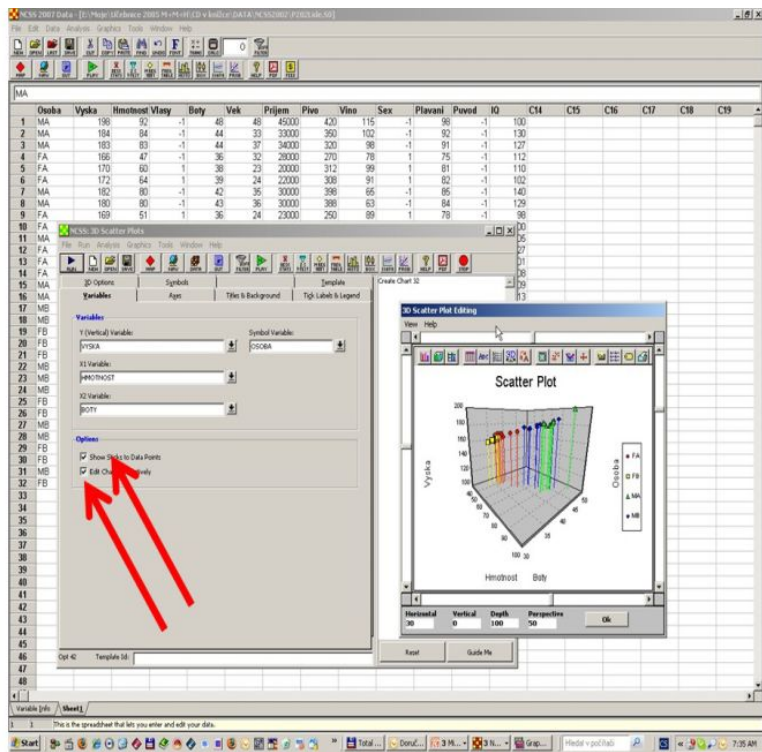
Screenshot of Minitab software showing the 'NCS: Scatter Plots' dialog box. The 'Y' variable is 'Prijem' and the 'X' variable is 'Vyska'. The 'Symbol' section is set to 'None'. Red arrows point to the 'Y' and 'X' variable selection fields.

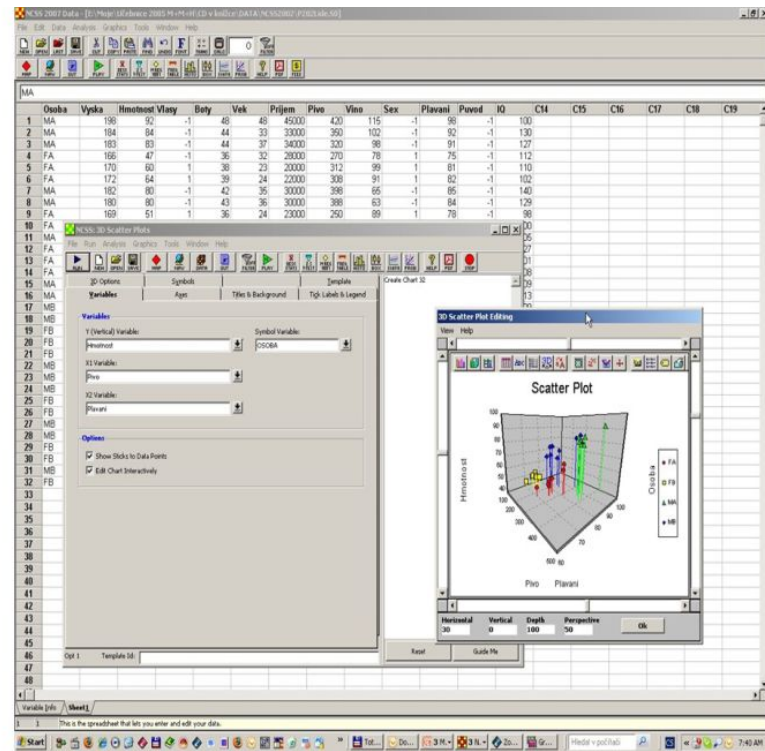
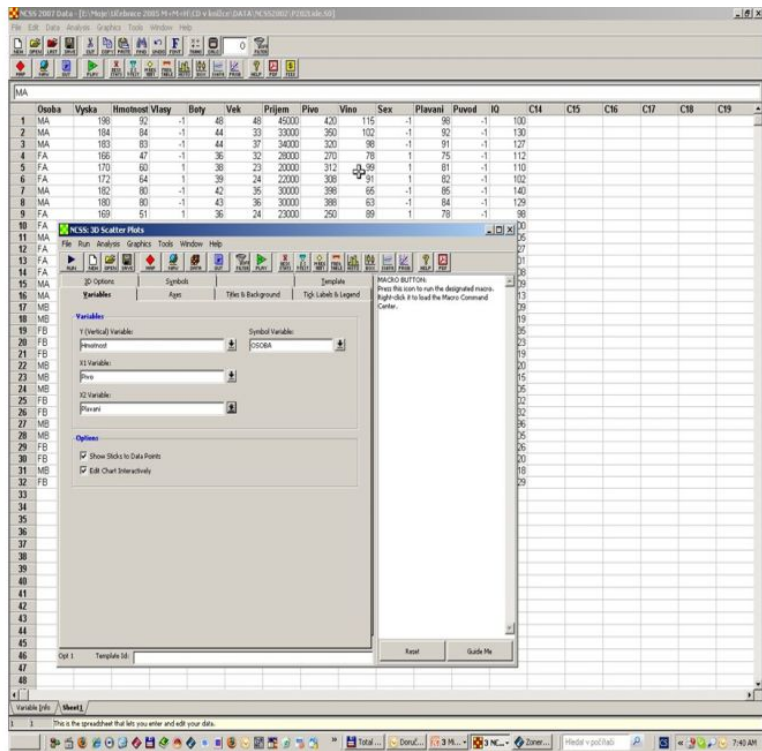
Screenshot of Minitab software showing the 'NCS: Scatter Plots' dialog box. The 'Y' variable is 'Plavani' and the 'X' variable is 'Vyska'. The 'Symbol' section is set to 'None'. Red arrows point to the 'Y' and 'X' variable selection fields.



