Foundations of Parallel Programming Assignment 1 code documentation -2020060

There are 2 directory examples and a library, examples contain all the sample code that will be run and the library contains the header file and the implementation of the api.

In the library directory there are 3 files stamp.h and stamp.cpp and makefile. stamp.h contains declaration of all the 5 functions that user may call and stamp.cpp contains the implementation of these functions.

1. execute_tuple(): this function takes in 2 function pointers and makes 2 threads to execute them via a wrapper function called wrapper().
2. Parallel_for(single for loop with stride):this function takes in pointer to a function, stride, low, high and number of threads and execute the for loop by dividing equally number of interactions per thread that is done using a wrapper function called vect_wrap and data is passed using a struct called vector.

3. Parallel_for(single for loop without stride): same as with stride, in this case the low and stride values are defaulted to 0 and 1 respectively.
4. Parallel_for(double for loop with stride): this function takes in pointer to a function, 2 stride, 2 low, 2 high and number of threads and execute two for loops by dividing equally number of interactions per thread that is done using a wrapper function called mmulti_wrap and data is passed using a struct called multi.
5. parallel_for (double for loop without stride): same as above this case lows and strides are defaulted to 0 and 1 respectively.

Makefile in the library directory object file of stamp.cpp and then turns it into .so file then makes a directory /usr/local/include/para_api and copies stamp.h and stamp.so in it.

In the example folder there are all the files that will test api implementation and makefile. The makefile copies the stamp.h and stamp.so previously copied library and generates executable file by linking stamp.so