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Question: The assignment is to write a program for matrix multiplication. And records the execution time of different loop orders, like **IJK**, **IKJ**, **JKI**, **JKI**, **KIJ**, **KJI**.

```
Size of the matrix: 2000x2000
ijk: 73.969500 seconds
ikj: 37.518000 seconds
jik: 61.551000 seconds
jki: 78.030500 seconds
kij: 37.186000 seconds
kji: 95.405500 seconds

-----
Process exited after 770.5 seconds with return value 0
Press any key to continue . . .
```

Figure 1

```
Size of the matrix: 1000x1000
ijk: 7.380500 seconds
ikj: 4.746500 seconds
jik: 7.159500 seconds
jki: 9.438000 seconds
kij: 4.824000 seconds
kji: 8.786000 seconds

Size of the matrix: 2000x2000
ijk: 76.826500 seconds
ikj: 38.459000 seconds
jik: 67.406000 seconds
jki: 81.595000 seconds
kij: 37.887500 seconds
kji: 72.053500 seconds

-----
Process exited after 835.4 seconds with return value 0
Press any key to continue . . .
```

Figure 2

From the figure1 and figure 2, Each time the execution time are different when I use 2000*2000 because on each elementary on Matrix I've use difference Numbers between **1 to 10 (Random)** For the matrix.

Phonepasuerth Homework matrix Multiplication

Size of the matrix: 4000x4000

ijk: 275.194333 seconds

ikj: 100.815500 seconds

jik: 324.453500 seconds

jki: 289.444667 seconds

kij: 99.812500 seconds

kji: 266.532000 seconds

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Size of the matrix: 500x500

ijk: 0.223 seconds

ikj: 0.194 seconds

jik: 0.215 seconds

jki: 0.233 seconds

kij: 0.192 seconds

kji: 0.225 seconds