***КУРСОВА РАБОТА ПО***

***СТАТИСТИЧЕСКИ СОФТУЕР***

***Катерина Ангелова Митева***

***Специалност : Бизнес математика***

***3 курс , факултетен номер : 1201231004***

**Задача : Използваме произволно избран файл от произволно избрана библиотека от статистическия софтуер, с който работим.**

1. **Взимаме файл stpeuro от библиотеката stpsamples :**

**proc** **contents** data=stpsamp.stpeuro;

**run**; **/\* Виждаме съдържанието на избрания файл /**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **The CONTENTS Procedure** |

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| Data Set Name | STPSAMP.STPEURO | Observations | 53 |
| --- | --- | --- | --- |
| Member Type | DATA | Variables | 8 |
| Engine | BASE | Indexes | 0 |
| Created | 06/12/2013 21:34:27 | Observation Length | 112 |
| Last Modified | 06/12/2013 21:34:27 | Deleted Observations | 0 |
| Protection |   | Compressed | NO |
| Data Set Type |   | Sorted | NO |
| Label | Demographic data published by U.S. Government. Supplied for sample purposes only. |   |   |
| Data Representation | SOLARIS\_X86\_64, LINUX\_X86\_64, ALPHA\_TRU64, LINUX\_IA64 |   |   |
| Encoding | us-ascii ASCII (ANSI) |   |   |

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| **Engine/Host Dependent Information** |
| --- |
| Data Set Page Size | 65536 |
| Number of Data Set Pages | 1 |
| First Data Page | 1 |
| Max Obs per Page | 584 |
| Obs in First Data Page | 53 |
| Number of Data Set Repairs | 0 |
| Filename | /pbr/sfw/sas/940/SASFoundation/9.4/samples/inttech/stpeuro.sas7bdat |
| Release Created | 9.0401M0 |
| Host Created | Linux |
| Inode Number | 1573879 |
| Access Permission | rw-r--r-- |
| Owner Name | odaowner |
| File Size (bytes) | 131072 |

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| **Alphabetic List of Variables and Attributes** |
| --- |
| **#** | **Variable** | **Type** | **Len** | **Format** | **Label** |
| 5 | birth | Num | 8 |   | Birth Rate |
| 1 | country | Char | 50 |   | Country |
| 6 | death | Num | 8 |   | Death Rate |
| 3 | growth | Num | 8 | PERCENT7.2 | Growth Rate |
| 4 | id | Num | 8 |   | Country |
| 7 | imm | Num | 8 |   | Net Immigration Rate |
| 8 | lifeexp | Num | 8 |   | Life Expectancy |
| 2 | pop | Num | 8 | COMMA11. | Population |

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**data** work.myeuro;

set stpsamp.stpeuro;

**run**; **/\* Записваме файла в work директорията /**

**proc** **sort** data=work.myeuro;

by id;

**run**; **/\* Сортираме данните от променливата id /**

**proc print** data=work.myeuro;

**run**;

1. **Взимаме файл stpsale от библиотеката stpsamples :**

**proc** **copy** in=stpsamp out=work;

select stpsale;

**run**;

 **/\* Копираме файла от библиотеката stpsamples в библиотеката work /**

**proc** **means** data=stpsale;

**run**; **/\* Пресмятаме средното, стандартното отклонение,минимума,максимума /**

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| **The Means proc means data=stpsale**  |

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| **The MEANS Procedure** |

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| **Variable** | **N** | **Mean** | **Std Dev** | **Minimum** | **Maximum** |
| --- | --- | --- | --- | --- | --- |
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| --- |
| pop |
| quantity |
| amount |

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| --- |
| 66 |
| 66 |
| 66 |

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| --- |
| 371772.73 |
| 551.4545455 |
| 12380.53 |

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|  |
| --- |
| 331059.41 |
| 269.0839836 |
| 6176.29 |

 |

|  |
| --- |
| 25000.00 |
| 150.0000000 |
| 3000.00 |

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| --- |
| 932000.00 |
| 895.0000000 |
| 22375.00 |

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**proc** **means** data=stpsale mean median min max maxdec=**2**;

