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Student ID: 100 140 8665

Output

- svd_power input1.txt 1 10

```
Matrix U:
Row   1:  0.5096
Row   2:  0.3423
Row   3:  0.2466
Row   4:  0.3953
Row   5:  0.1285
Row   6:  0.5451
Row   7:  0.3041

Matrix S:
Row   1:  2.9929

Matrix V:
Row   1:  0.3411
Row   2:  0.4846
Row   3:  0.1703
Row   4:  0.3024
Row   5:  0.0429
Row   6:  0.5683
Row   7:  0.1821
Row   8:  0.1143
Row   9:  0.3966
Reconstruction (U*S*V'):
Row   1:  0.5202  0.7390  0.2597  0.4612  0.0654  0.8667  0.2778  0.1743  0.6049
Row   2:  0.3495  0.4965  0.1745  0.3099  0.0439  0.5823  0.1866  0.1171  0.4064
Row   3:  0.2518  0.3577  0.1257  0.2232  0.0317  0.4195  0.1345  0.0844  0.2928
Row   4:  0.4035  0.5732  0.2015  0.3578  0.0507  0.6723  0.2155  0.1352  0.4692
Row   5:  0.1312  0.1864  0.0655  0.1163  0.0165  0.2186  0.0701  0.0440  0.1526
Row   6:  0.5565  0.7905  0.2778  0.4933  0.0700  0.9271  0.2971  0.1865  0.6470
Row   7:  0.3105  0.4410  0.1550  0.2752  0.0390  0.5172  0.1658  0.1040  0.3610
```

- svd_power input1.txt 1 100

Matrix U:
Row 1: 0.5098
Row 2: 0.3420
Row 3: 0.2465
Row 4: 0.3955
Row 5: 0.1282
Row 6: 0.5452
Row 7: 0.3038

Matrix S:
Row 1: 2.9929

Matrix V:
Row 1: 0.3410
Row 2: 0.4847
Row 3: 0.1703
Row 4: 0.3025
Row 5: 0.0428
Row 6: 0.5683
Row 7: 0.1822
Row 8: 0.1143
Row 9: 0.3967
Reconstruction (U*S*V'):
Row 1: 0.5202 0.7395 0.2599 0.4615 0.0654 0.8670 0.2779 0.1743 0.6052
Row 2: 0.3490 0.4960 0.1743 0.3096 0.0439 0.5816 0.1864 0.1169 0.4060
Row 3: 0.2515 0.3575 0.1256 0.2231 0.0316 0.4192 0.1344 0.0843 0.2926
Row 4: 0.4036 0.5737 0.2016 0.3581 0.0507 0.6727 0.2157 0.1353 0.4696
Row 5: 0.1309 0.1860 0.0654 0.1161 0.0164 0.2181 0.0699 0.0439 0.1522
Row 6: 0.5564 0.7908 0.2779 0.4936 0.0699 0.9273 0.2973 0.1864 0.6473
Row 7: 0.3100 0.4407 0.1549 0.2750 0.0390 0.5167 0.1656 0.1039 0.3607

- svd_power input1.txt 2 10

Matrix U:
Row 1: 0.5096 -0.3027
Row 2: 0.3423 0.5300
Row 3: 0.2466 0.2613
Row 4: 0.3953 -0.4016
Row 5: 0.1285 0.4181
Row 6: 0.5451 -0.2120
Row 7: 0.3041 0.4220

Matrix S:
Row 1: 2.9929 0.0000
Row 2: 0.0000 2.2147

Matrix V:
Row 1: 0.3411 0.7371
Row 2: 0.4846 -0.4131
Row 3: 0.1703 -0.1364
Row 4: 0.3024 -0.3175
Row 5: 0.0429 0.1888
Row 6: 0.5683 0.1983
Row 7: 0.1821 -0.0956
Row 8: 0.1143 0.2395
Row 9: 0.3966 -0.1587

Reconstruction (U*S*V'):
Row 1: 0.0261 1.0160 0.3511 0.6741 -0.0612 0.7338 0.3419 0.0138 0.7113
Row 2: 1.2148 0.0115 0.0144 -0.0629 0.2656 0.8150 0.0744 0.3983 0.2201
Row 3: 0.6784 0.1186 0.0468 0.0395 0.1410 0.5343 0.0791 0.2230 0.2009
Row 4: -0.2521 0.9407 0.3227 0.6402 -0.1172 0.4959 0.3005 -0.0778 0.6104
Row 5: 0.8137 -0.1961 -0.0608 -0.1777 0.1914 0.4022 -0.0184 0.2657 0.0056
Row 6: 0.2104 0.9844 0.3418 0.6424 -0.0187 0.8340 0.3420 0.0740 0.7216
Row 7: 0.9993 0.0549 0.0275 -0.0215 0.2155 0.7025 0.0765 0.3279 0.2127

- svd_power input1.txt 4 100

Matrix U:
Row 1: 0.5098 -0.3014 -0.5931 0.3567
Row 2: 0.3420 0.5308 -0.2658 -0.1579
Row 3: 0.2465 0.2610 0.5642 0.1570
Row 4: 0.3955 -0.4015 0.3596 0.3928
Row 5: 0.1282 0.4180 0.1980 0.4751
Row 6: 0.5452 -0.2116 0.2513 -0.6618
Row 7: 0.3038 0.4226 -0.1662 -0.0723

Matrix S:
Row 1: 2.9929 0.0000 0.0000 0.0000
Row 2: 0.0000 2.2147 0.0000 0.0000
Row 3: 0.0000 0.0000 1.6335 0.0000
Row 4: 0.0000 0.0000 0.0000 1.3586

Matrix V:
Row 1: 0.3410 0.7371 0.2022 0.2958
Row 2: 0.4847 -0.4129 0.0109 0.0645
Row 3: 0.1703 -0.1361 -0.3631 0.2625
Row 4: 0.3025 -0.3174 -0.1430 0.5516
Row 5: 0.0428 0.1887 0.1212 0.3497
Row 6: 0.5683 0.1988 -0.4736 -0.3941
Row 7: 0.1822 -0.0955 0.1539 -0.4871
Row 8: 0.1143 0.2397 -0.1627 -0.1162
Row 9: 0.3967 -0.1590 0.7194 -0.0825

Reconstruction (U*S*V'):
Row 1: -0.0244 1.0358 0.8297 1.0792 -0.0086 1.0022 -0.0434 0.1156 -0.0256
Row 2: 1.0642 -0.0079 0.1156 -0.1198 0.1381 1.1055 0.1118 0.4942 -0.0755
Row 3: 0.9271 0.1426 -0.2317 0.0256 0.3270 0.0135 0.1170 0.0481 0.8461
Row 4: 0.0248 0.9818 0.2495 0.8507 0.1407 0.0074 0.1310 -0.2354 0.9895
Row 5: 1.0695 -0.1511 -0.0086 0.1321 0.4561 -0.0054 -0.2832 0.1381 0.1845
Row 6: 0.0281 0.9308 -0.0434 0.0876 -0.2832 0.9940 0.8432 0.1118 1.0912
Row 7: 0.9159 0.0449 0.1002 -0.0374 0.1483 0.8700 0.0823 0.3838 0.0247