Step1:

In this step we implement 3 pieces of RSA which are key generation, encryption, and decryption.

Encryption is done using multiple steps. The value for n is equal to prime numbers p \* q, the value for the totient in Euler’s is (p-1)\*(q-1), and e is the public key exponent. After generating these values we input the input file as the filename parameter in a bitvector. We then take this bitvector and encrypt each 128 bit section using pow function with the bitvector e and n and put it into a 256 bit section.

Decryption works similar to encryption in its initial steps to get the values for e, n, p, and q. we then decrypt using the inverse of the encryption method by taking out the 128 bits from the 256 bit section and taking the multiplicative inverse

Key generation is then a small section section where we just take the p and q values and we then find greatest common denominator for the values and return them in one function

Step2: