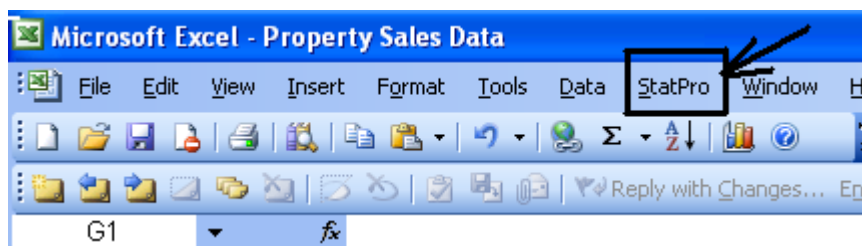


Task 3: Exploring how the Property Market is performing (2)

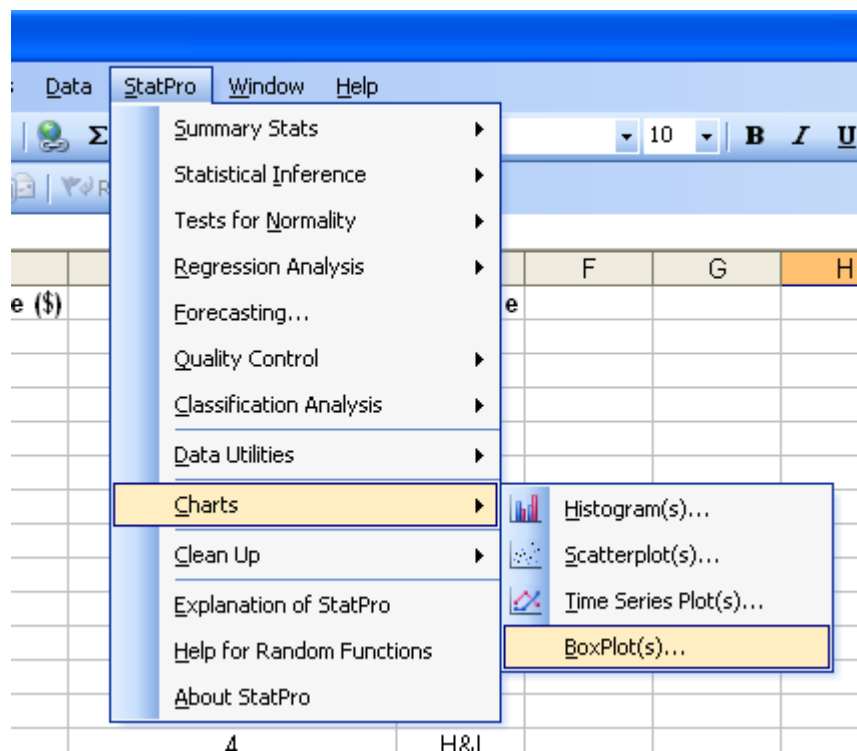
- **Comparing the median Selling Prices using boxplots**
(Instruction for StatPro + Excel)

In this task we investigate the changes in the median selling prices of the North Shore properties between 1999 and 2007, using boxplots.

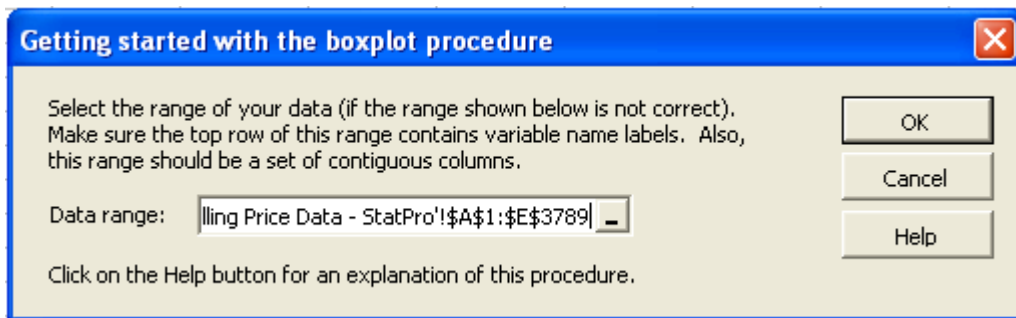
Before starting the tasks below, make it sure that StatPro is added to Excel. If StatPro is added to Excel, you can see **StatPro** listed on the menu. If not, you need to ask your teacher to add StatPro to Excel.



