

RESPUESTAS PRACTICA 8

1.

```
marc@marc:~/github/AC/Practica8$ gcc mm-ijk.c tiempo.c -DN=6 -o IJK-EXE6
marc@marc:~/github/AC/Practica8$ gcc mm-jki.c tiempo.c -DN=6 -o JKI-EXE6
marc@marc:~/github/AC/Practica8$ gcc mm-kij.c tiempo.c -DN=6 -o KIJ-EXE6
marc@marc:~/github/AC/Practica8$ ./IJK-EXE6

FORMA ijk

8.345106 8.759226 9.173347 9.587466 10.001586 10.415707
8.633827 9.062347 9.490867 9.919386 10.347906 10.776426
8.922546 9.365466 9.808387 10.251307 10.694226 11.137147
9.211267 9.668587 10.125907 10.583227 11.040546 11.497867
9.499986 9.971707 10.443426 10.915147 11.386866 11.858586
9.788706 10.274826 10.760946 11.247066 11.733186 12.219306
marc@marc:~/github/AC/Practica8$ ./JKI-EXE6

FORMA jki

8.345106 8.759226 9.173347 9.587466 10.001586 10.415707
8.633827 9.062347 9.490867 9.919386 10.347906 10.776426
8.922546 9.365466 9.808387 10.251307 10.694226 11.137147
9.211267 9.668587 10.125907 10.583227 11.040546 11.497867
9.499986 9.971707 10.443426 10.915147 11.386866 11.858586
9.788706 10.274826 10.760946 11.247066 11.733186 12.219306
marc@marc:~/github/AC/Practica8$ ./KIJ-EXE6

FORMA kij

8.345106 8.759226 9.173347 9.587466 10.001586 10.415707
8.633827 9.062347 9.490867 9.919386 10.347906 10.776426
8.922546 9.365466 9.808387 10.251307 10.694226 11.137147
9.211267 9.668587 10.125907 10.583227 11.040546 11.497867
9.499986 9.971707 10.443426 10.915147 11.386866 11.858586
9.788706 10.274826 10.760946 11.247066 11.733186 12.219306
```

2.

N	Tiempo ejecución (en seg.)			MFLOPS		
	mm-ijk	mm-jki	mm-kij	mm-ijk	mm-jki	mm-kij
256	151,338328	153.190002	89.570000	221,72	219,04	374,62
512	4430.606934	5486.039062	783.745972	60,59	48,93	342,5
1024	50297.83203	63097.25391	6294.844238	42,7	34,03	341,15

3.

Estamos aprovechando la localidad espacial de las matrices. En KIJ vemos que es mejor y coincide en cuando se recorren por filas. (Tenemos en cuenta que almenos en C las matrices se ordenan por filas).

4.

```
marc@marc:~/github/AC/Practica8$ ./IJK2-EXE6

FORMA ijk

8.345106 8.759226 9.173347 9.587466 10.001586 10.415707
8.633827 9.062347 9.490867 9.919386 10.347906 10.776426
8.922546 9.365466 9.808387 10.251307 10.694226 11.137147
9.211267 9.668587 10.125907 10.583227 11.040546 11.497867
9.499986 9.971707 10.443426 10.915147 11.386866 11.858586
9.788706 10.274826 10.760946 11.247066 11.733186 12.219306
marc@marc:~/github/AC/Practica8$ ./JKI2-EXE6

FORMA jki

8.345106 8.759226 9.173347 9.587466 10.001586 10.415707
8.633827 9.062347 9.490867 9.919386 10.347906 10.776426
8.922546 9.365466 9.808387 10.251307 10.694226 11.137147
9.211267 9.668587 10.125907 10.583227 11.040546 11.497867
9.499986 9.971707 10.443426 10.915147 11.386866 11.858586
9.788706 10.274826 10.760946 11.247066 11.733186 12.219306
marc@marc:~/github/AC/Practica8$ ./KIJ2-EXE6

FORMA kij

8.345106 8.759226 9.173347 9.587466 10.001586 10.415707
8.633827 9.062347 9.490867 9.919386 10.347906 10.776426
8.922546 9.365466 9.808387 10.251307 10.694226 11.137147
9.211267 9.668587 10.125907 10.583227 11.040546 11.497867
9.499986 9.971707 10.443426 10.915147 11.386866 11.858586
9.788706 10.274826 10.760946 11.247066 11.733186 12.219306
```

5.

N	Tiempo ejecución (en seg.)			MFLOPS		
	mm-ijk	mm-jki	mm-kij	mm-ijk	mm-jki	mm-kij
256	104.365997	137.695999	81.894997	321,51	243,68	409,73
512	3467.237061	5011.466797	661.062012	77,42	53,56	406,07
1024	34967.01172	58589.50000	5399.998535	61,41	36,65	397,68

6.

La mejora no es tan notable pero la hay. Es mas notable en N grandes. Mi conclusión es que el valor que almacena temporal al grabarlo en un registro nos evitamos un acceso a memoria por cada iteración. También aseguramos que ese valor no se sobrescribe al remplazarlo.