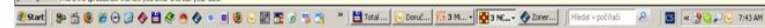
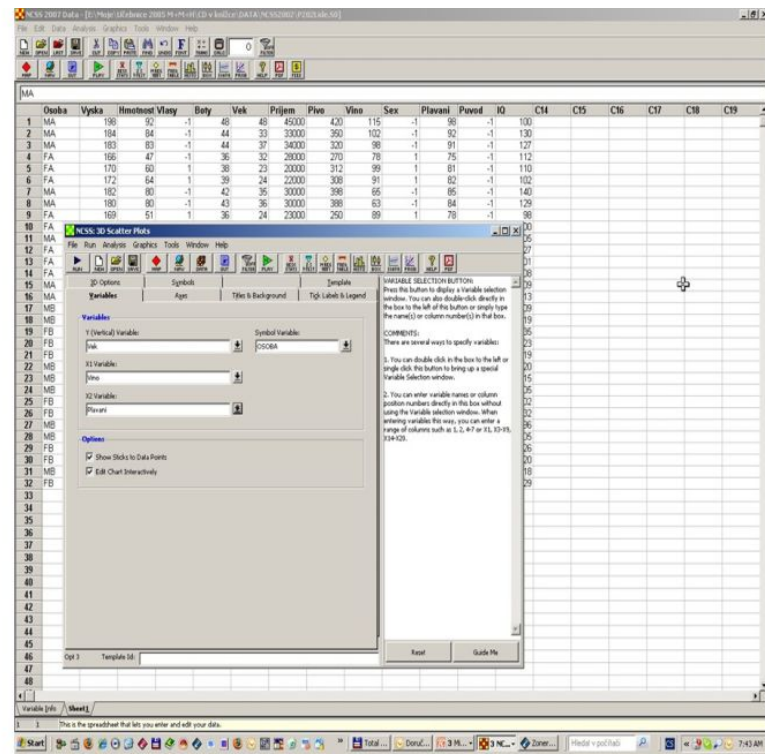
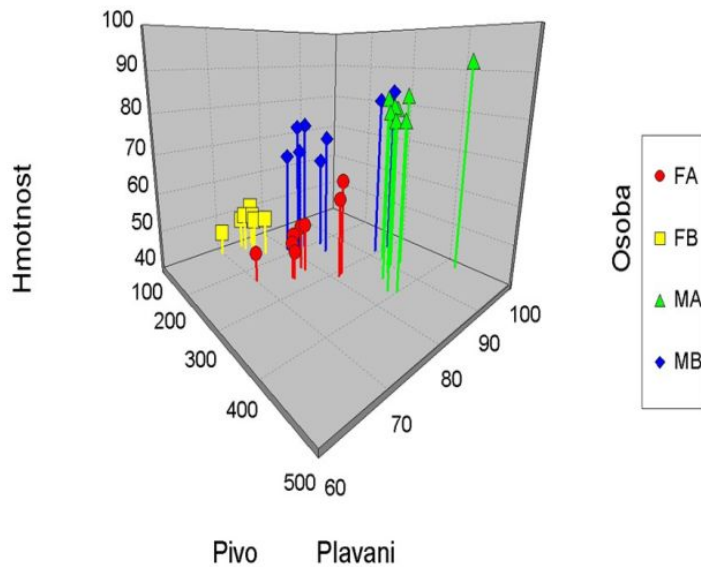
A screenshot of the NCS 2007 Data software interface. The top window shows a spreadsheet with columns for various variables: Osoba, Vyska, Hmotnost, Vlas, Boty, Vek, Prijem, Pivo, Vlna, Sex, Plavani, Poved, IQ, C14, C15, C16, C17, C18, C19. Below the spreadsheet is the 'NCS 3D Scatter Plots' dialog box. Red arrows point to the 'Y Variable' field (set to 'Vlna'), the 'X1 Variable' field (set to 'Prijem'), the 'X2 Variable' field (set to 'Boty'), and the 'Options' section where 'Show Shells to Data Points' and 'Edit Colors' are checked.

