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Alphabetic Sorting

Sorting into alphabetic order can be accomplished with both the bubble and exchange processes. The only thing you must remember when sorting alphabetically is the way in which Java deals with comparing String values.

- Java provides two methods for comparing strings: compareTo and compareToIgnoreCase
- If s1 and s2 are String variables, then their values can be compared by s1.compareTo(s2).
- **compareTo returns an int which is 0 if the two strings are identical, positive if s1 > s2, and negative if s1 < s2.**
- compareToIgnoreCase operates exactly as does compareTo except that it handles mixed case strings as single case strings

The ASCII code chart assigns numerical values to the sequences 'a-z', and 'A-Z'. For example, the capital letter A is assigned a numerical value smaller than that for capital B. Thus alphabetic order is actually ascending order.

Bubble Sort:

```
public class AlphaSortingBubble
{
    public static void main(String[ ] args)
    {
          String[ ] names = {"joe", "slim", "ed", "george"};
          sortStringBubble (names);
          for ( int k = 0;  k < 4;  k++ )
            System.out.println( names [ k ] );
    }

    public static void sortStringBubble( String  x [ ] )
    {
        int j;
        boolean flag = true;  // will determine when the sort is finished
        String temp;

        while ( flag )
        {
            flag = false;
            for ( j = 0;  j < x.length - 1;  j++ )
```

```
            {
                if ( x [ j ].compareToIgnoreCase( x [ j+1 ] ) > 0 )
                {                                   // ascending sort
                    temp = x [ j ];
                    x [ j ] = x [ j+1];     // swapping
                    x [ j+1] = temp;
                    flag = true;
                }
            }
        }
    }
}
```

Exchange Sort:

```
public class AlphaSortingExchange
{
    public static void main(String[ ] args)
    {
        String[ ] names = {"joe", "slim", "ed", "george"};
        sortStringExchange (names);
        for ( int k = 0;  k < 4;  k++ )
          System.out.println( names [ k ] );
    }

    public static void sortStringExchange( String  x [ ] )
    {
        int i, j;
        String temp;

        for ( i = 0;  i < x.length - 1;  i++ )
        {
           for ( j = i + 1;  j < x.length;  j++ )
           {
                if ( x [ i ].compareToIgnoreCase( x [ j ] ) > 0 )
                {                                   // ascending sort
                    temp = x [ i ];
                    x [ i ] = x [ j ];    // swapping
                    x [ j ] = temp;

                }
           }
        }
    }
}
```

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