Discussion for lecture 9

Course piazza link：piazza.com/shanghaitech.edu.cn/spring2021/cs270spring2021

To do list：

1.   Implement DFT, DCT and Hadamard transform based on the unitary transform definition:

$$t = Af$$

For example, for DFT:

$$A[k,n] = e^{-j\frac{2\pi kn}{N}} = cos(2\pi\frac{kn}{N})\text{-j}sin(2\pi\frac{kn}{N})$$

For DCT:

$$A[k,n] = \sqrt{\frac{2}{N}}cos\frac{\pi(2n+1)k}{2N}$$