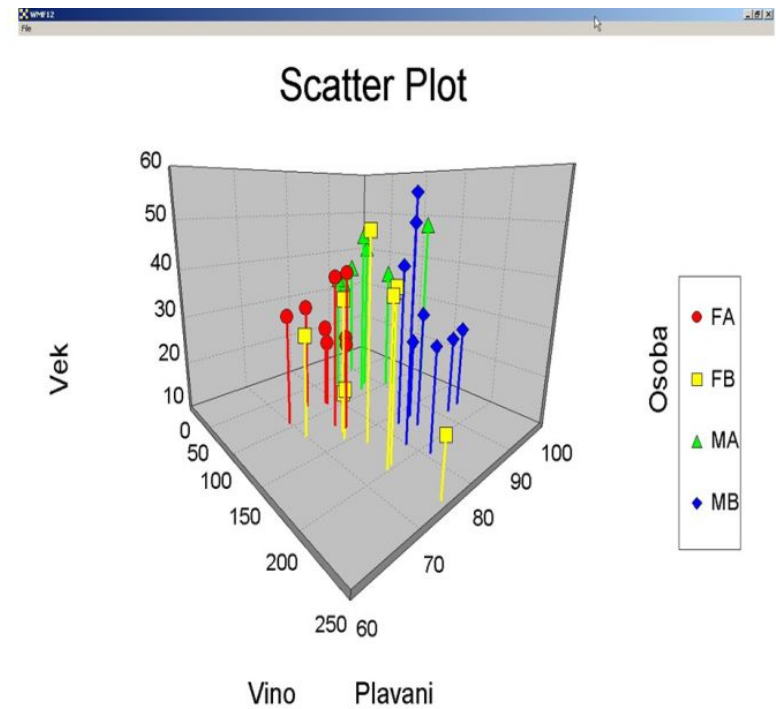
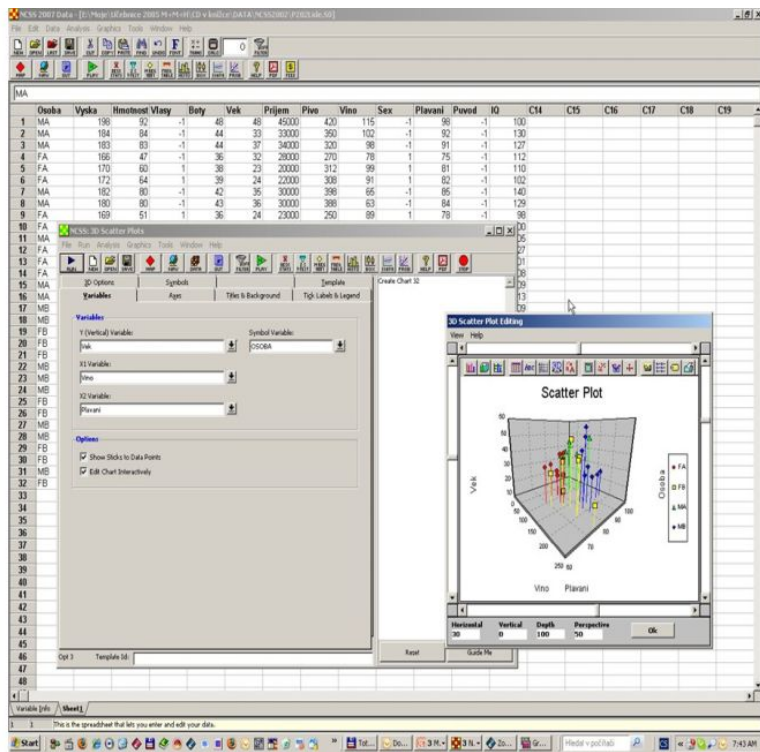
A screenshot of the NCS 2007 Data software interface, similar to the previous one. The 'NCS 3D Scatter Plots' dialog box is shown with 'Y Variable' set to 'Vlna', 'X1 Variable' set to 'Prijem', and 'X2 Variable' set to 'Boty'. Red arrows point to the 'Options' section, specifically to the 'Show Shells to Data Points' and 'Edit Colors' checkboxes, which are both checked.