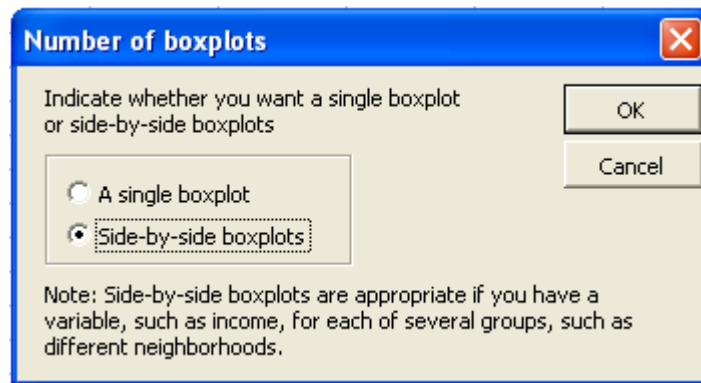
- (1) Insert a new worksheet and name it as "Selling Price Data - StatPro".
- (2) Copy and paste the Year, Suburb, Selling Price (\$), Number of Bedrooms and Type variables from the "North Shore 99-07" worksheet to the "Selling Price Data - StatPro" worksheet.
- (3) Click on an empty cell on the the "Selling Price Data - StatPro" worksheet and click **StatPro** in the menu, then **Charts**, and **BoxPlot(s)....**



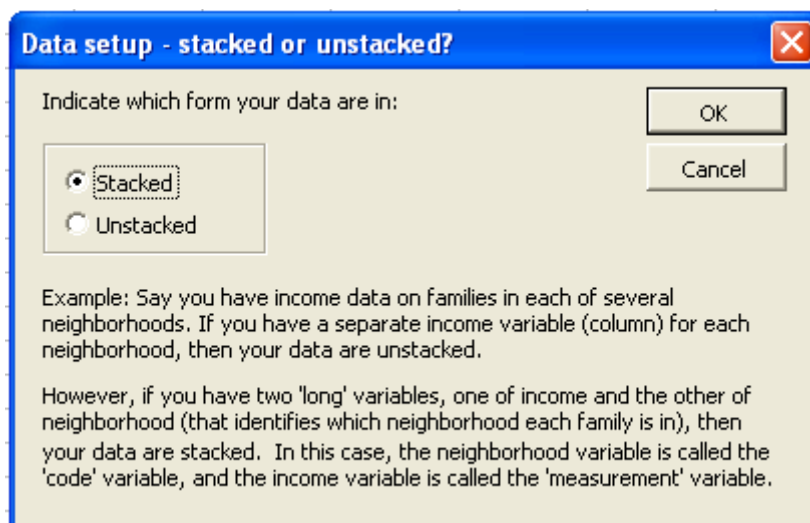
- (4) Select the whole data (five variables including their names) in the **Data range** box and click **OK**.



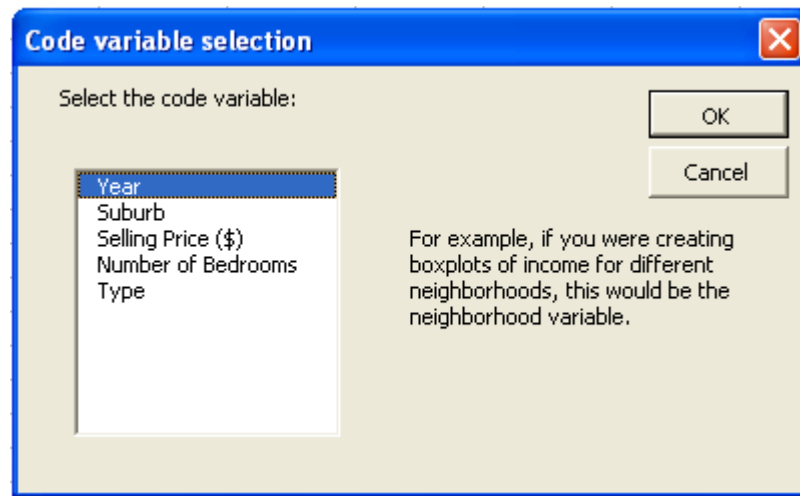
- (5) Click on the **Side-by-side boxplots** option, then click **OK**.



