Task 3.1

Openssl installed

Task 3.2

With the ECB cipher, the two shapes can still be made out, but the edges are very fuzzy and the colors are very pixelated.

With the CBC encryption, the shapes cannot be made out. There are only pixels of all different colors visible.

Task 3.3

ECB only has the one character that shows as corrupted, since every cipher block is unique. Other blocks are not affected by the corruption. CBC, CFB and OFB all have at least 16 characters that come out to be corrupted. This has to deal with the fact that they are connected to the cipher that happens previous to them.

Task 3.4

1. When the text is 20 bytes, there will be padding added to the third block of 8 bytes. The original message will take up the first 4 bytes, so the last 4 bytes will need to be padded. When the text is 32 bytes, there will be no padding. This is due to the fact that 32 is a multiple of 8.
2. ECB and CBC will be using padding, since they are block ciphers. The block needs to be filled to properly decrypt. CFB and OFB will not be using padding, since the text doesn’t have to be a specific length.

Task 3.5