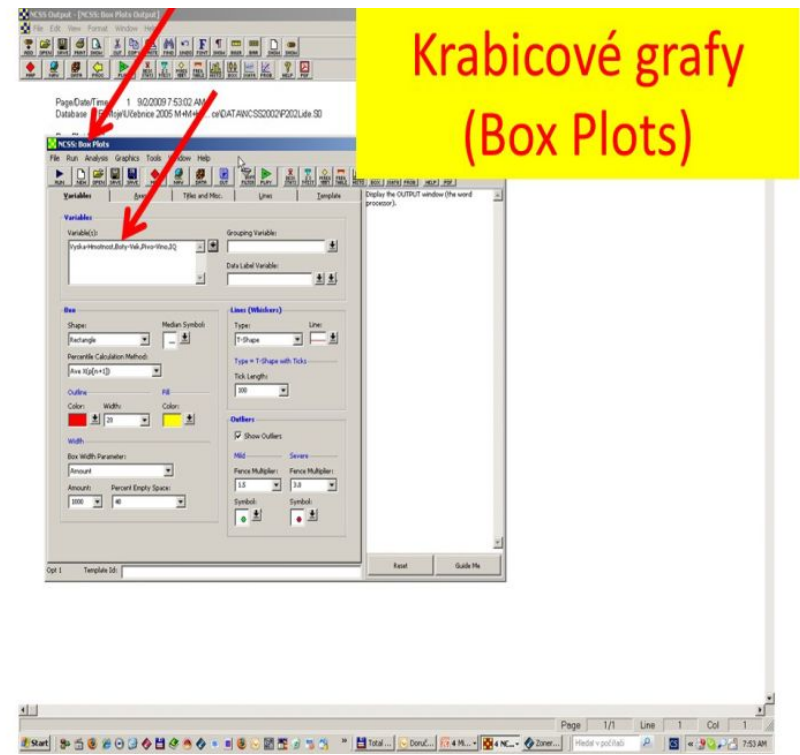
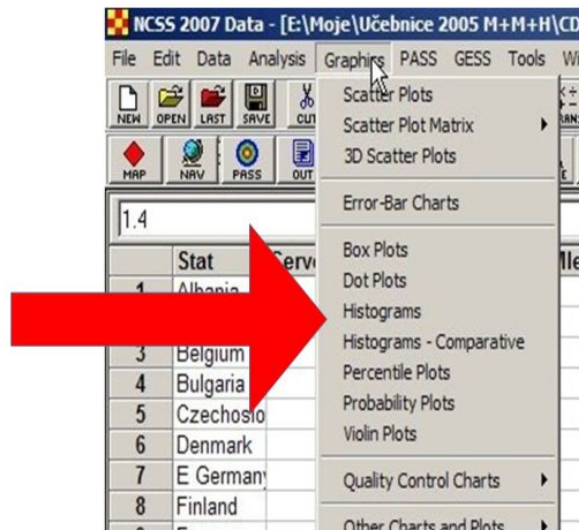


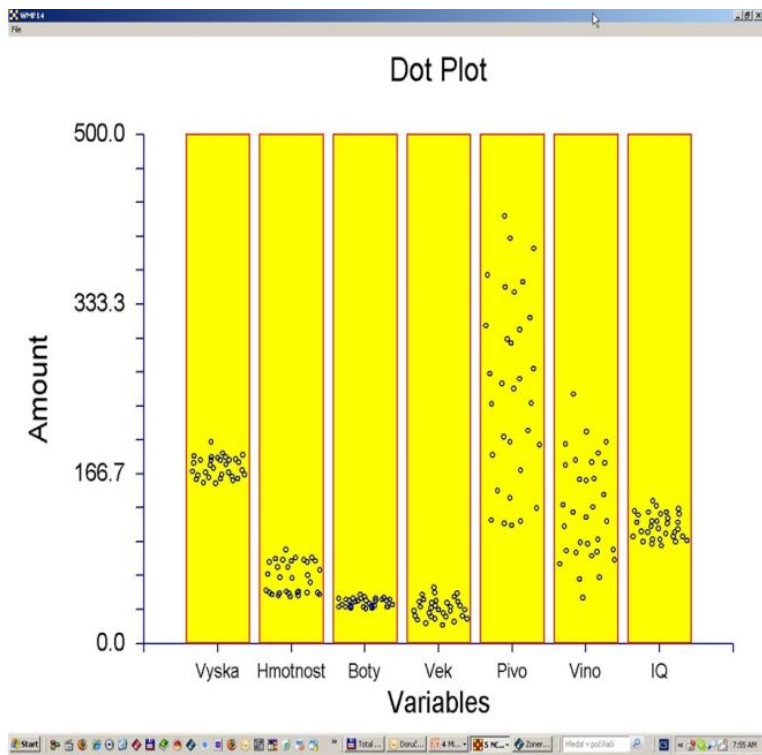
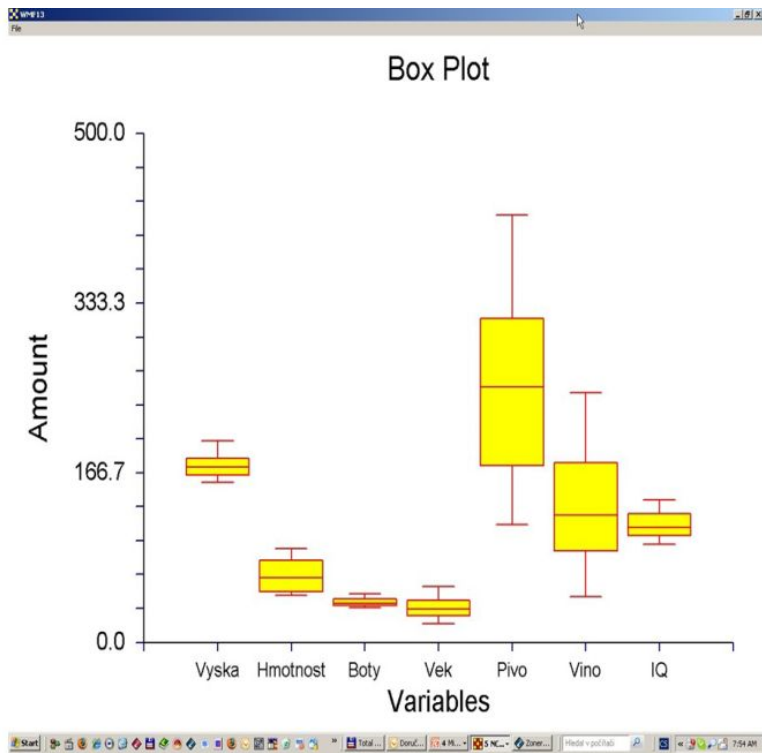
Scatter Plot





