

```
import java.util.Scanner;
```

```
import java.io.File;
```

```
class BauerArrayLab{
```

```
    public static String findLongestWord(String[] arr){
```

```
        String longword = arr[0];
```

```
        // Loop through each word in the array.
```

```
        for(int i=0; i<arr.length; i++){
```

```
            // Compares the length of each word to find the longest.
```

```
            if (arr[i].length() > longword.length())
```

```
                longword = arr[i];
```

```
        }
```

```
        return longword;
```

```
    }
```

```
    public static String findShortestWord(String[] arr){
```

```
        String shortword = arr[0];
```

```
        // Loop through each word in the array.
```

```
        for(int i=0; i<arr.length; i++){
```

```
            // Compares the length of each word to find the shortest.
```

```
            if (arr[i].length() < shortword.length())
```

```
                shortword = arr[i];
```

```
        }
```

```
        return shortword;
    }
}
```

```
public static int countWordsEndingWith(String[] arr, String str){
    int count = 0;

    // Loop through each word in the array.
    for(int i=0; i<arr.length; i++){
        // Check if string ends with a certain string.
        if(arr[i].endsWith(str))
            count++;
    }
    return count;
}
```

```
public static int countWordsStartingWith(String[] arr, String str){
    int count = 0;

    // Loop through each word in the array.
    for(int i=0; i<arr.length; i++){
        // Check if string starts with a certain string.
        if(arr[i].startsWith(str))
            count++;
    }
}
```

```
        return count;
    }
}
```

```
public static void main(String[] args) throws Exception{
    // Read data from file.
    File infile = new File("file1.txt");
    Scanner file = new Scanner(infile);

    String word, words = file.next();
    int c = 0;
    while (file.hasNext()){
        // Read each word from file.
        word = file.next();
        // Concatenates the words into a string text.
        words+=(" "+word);
    }
    // Split the string of words into an array containing words.
    String[] words_arr = words.split(" ");

    System.out.println(findLongestWord(words_arr));
    System.out.println(findShortestWord(words_arr));
    System.out.println(countWordsEndingWith(words_arr, "a"));
    System.out.println(countWordsStartingWith(words_arr, "a"));
}
}
```