**run**; **/\* Пресмятаме средното , медианата , минимума и максимума , но без номер отпред и закръгляме до втори знак след десетичната запетая./**

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| **The Means proc means data=stpsale**  |

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| **The MEANS Procedure** |

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| **Variable** | **Mean** | **Median** | **Minimum** | **Maximum** |
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| pop |
| quantity |
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| 371772.73 |
| 551.45 |
| 12380.53 |

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| 292500.00 |
| 662.50 |
| 14750.00 |

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| 25000.00 |
| 150.00 |
| 3000.00 |

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| 932000.00 |
| 895.00 |
| 22375.00 |

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**proc** **freq** data=stpsale;

tables region citysize;

**run**; **/\* Пресмятаме честотните разпределения, кумулативна честота и кумулативен процент за променливите region и citysize /**

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| **The FREQ Procedure** |

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| **region** | **Frequency** | **Percent** | **CumulativeFrequency** | **CumulativePercent** |
| --- | --- | --- | --- | --- |
| NC | 15 | 22.73 | 15 | 22.73 |
| NE | 18 | 27.27 | 33 | 50.00 |
| SO | 15 | 22.73 | 48 | 72.73 |
| WE | 18 | 27.27 | 66 | 100.00 |

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| **citysize** | **Frequency** | **Percent** | **CumulativeFrequency** | **CumulativePercent** |
| --- | --- | --- | --- | --- |
| L | 21 | 31.82 | 21 | 31.82 |
| M | 24 | 36.36 | 45 | 68.18 |
| S | 21 | 31.82 | 66 | 100.00 |

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**proc** **freq** data=stpsale;

 tables region citysize /nocum;

**run**; **/\* Пресмятаме честотните разпределения без кумулативните честота и процент за същите променливи /**

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| **The Means proc means data=stpsale**  |

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| **The FREQ Procedure** |

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|

| **region** | **Frequency** | **Percent** |
| --- | --- | --- |
| NC | 15 | 22.73 |
| NE | 18 | 27.27 |
| SO | 15 | 22.73 |
| WE | 18 | 27.27 |

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|

| **citysize** | **Frequency** | **Percent** |
| --- | --- | --- |
| L | 21 | 31.82 |
| M | 24 | 36.36 |
| S | 21 | 31.82 |

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1. **Създаваме таблица с име people в библиотеката work и две променливи EGN и size :**

**data** work.people;

input EGN $ size $;

datalines;

 8502041254 small

8412100112 big

8602011223 big

4501021425 small

4612011425 small

9301145635 big

9407157570 small

8803142544 small

5212014556 big

9306047614 big

;

**run**;

85020412 small

84121001 big

86020112 big

45010214 small

46120114 small

93011456 big

94071575 small

88031425 small

52120145 big

93060476 big

**proc** **print** data=people;

**run**; **/\* Принтираме данните от направената таблица \*/**

| **Obs** | **EGN** | **size** |
| --- | --- | --- |
| 1 | 85020412 | small |
| 2 | 84121001 | big |
| 3 | 86020112 | big |
| 4 | 45010214 | small |
| 5 | 46120114 | small |
| 6 | 93011456 | big |
| 7 | 94071575 | small |
| 8 | 88031425 | small |
| 9 | 52120145 | big |
| 10 | 93060476 | big |

1. **Взимаме файла cars от библиотеката sashelp :**

goptions reset=all

 **/\* Възстановяваме всички опции за графика на техните стойности по подразбиране\*/**

ftext='Times'

htext=**1.0**

ftitle='arial/bo'

htitle=**1.5**

colors=(orange);

title "Distribution of Cars horsepower";

**proc** **gchart** data=sashelp.Cars;

 vbar horsepower; **/\* чертаем вертикална графика за количествената променлива horsepower с оранжев цвят и запълнена. \*/**

**run**;

**quit**;

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| **Distribution of Cars horsepower**  |

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| img0.png |

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ftext='Times'

htext=**1.0**

ftitle='arial/bo'

htitle=**1.5**

colors=(black);

title "Distribution of Cars cylinders";

pattern value=empty;