EDA grafy



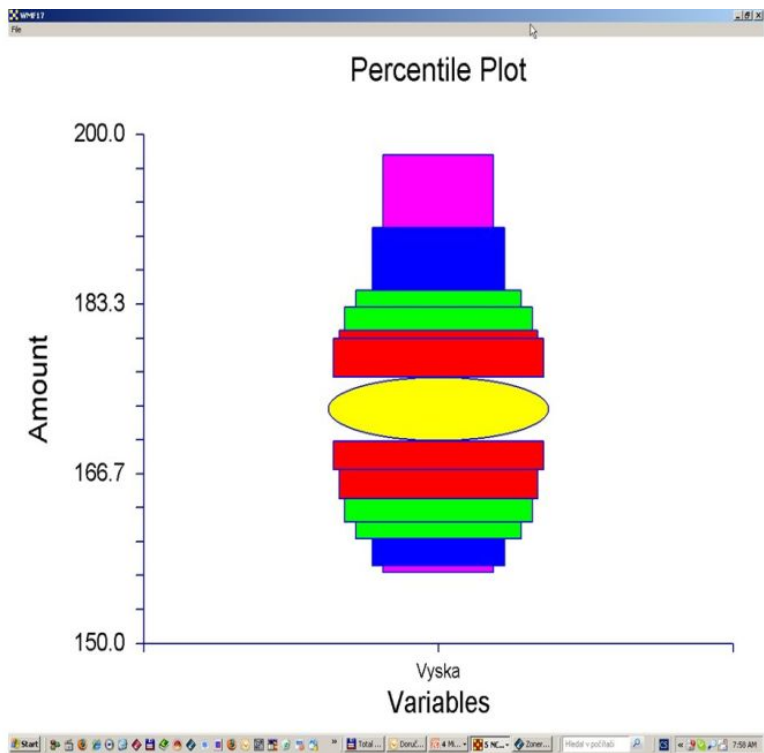
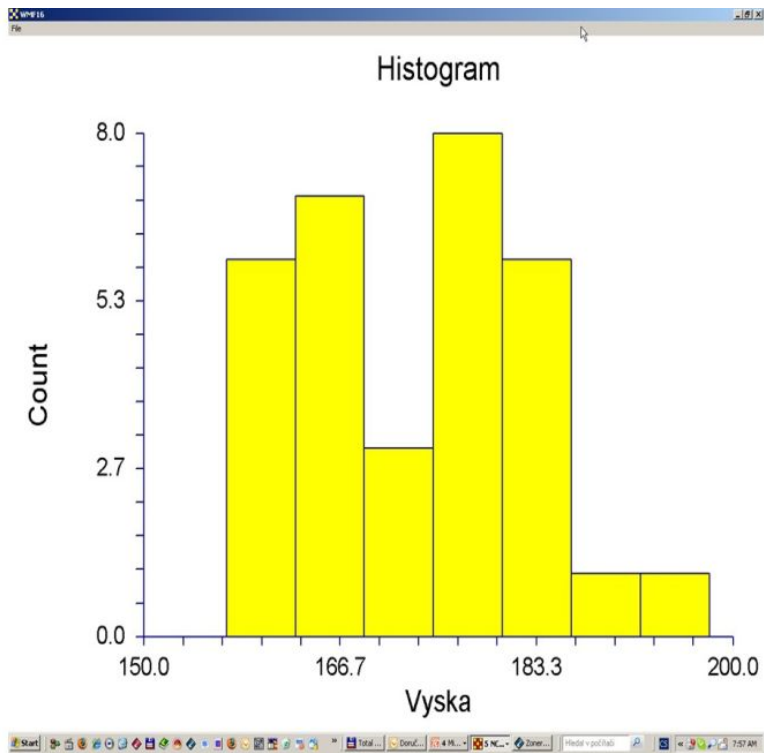


Rozptylové grafy (Dot Plots)

This screenshot shows the Minitab 'Dot Plot' dialog box. The 'Variables' list contains 'Vyska#Hmotnost#Boty#Vek#Pivo#Vino#IQ'. The 'Dot Plot Data' section is set to 'Textured Dots'. The 'Dot Plot Boxes' section is set to 'Outline' with 'Color' as red and 'Width' as 20. A yellow callout box with red text points to the 'Dot Plot' button in the software interface.

