Exercise 6

Part 1

Write a program that is capable of generating measurements in order to explore the *Memory Mountain*. Therefore, allocate an array of N bytes in size, and traverse it using an access stride of S, with S = 1 being sequential access.
Vary N and S and measure the time taken for a full pass over the data. Use this time to compute the memory bandwidth that was achieved during that each run. Consider using an initial pass over the data each experiment in order warm up the cache.
Visualize your results using a 3D plot with N and S as the x- and y-axes, and the achieved bandwidth as the function value using a program of your choice. Gnuplot is usually a good choice. Interpret the results. If you can, try to run your program on different processors and compare the results.

Example plot of the Memory Mountain