**Workshop 5**

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**Bug 1**

**Lines Containing the Bug** : struct StringIndex result = { {0}, {0}, {0}, 0, 0, 0 };

**Corrected Version** : struct StringIndex result = { {0}, {0}, {0}, {0}, 0, 0, 0 };

**What Was Wrong** :

The last three fields (numWords, numLines, and numNumbers) were not properly initialized to zero.

**How It Was Fixed** :

Initialized the numWords, numLines, and numNumbers fields to zero.

**Debugger Tool/Technique Used** :

Code review and manual inspection.

**Bug 2**

**Lines Containing the Bug** : if (isNumber(str + i, sp - i + 1))

**Corrected Version** : if (isNumber(str + i, sp))

**What Was Wrong** :

The length of the segment to be checked by isNumber was incorrect. The length should be sp, not sp - i + 1.

**How It Was Fixed** :

Changed the length argument passed to isNumber to sp.

**Debugger Tool/Technique Used** :

Code review and logical analysis.

**Bug 3**

**Lines Containing the Bug** : word[i] = idx->str[i];

**Corrected Version** : word[i] = idx->str[start + i];

**What Was Wrong** :

The code was copying characters from the wrong position. It should start copying from the start position.

**How It Was Fixed** :

Adjusted the index to copy characters from the correct position.

**Debugger Tool/Technique Used** :

Testing and variable tracking.

**Bug 4**

**Lines Containing the Bug** : ((struct StringIndex\*)idx)->numWords--;

**Corrected Version** : // Removed this line

**What Was Wrong** :

There was an incorrect decrement of numWords. This line was not necessary and caused an error.

**How It Was Fixed** :

Removed the incorrect line.

**Debugger Tool/Technique Used** :

Code review and testing.

**Bug 5**

**Lines Containing the Bug** : word[sp] = '\0';

**Corrected Version** : word[sp - start] = '\0';

**What Was Wrong** :

The position of the null terminator was incorrect. It should be placed at sp - start.

**How It Was Fixed** :

Adjusted the position of the null terminator to sp - start.

**Debugger Tool/Technique Used** :

Testing and logical analysis.