Histogramy (Histograms)

This screenshot shows the Minitab 'Histogram' dialog box. The 'Variable' list contains 'Vyska'. The 'Specify Number of Bars Using' section is set to 'Automatic'. The 'Histogram' section is set to 'Display Types' as 'Outline and Fill' with 'Bar Fill Color' as yellow. A yellow callout box with red text points to the 'Histogram' button in the software interface.



Percentilové grafy (Percentile Plots)

Variables: Vyska

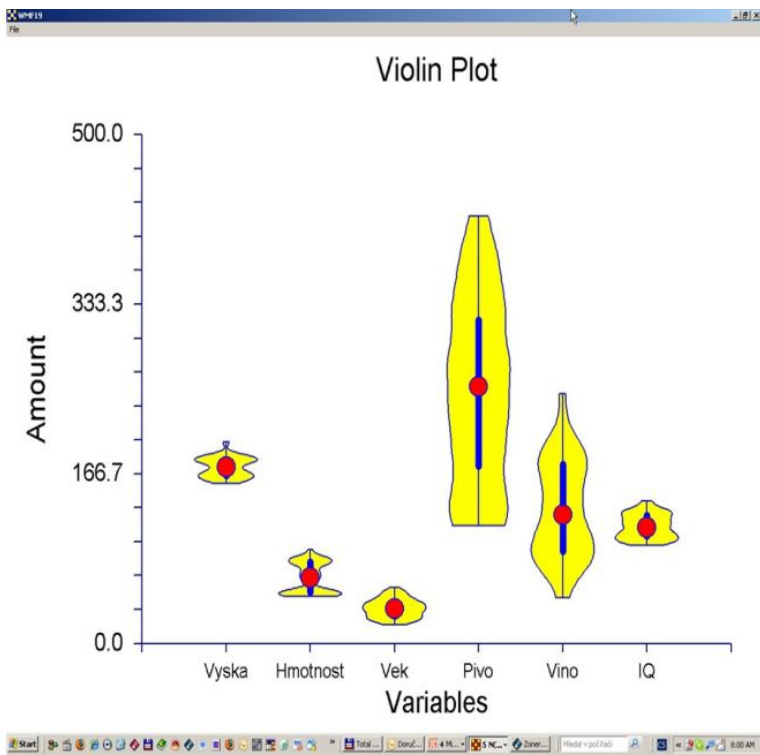
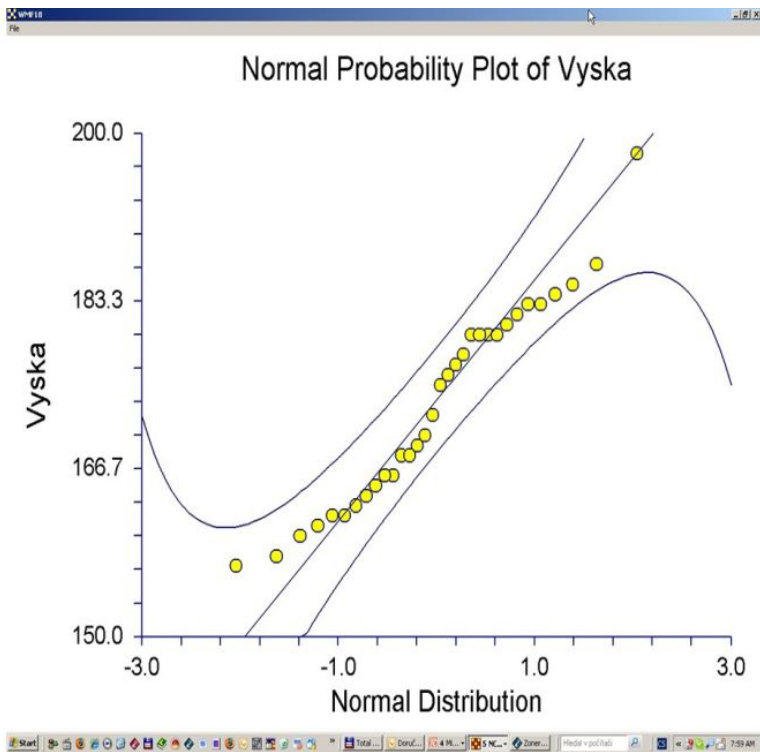
Percentiles: 99-100, 95-99, 90-95, 85-90, 75-85, 65-75, 45-65, 35-45, 25-35, 15-25, 10-15, 5-10, 2-5, 0-2

Plot Options: Percentile Type: Ave (Qn+1), Lines, Median, Outlier, Connecting, Box Width, Select Width Parameter: Percent Empty Space, Amount: 1000, Percent Empty Space: 0

Rankitový graf (Normal Probability Plot)

Variables: Vyska

Options: Distribution: Normal, Shape Parameter (Gamma): 1, Percentile Offset: 4.000000, X Axis Scaling: Quantiles



Houslový graf (Violin Plots)

This screenshot shows the SPSS 'Violin Plots' dialog box. The 'Variable(s)' field contains 'Pivo+Hmotnost+Vek+Vino+IQ'. The 'Density Trace' section is configured with 'Number of Calculation Points' set to 100 and 'Percent of Data in Calculation' set to 40. The 'Violin Width' section has 'Amount' selected as the 'Select Violin Width Parameter'.

