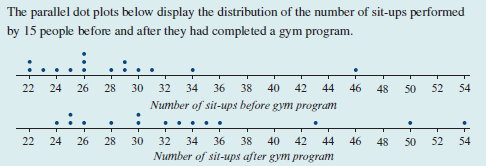
2C – One numerical and one categorical variable

**PARALLEL DOT PLOTS - FINDING THE MEDIAN AND THE IQR FOR EACH EV CATEGORY**

The following data compares the sit-up performance before and after a gym program for 15 people. Find the median and interquartile range for each EV category:

*Does the gym program (“yes” or “no”) affect the number of sit-ups the people can complete?*

EV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RV:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



NOTE: You can use Mathematica to find the median and IQR if you want to.

|  |  |  |
| --- | --- | --- |
|  | Median for sit-ups | IQR for sit-ups |
| Before Gym Program |  |  |
| After Gym Program |  |  |

**WRITE A BRIEF REPORT ABOUT THE DATA IN THE PARALLEL DOT PLOTS**

Fill out the blanks below to create an example of how to write these reports:

*There is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between the number of sit-ups and the completion of the gym*

*program. In this sample of \_\_\_\_\_\_\_ people, the median number of sit-ups before completing the*

*gym program ( \_\_\_\_ ) was lower than the median number of sit-ups after completing the gym*

*program ( \_\_\_\_\_ ). The variablility in the number of sit-ups has increased from IQR = \_\_\_\_*

*before the gym program, to IQR = \_\_\_\_ after the gym program.*

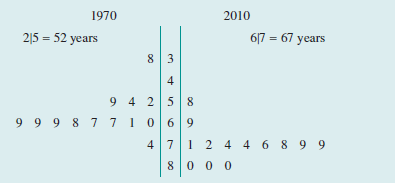
2C – One numerical and one categorical variable

**BACK TO BACK STEM PLOTS – FINDING THE MEDIAN AND THE IQR FOR EACH EV CATEGORY**

The following data displays the distribution of life expectancy for the same 13 countries in 1970 and 2010. Find the median and IQR for each EV category.

*Has life expectancy (years) changed in these countries from 1970 to 2010?*

EV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



|  |  |  |
| --- | --- | --- |
|  | Median for life expectancy | IQR for life expectancy |
| 1970 |  |  |
| 2010 |  |  |

**WRITE A BRIEF REPORT ABOUT THE DATA IN THE BACK TO BACK STEM PLOT**

Fill out the blanks below to create an example of how to write these reports:

*There is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between calendar year and life expectancy. In this sample of*

*\_\_\_\_\_\_\_ countries, the median life expectancy in 1970 ( \_\_\_\_\_\_ years ) was lower than the median*

*life expectancy in 2010 ( \_\_\_\_\_\_ years ). The variability in life expectancy has decreased from*

*1970 (IQR = \_\_\_\_\_\_ years) to 2010 (IQR = \_\_\_\_\_\_ years).*

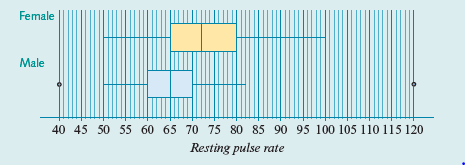
2C – One numerical and one categorical variable

**PARALLEL BOX PLOTS – FINDING THE MEDIAN AND THE IQR FOR EACH EV CATEGORY**

The following data displays the pulse rates (beats per min) for a group of 70 male students and 90 female students. Find the median and IQR for each EV category:

*Does gender (“female” or “male”) affect resting pulse rate?*

EV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



|  |  |  |
| --- | --- | --- |
|  | Median for resting pulse rate | IQR for resting pulse rate |
| Female |  |  |
| Male |  |  |

**WRITE A BRIEF REPORT ABOUT THE DATA IN THE PARALLEL BOX PLOTS**

Fill out the blanks below to create an example of how to write these reports.

* For this example you should also comment on the shape of the two distributions as this is a larger data set
* For this example you should also comment on outliers, as they are shown

*There is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between gender and resting pulse rate. In this sample of*

*\_\_\_\_\_\_\_ people, the median resting pulse rate for females was \_\_\_\_\_\_ bpm and the median*

*resting pulse rate for males was \_\_\_\_\_\_ bpm. Female resting pulse rates (with an IQR of \_\_\_\_\_*

*bpm) were more variable than male resting pulse rates (with an IQR of \_\_\_\_\_\_ bpm). The shape*

*of both the male and female distributions were approximately symmetric. There were two outliers*

*in the data set. One male had a very low resting pulse rate ( \_\_\_ bpm) and one male had a very*

*high resting pulse rate ( \_\_\_\_ bpm).*