Reference Strings and Experiments for the Project

You will be given a program called matrix.c that generates the reference string that would result from the multiplication of two matrices A (m x n) and B (n x p). The result is matrix C, an m x p matrix. The program will ask you for the values of m, n, and p, as well as CellSize, the number of bytes of a cell of a matrix, and the page size in bytes.

Matrices A, B, and C are consecutively stored in the address space as shown in the picture below.

```
Matrix A
Matrix B
Matrix C
```

The program will also ask you whether the elements of the matrices are stored in the address space by rows or by columns. If you select a row order scheme, all the elements of the first row will be stored first, followed by all elements of the second row, etc. If you choose column order, all the elements of column 1 are stored first, followed by elements of column 2, etc. The same scheme holds for the three matrices.

The reference string generated by the program matrix.c is a sequence of integers separated by spaces. The absolute value of each number is the number of the virtual page being referenced. A positive number indicates that the page is accessed for read purposes and a negative number indicates that the page is being modified.

The output generated by matrix.c consists of lines of up to 1000 elements of the reference string each. The last line may contain less than 1000 elements. You will be given the program to run and generate the reference string.

**Experiments:**
- m = n = p = 100, row order, CellSize = 8 bytes, PageSize = 256 bytes, RAMSize = 100, 200, ..., 900 pages.
- m = n = p = 100, column order, CellSize = 8 bytes, PageSize = 256 bytes, RAMSize = 100, 200, ..., 900 pages.
- m = n = p = 100, row order, CellSize = 8 bytes, PageSize = 512 bytes, RAMSize = 100, 200, 300, 400 pages.
- m = n = p = 100, column order, CellSize = 8 bytes, PageSize = 512 bytes, RAMSize = 100, 200, 300, 400 pages.