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Python Libraries

**Library #2 : xlrd**

The xlrd library is used to retrieve information from an excel spreadsheet. This library makes it easy to traverse the rows, columns and cells of the spreadsheet. It allows you to retrieve information from multiple workbooks and sheets and utilize all the information in one program. This allows you to traverse multiple workbooks compare data with ease. Xlrd also allows you to format excel sheets giving the user the ability to display spreadsheet contents in a PDF file or copy spreadsheet data without losing the primary data.

Any type of data that can be stored in an excel spreadsheet, xlrd can read and retrieve. This makes it useful form many different applications. In the field of education, there are many ways that this library can be utilized. For instance, standardized test data is stored for all states every year in one big database. This library allows to you pull information on scores from different states and compare them. In the case of standardized testing it also allows you to test if there is any missing data. A perfect example is 2020's data. Due to the COVD-19 global pandemic all public schools are closed and all state testing is officially canceled for this school year. This will cause there to be missing data in the standardized testing database for this year. Xlrd gives the ability to see these missing values and even check if there ever was this many missing values for one year in the past. Another example of how this can be used in education is reviewing and analyzing student grades. Xlrd gives the teacher the ability to take a spreadsheet of grades and view different aspects and compare different classes grades and averages.

**Some functions of xlrd:**

Documentation: https://xlrd.readthedocs.io/en/latest/index.html

- ncols(x) : returns the number of columns of spreadsheet x
- nrows(x): returns the number of rows of spreadsheet x
- cell_value(i,j) : returns the data in the cell of row i, column j.
- xlrd.formula.cellname(rowx, colx) : allows you to rename the cell in rowx, colx
- cell_type(rowx, colx) : returns the class type of the cell in rowx, colx
- row_len(rowx) : return the number of cells in a row
- row_types(rowx, start_colx=0, end_colx=None) : returns a slice with the class types of each cell in the row