Exercise A1.1

```
Public static char[] shiftArray(char[] array, int col){

//for each row make the specified column value equal to the column value in the row above
//once you get to row of index 0 make it equal to a blank space
   for(int i=array.length-1; i>=0; i++){
      if(i==0){
         array[i][col] = “ ”;
      }

      else{
         array[i][col] = array[i-1][col]
      }

}
```

Exercise A1.3

```
Public boolean isWord(String w){
   Return scrabbleWords.contains(w.toUpperCase());
}
```

Problem 4.
What are the key differences between the following image formats:

Bitmap
-uncompressed format
-stored and rendered pixel by pixel for every individual pixel

GIF
-stands for graphics interchange format
-only supports 256 colors and does not support transparency
-supports animations
-was not widely accepted because of patent issues but has since become accepted because the patents have expired
-lossless data format

PNG
-stands for Portable Network Graphics
-declared as a standard in 2004
-made to replace GIF because GIF was patented

-lossless data compression meaning no decrease in resolution or data lost
-does not support non RGB color spaces
-supports transparent background

JPEG
-stands for Joint Photographics Experts Group
-lossy compression which means some information in the image deemed necessary is deleted forever
-does not support transparent background
-can produce smaller file size than PNG

What are some of the ideas in JPG and what makes it "lossy"?
-JPGs compress the image file by deleting unnecessary pixel information, this makes images easier to send over the internet and makes images load faster on websites
-a compression system that shrinks the file by deleting some of the data is termed “lossy”

What is the difference between HSV and RGB?
HSL and HSV are alternative representations of the RGB color model, designed in the 1970s by computer graphics researchers to more closely align with the way human vision perceives color-making attributes.

What are some unusual color names you've seen?
I had never heard of cerulean and cyan before learning about the CMYK color model.