**proc** **gchart** data=sashelp.cars;

 vbar cylinders; **/\* чертаем вертикална графика за количествената променлива cylinders с черен цвят и не запълнена. \*/**

**run**;

**quit**;

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| **Distribution of cars cylinders**  |

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| img0.png |

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title "Creating a Pie chart";

goptions colors=(red);

**proc** **gchart** data=sashelp.Cars;

 pie mpg\_city; **/\* чертаем пай графика за количествената променлива mpg\_city в червен цвят. \*/**

**run**;

**quit**;

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| **Creating a Pie chart**  |

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title "Creating a Pie Chart";

goptions colors=(green);

**proc** **gchart** data=sashelp.cars;

 pie3D enginesize; **/\* чертаем 3D пай графика за количествената променлива enginesize в зелен цвят. \*/**

**run**;

**quit**;

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| **Creating a Pie Chart**  |

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goptions reset=all

ftext='Times'

htext=**1.0**

ftitle='arial/bo'

htitle=**1.5**

colors=(blue);

title "Distribution of Cars weight";

**proc** **gchart** data=sashelp.cars;

 **hbar3D weight; /\* чертаем 3D вертикална графика за променливата weight в син цвят. \*/**

**run**;

**quit;**

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| **Distribution of Cars weight**  |

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| img0.png |

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title "Scatter Plot of weight by enginesize";

goptions colors=(blue);

**proc** **gplot** data=sashelp.cars;

 plot weight \* enginesize ;

**run**; **/\* чертаем графика за променливите weight и enginesize , в която данните да са изобразени по подразбиране в син цвят. \*/**

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| **Scatter Plot of weight by enginesize**  |

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title "Scatter Plot of weight by cylinders";

title2 h=**1.2** "Interpolation Methods";

goptions colors=(green);

symbol value=dot interpol=join width=**2**;

**proc** **gplot** data=sashelp.cars;

 plot weight \* cylinders; **/\* чертаем графика за променливите weight и cylinders, в която данните да са свързани с чертичка с зелен цвят. \*/**

**run**;

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| **Scatter Plot of weight by cylinders**  |
| **Interpolation Methods**  |

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**proc** **sort** data=sashelp.cars out=cars;

 by horsepower;

**run**; **/\* сортираме данните по horsepower \*/**

title "Scatter Plot of Weight by enginesize";

goptions reset=all;

symbol value=dot;

goptions colors=(red);

**proc** **gplot** data=sashelp.cars;

 plot weight \* enginesize;

**run**;

**quit**; **/\* чертаем графика за променливите weight и enginesize, в която данните са показани с удебелена точка и не са свързани помежду си с червен цвят. \*/**



title "Scatter Plot of invoice by cylinders";

goptions reset=all;

**proc** **gplot** data=sashelp.cars;

 plot invoice \* cylinders;

**run**;

**quit**; **/\* чертаем графика за променливите invoice и cylinders, в която данните са изобразени по подразбиране в син цвят. \*/**



goptions reset=all;

title "Scatter Plot of Weight by invoice";

title2 h=**2.2** " Interpolation methods";

symbol value=dot interpol=join;

goptions colors=(black);

**proc** **gplot** data=sashelp.cars;

 plot weight \* invoice;

**run**;

**quit**; **/\* чертаем графика с променливите weight и invoice в която данните са показани с удебелена точка и свързани помежду си с тънка линия в черен цвят.\*/**

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| **Scatter Plot of Weight by invoice**  |
| **Interpolation methods**  |

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| img0.png |

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title "Scatter Plot of wheelbase by mpg\_highway";

title2 h=**1.2** "Interpolation Methods";

goptions colors=(red);

symbol value=dot interpol=join width=**2**;

**proc** **gplot** data=cars;

 plot wheelbase \* mpg\_highway;

**run**; **/\* чертаем графика за променливите weight и horsepower, в която данните са показани с удебелена точка и свързани помежду си с дебела линия в червен цвят. \*/**

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| **Scatter Plot of wheelbase by mpg\_highway**  |
| **Interpolation Methods**  |

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