

# TCES 202 Advanced Programming

## Statistical Package Project

### Phase – III

In this phase, we will complete the project by implementing the compute and report functionalities. We will implement a menu like in the previous phase and provide the capability to compute statistics and report the statistics. Please run the exe files to understand the behavior and examine the output files.

To compute mean, median, variance and standard deviation, please use the reference site at <http://www.mathsisfun.com/data/index.html#stats>. We will use the formulae for Population data instead of Sample data. To compute median, the data values must be sorted. We will go over the qsort function that you can use for this referenced at [https://www-s.acm.illinois.edu/webmonkeys/book/c\\_guide/2.13.html#qsort](https://www-s.acm.illinois.edu/webmonkeys/book/c_guide/2.13.html#qsort)

We will complete the functionality for the Compute and Report Sub-menus by modifying the statpac.c and add the needed functionality in the header files.

StatPac - Statistical Package  
Routines for capturing and storing data, computing statistics, and generating reports

Program

Main Menu	Sub-menus
Compute	Update all Compute mean Compute median Compute variance Compute standard deviation
Report	Display statistics

## Files and Functions

Below is the list of .c files that will be created along with the major functions that will be built into those files.

```
compute.c
    compute_menu() prints a menu of computing options
    compute_update() allows the user to update the computations of all
statistics
    compute_mean() computes the mean value only - displays it and inserts
it into the header record
```

```
compute_median() same for the median - if the file is not sorted, will
sort an internal array of data
compute_variance() same for variance if mean is updated
compute_stdev() same for std. dev if mean and variance are updated.

report.c
report_menu() prints report submenu
report_display() shows statistics report on the screen
```

**Submit your Phase III deliverables as a zip file on Canvas. Each file must have your names and the appropriate documentation in the header and for each function. Use the starter code provided for the header files. You must comply with the naming conventions provided. Please don't submit only .h and .c files.**