Výpočet korelační matice

Osoba	Vyska	Hmotnost	Vlasy	Boty	Vek	Prjem	Pivo	Vino	Sex	Plavani	Puvod	IQ	C14
1	MA	198	92	-1	48	45000	420	115	-1	98	-1	100	
2	MA	184	84	-1	44	33000	350	102	-1	92	-1	130	
3	MA	183	83	-1	44	34000	320	98	-1	91	-1	127	
4	FA	166	47	-1	36	28000	270	78	1	75	-1	112	
5	FA	170	60	1	38	23000	312	99	1	81	-1	110	
6	FA	172	64	1	39	24000	308	91	1	82	-1	102	
7	MA	182	80	-1	42	35000	398	65	-1	85	-1	140	
8	MA	180	80	-1	43	36000	388	63	-1	84	-1	129	
9	FA	169	51	1	36	24000	250	89	1	78	-1	98	
10	FA	168	52	1	37	27000	260	86	1	78	-1	100	
11	MA	183	81	-1	42	37000	345	45	-1	90	-1	105	
12	FA	157	47	1	36	32000	235	92	1	70	-1	127	
13	FA	164	50	1	38	41000	255	134	1	76	-1	101	
14	FA	162	49	1	37	40000	265	124	1	75	-1	108	
15	MA	180	82	-1	44	37000	355	82	-1	88	-1	109	
16	MA	180	81	-1	44	42000	362	90	-1	86	-1	113	
17	MB	185	82	-1	45	26000	295	180	-1	92	1	109	
18	MB	187	84	-1	46	27000	299	178	-1	95	1	119	
19	FB	168	50	1	37	49000	170	162	1	76	1	135	
20	FB	166	49	1	36	21000	150	245	1	75	1	123	
21	FB	158	46	1	34	30000	120	120	1	70	1	119	
22	MB	177	65	-1	41	26000	209	160	-1	86	1	120	
23	MB	180	72	-1	43	33000	236	175	-1	85	1	115	
24	MB	181	75	-1	43	42000	198	161	-1	83	1	105	
25	FB	163	50	1	36	11000	143	136	1	75	1	102	
26	FB	162	50	1	36	20000	133	146	1	74	1	132	
27	MB	176	68	-1	42	50000	195	177	-1	82	1	96	
28	MB	175	67	1	42	55000	185	187	-1	80	1	105	
29	FB	165	51	1	36	26000	121	129	1	76	1	126	
30	FB	161	48	1	35	41000	116	196	1	75	1	120	
31	MB	178	75	-1	42	30000	203	208	-1	81	1	118	
32	FB	160	48	1	35	40000	118	198	1	74	1	129	

Volba výpočtu korelační matice

NCSS: Correlation Matrix

Variables: Vyska-IQ

Options: Correlation Type: Both, Missing Value Removal: Row Wise

Report Options: Report Format: Short, Variable Names: Names

Correlation Report

Page/Date/Time: 1 3/8/2011 9:00:57 AM
Database: E:\MojeUčebnice 2005 M+M+H\...ce\DATA\NCSS2002\IP301\Iide.S0

Pearson Correlations Section (Row-Wise Deletion)

	Vyska	Hmotnost	Vlasly	Boty	Vek	Prijem
Vyska	1.000000	0.959663	-0.820814	0.960896	0.241055	0.301097
Hmotnost	0.959663	1.000000	-0.833920	0.969118	-0.254231	0.335403
Vlasly	-0.820814	-0.833920	1.000000	-0.822935	-0.200165	-0.252447
Boty	0.960896	0.969118	-0.822935	1.000000	0.322976	0.354425
Vek	0.241055	0.254231	-0.200165	0.322976	1.000000	0.884932
Prijem	0.301097	0.335403	-0.252447	0.354425	0.884932	1.000000
Pivo	0.715019	0.738235	-0.596472	0.696959	0.128175	0.417045
Vino	-0.138053	-0.196827	0.164854	-0.088845	0.026822	-0.296704
Sex	-0.877640	-0.917521	0.875000	-0.920710	-0.353624	-0.323559
Plavani	0.962115	0.937147	-0.772309	0.932730	0.158410	0.251769
Puvod	-0.176791	-0.215273	0.125000	-0.154810	-0.046705	-0.451560
IQ	-0.121683	-0.033842	-0.026100	-0.120194	-0.077667	-0.106683

Cronbachs Alpha = 0.009797 Standardized Cronbachs Alpha = 0.183244

Výstup programu – Pearsonovy korelační matice

Pearson Correlations Section (Row-Wise Deletion) Pearsonovy korelační koeficienty