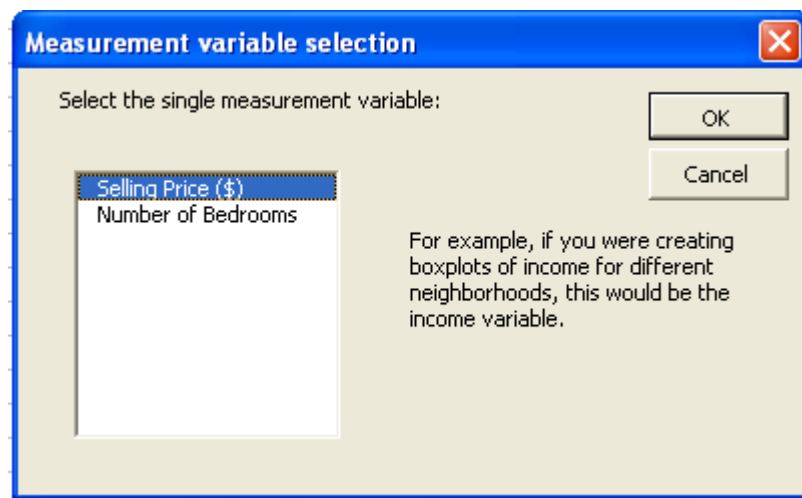
- (6) Click on **Stacked** option and **OK**.



- (7) We first draw a boxplot of Selling Price (\$) grouped by Year. Hence, our **code variable** for this boxplot is Year. Select Year from the list and click **OK**.



- (8) Select **Selling Price (\$)** as the **single measurement variable**, then click **OK**.

