Programming language version: C++ (2011)

Implement Steps: First apply Householder transformation and turn the matrix into bidiagonal form. Then calculate the eigenvectors to get v and u. Also calculate eigenvalues to get w. the root of eigenvalues will on the diagonal line of w.

How to execute your code:

```
g++ -o svd-decomposition svd-decomposition.cpp
./svd-decomposition
```

The .exe file will generate output.txt, and the result is inside of it.

Reference:

https://math.stackexchange.com/
https://stackoverflow.com/