	Vyska	Hmotnost	Vlasly	Boty	Vek	Prijem
Vyska	1.000000	0.959663	-0.820814	0.960896	0.241055	0.301097
Hmotnost	0.959663	1.000000	-0.833920	0.969118	0.254231	0.335403
Vlasly	-0.820814	-0.833920	1.000000	-0.822935	-0.200165	-0.252447
Boty	0.960896	0.969118	-0.822935	1.000000	0.322976	0.354425
Vek	0.241055	0.254231	-0.200165	0.322976	1.000000	0.884932
Prijem	0.301097	0.335403	-0.252447	0.354425	0.884932	1.000000
Pivo	0.715019	0.738235	-0.596472	0.696959	0.128175	0.417045
Vino	-0.138053	-0.196827	0.164854	-0.088845	0.026822	-0.296704
Sex	-0.877640	-0.917521	0.875000	-0.920710	-0.353624	-0.323559
Plavani	0.962115	0.937147	-0.772309	0.932730	0.158410	0.251769
Puvod	-0.176791	-0.215273	0.125000	-0.154810	-0.046705	-0.451560
IQ	-0.121683	-0.033842	-0.026100	-0.120194	-0.077667	-0.106683

Cronbachs Alpha = 0.009797 Standardized Cronbachs Alpha = 0.183244

Pearson Correlations Section (Row-Wise Deletion)

	Pivo	Vino	Sex	Plavani	Puvod	IQ
Vyska	0.715019	-0.138053	-0.877640	0.962115	-0.176791	-0.121683
Hmotnost	0.738235	-0.196827	-0.917521	0.937147	-0.215273	-0.033842
Vlasly	-0.596472	0.164854	0.875000	-0.772309	0.125000	-0.026100
Boty	0.696959	-0.088845	-0.920710	0.932730	-0.154810	-0.120194
Vek	0.128175	0.026822	-0.353624	0.158410	-0.046705	-0.077667
Prijem	0.417045	-0.296704	-0.323559	0.251769	-0.451560	-0.106683
Pivo	1.000000	-0.654480	-0.536895	0.725097	-0.771699	-0.107390
Vino	-0.654480	1.000000	0.025017	-0.165609	0.837102	0.067644
Sex	-0.536895	0.025017	1.000000	-0.815697	0.000000	0.010440
Plavani	0.725097	-0.165609	-0.815697	1.000000	-0.216941	-0.116322
Puvod	-0.771699	0.837102	0.000000	-0.216941	1.000000	0.161819
IQ	-0.107390	0.067644	0.010440	-0.116322	0.161819	1.000000

Cronbachs Alpha = 0.009797 Standardized Cronbachs Alpha = 0.183244

Spearman Correlations Section (Row-Wise Deletion) Spearmanovy korelační koeficienty

	Vyska	Hmotnost	Vlasly	Boty	Vek	Prijem
Vyska	1.000000	0.959555	-0.823506	0.931243	0.176249	0.209463
Hmotnost	0.959555	1.000000	-0.762857	0.947880	0.215014	0.274173
Vlasly	-0.823506	-0.762857	1.000000	-0.785390	-0.230362	-0.220259
Boty	0.931243	0.947880	-0.785390	1.000000	0.303082	0.332417
Vek	0.176249	0.215014	-0.230362	0.303082	1.000000	0.900083
Prijem	0.209463	0.274173	-0.220259	0.332417	0.900083	1.000000
Pivo	0.712792	0.706877	-0.595683	0.726175	0.105669	0.339664
Vino	-0.166636	-0.175342	0.182766	-0.117238	0.024766	-0.238738
Sex	-0.867562	-0.867961	0.875000	-0.874173	-0.355705	-0.321917
Plavani	0.968895	0.962067	-0.787532	0.931953	0.191077	0.245330
Puvod	-0.189779	-0.213600	0.125000	-0.218543	-0.071141	-0.416798
IQ	-0.095343	-0.092630	-0.030492	-0.132906	-0.080709	-0.157329

Spearman Correlations Section (Row-Wise Deletion)

	Pivo	Vino	Sex	Plavani	Puvod	IQ
Vyska	0.712792	-0.166636	-0.867562	0.968895	-0.189779	-0.095343
Hmotnost	0.706877	-0.175342	-0.867961	0.962067	-0.213600	-0.092630
Vlasly	-0.595683	0.182766	0.875000	-0.787532	0.125000	-0.030492
Boty	0.726175	-0.117238	-0.874173	0.931953	-0.218543	-0.132906
Vek	0.105669	0.024766	-0.355705	0.191077	-0.071141	-0.080709
Prijem	0.339664	-0.238738	-0.321917	0.245330	-0.416798	-0.157329
Pivo	1.000000	-0.670821	-0.521223	0.732540	-0.778450	-0.118154
Vino	-0.670821	1.000000	0.020307	-0.194302	0.846141	0.090267
Sex	-0.521223	0.020307	1.000000	-0.841844	0.000000	0.010164
Plavani	0.732540	-0.194302	-0.841844	1.000000	-0.237617	-0.134971
Puvod	-0.778450	0.846141	0.000000	-0.237617	1.000000	0.179563
IQ	-0.118154	0.090267	0.010164	-0.134971	0.179563	1.000000