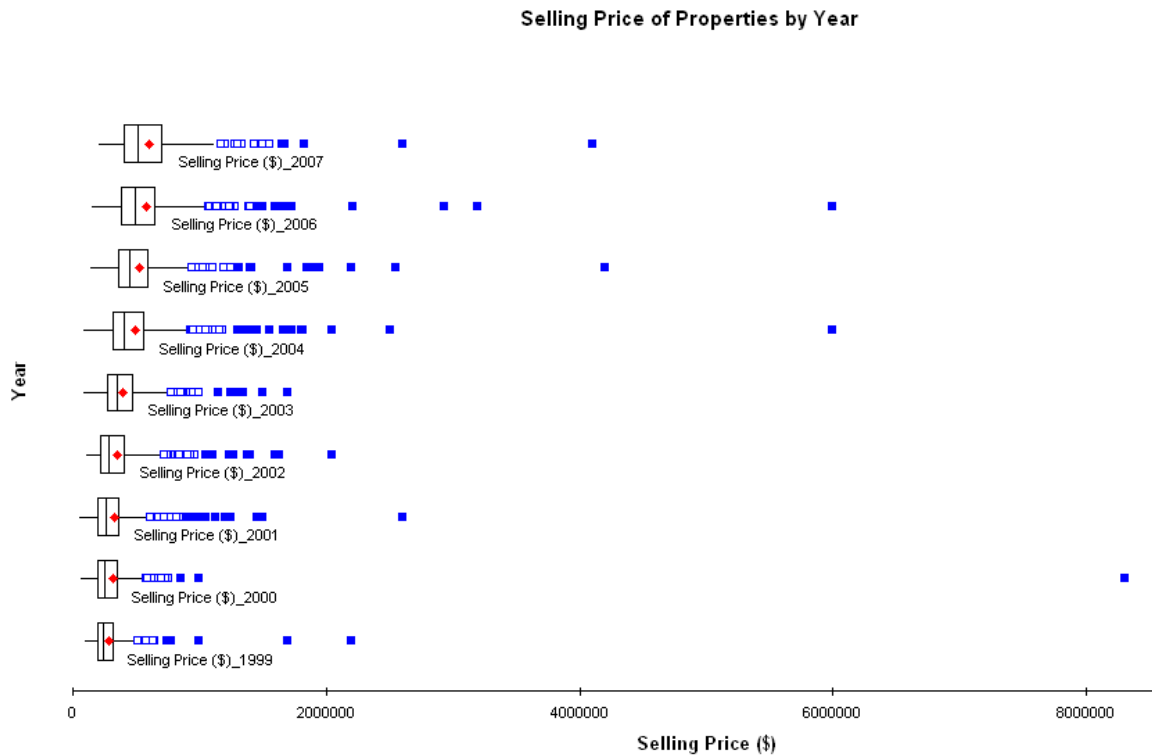


- (9) Now a new worksheet named “Box-Selling Price (\$)ByYear” is automatically inserted, which contains the boxplot shown on the following page.

Right click in the boxplot and choose **Chart Options...** to format the boxplot.

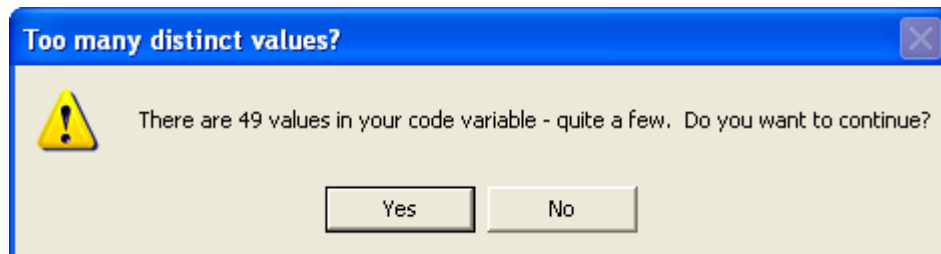
For example, you can add a title and labels to the axes.

- (10) Go back to the “Selling Price Data – StatPro” worksheet and repeat the steps (3) ~ (9) to draw a boxplot of Selling Price (\$) grouped by Type, by choosing **Type** as the **code variable**. This results in another new worksheet named “Box-Selling Price (\$)ByType”.

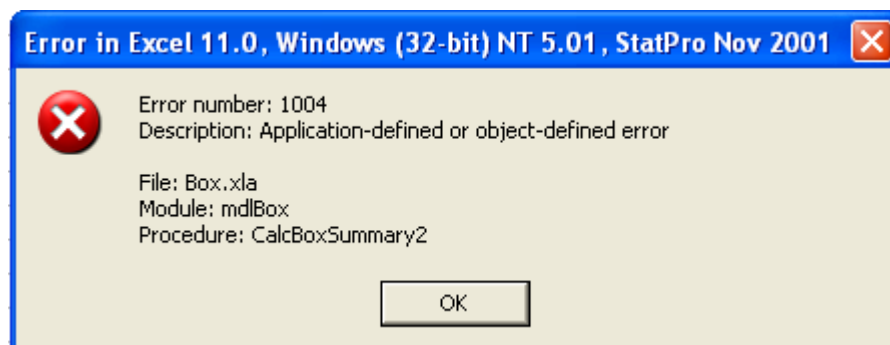


- (11) We next draw a boxplot of Selling Price (\$) grouped by Suburb. However, since there are 49 different suburbs in this data, we cannot draw these 49 boxplots side-by-side as we did in the previous steps.

(If you try, the following dialog appears. If you click **Yes** in this dialog, and proceed as above,



you will receive the following error message. This means that StatPro cannot draw so many boxplots side-by-side. If you receive this error message, simply click on **OK**. It will get you back to the “Selling Price Data – StatPro” worksheet.



(12) Hence, insert a new worksheet and name it as “SellingPricebySuburb – StatPro” and copy and paste the Suburb and Selling Price (\$) variables into the “SellingPricebySuburb – StatPro” worksheet.

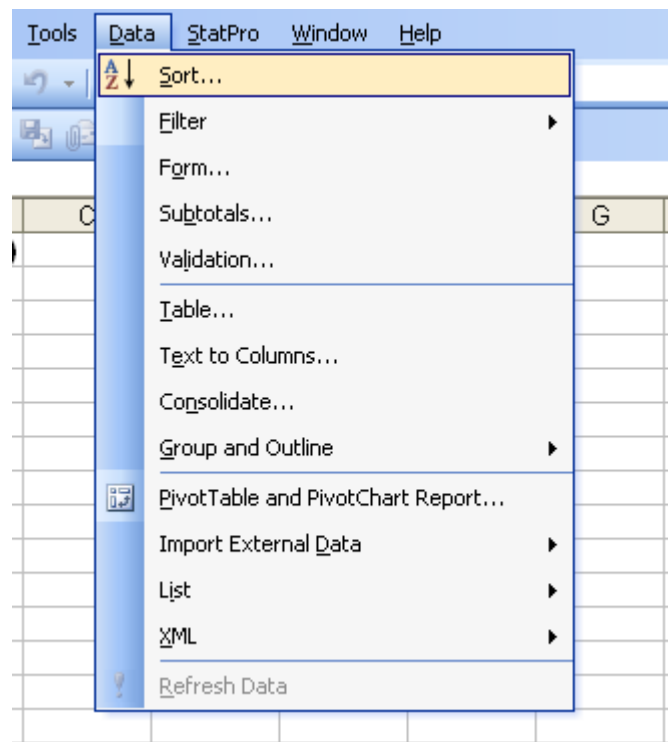
(13) We now need to create a subset of the data, by choosing a small number of suburbs. As an example, here we choose the following five suburbs: Albany, Devonport, Glenfield, Northcote and Takapuna.

Insert a new worksheet and name it as “Suburb Subset – StatPro”. Enter variable names: “Suburb” and “Selling Price (\$)” into the A1 and B1 cells.

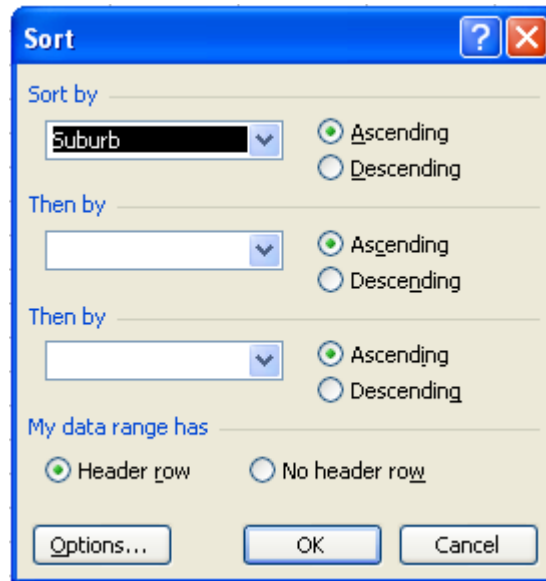
One way to create the above subset is using **Filter** and **AutoFilter**, and then copying and pasting the selected Suburb and Selling Price (\$) values into the “Suburb Subset – StatPro” worksheet. The steps how to use **Filter** and **AutoFilter** are described in **Task 2**.

However, we instead try a simpler way to create the subset in this task.

(14) Go back to the “SellingPricebySuburb – StatPro” worksheet and select the whole “Suburb” and “Selling Price (\$)” columns. Click on **Data** menu and **Sort...** option.



(15) Select **Suburb** in the **Sort by** box and click on **Ascending** option, as shown on the following page. Then, click **OK**.



Now the two columns are sorted by the “Suburb” variable.

- (16) Select the Suburb and Selling Price (\$) values listed as “Albany” (should be 426 of them), then copy and paste them into the “Suburb Subset – StatPro” worksheet. Go back to the “SellingPricebySuburb – StatPro” worksheet and repeat this for Devonport, Glenfield, Northcote and Takapuna to complete the subset.
- (17) Click in an empty cell in the “SellingPricebySuburb – StatPro” worksheet and repeat the steps (3) ~ (9) to draw the boxplot.
- (18) Finally, we draw a boxplot of Selling Price (\$) grouped by Number of Bedrooms.

Since the data contains only one property with 16 bedrooms, and some properties with a missing bedroom number, here we create a subset of the data, which only contains the properties other than those. Repeat the steps (13) ~ (17) to create the subset and draw the boxplot.

Congratulations! You have successfully completed this task.

Do not forget to save all the worksheets you created, as we need to use them later for other tasks.

Name your worksheets appropriately, so that you can recognise them later.