**RGASC WDI Write-up: CSC148**

**[Writing samples taken from code documentation that students had to write and resubmit – initial submission and resubmission were sampled.]**

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In general, the writing seen in CSC148 was within the range of what would be expected in a first-year course, with some specific issues worth highlighting. Overall, the changes made between submissions were minor, with correspondingly minor impacts on the quality of the writing. In many cases, the student’s writing was technically sound without adding much in the way of clarity – in essence, reading the source code and its accompanying notation would have conveyed an equivalent amount of information (e.g., B17, B20, C8, C9, D3). In many cases, the student’s only substantive change was to add section headings (e.g., B24, C5). For example, despite substantial grammatical issues and extensive instances of conversational language, Student B21’s only major change was to add section headings.

*Grammar/Word Choice*

 As is generally the case in first- and second-year writing, the most common grammatical issues seen in CSC148 related to the proper use of plurals and possessives. To give a few representative examples of the common issues related to plurals: A7: “The *cancel\_contract* method also calculate if the deposit…”, B3: “...yet contract can carries on until customers...”, B10: “The contract requires a 300 dollars deposit.”, B12: “…there is no free minute or…”, C19: “… as long as customer want to keep this phone line.”. A representative example of the errors students frequently incorporate when using possessives can be seen in Student C4’s first submission: “Advances the contract to a new month by setting the given bill’s as the current bill and fixing calling rates and fixed charges.”. While these are very common issue in this and other courses I have analyzed, standard spell-checking software would likely have caught most of these issues, suggesting it would be valuable to remind students to utilize these tools. In addition to plurals and possessives, students often struggled to maintain the correct tense when writing (this usually occurred when the student attempted to shift between the past and present tense). For example: C1: “cancel\_contract(self) method takes in the parameter self and cancels the contract and also returning the remaining cost of the bill.”, C14: “Secondly, bill\_call() records the time of calling per month, cancel\_contract() cancel the contract.”, C20: “Bill call method will calculated and record the billable minutes and record when customers make calls.”. Common word choice issues included mixing up terms like “for” and “of” (C24: “The purpose for this subclass…” vs. “The purpose of this subclass…”), using awkward expressions like “for if” instead of terms like “indicating whether” (C3: “…stores a boolean value for if the contract…” vs. “…stores a Boolean value indicating whether the contract…”), and the use of redundant terms when implementing adjectives (B6: “more simple” vs. “simpler”). Finally, as is usually the case in first-year writing, comma-use issues occurred throughout (e.g., B8: “To execute this, start.month and start.year, that customer started using the contract, is compared to the given month and year.”).

*Colloquial/Conversational Writing*

Many students incorporated unnecessary verbiage that increased the length of their document without adding much in terms of substantive content. For example, a number of students claimed that a given function “simply” does something (C14), “just” returns a given result (C13), “essentially” performs a given function (C8), etc. These examples are a small subset of a larger problem wherein students made use of overly conversational/colloquial language. Direct addresses to the reader were fairly common (e.g., A3: “…you’re only allowed…”, A5: “…that you need to know…”, A8: “Have a look…”, B14: “…so we set…”, D11: “…we will go more in-depth later.”), although these were often removed in the second submission. In general, colloquial/conversational language was only present in the first submission, suggesting TA/instructor feedback effectively eliminated this issue (this can be seen by the high “Difference” score in Table 1).

*Pronoun Antecedents*

 Overall, students were fairly consistent in their use of pronouns, although a tendency to start sentences with “it” occasionally led to some ambiguity (e.g., A1: “It gets the customer’s call duration from the call argument.”, D12: “It’s key being a string while its value is a list of dictionaries and the function returns None.”). In most of these cases, context would allow a reader to identify what “it” is referring to – however, it may be worth encouraging students to vary their word choice in cases like this.

*Writing Style*

Many students wrote their documentation in what could be called a “pseudocode” style (e.g., B17, B18, B24, C9, see D3 for a particularly extreme example). While this is undoubtedly an effective way of communicating the logic of the underlying program, it is not clear if this is the most effective way to structure their writing, given the fact that the documentation is intended to help a user understand the code – the addition of more code-style writing may not help with this. Students who included more introductory/transition elements between the more code-based sections greatly improved the readability of their submission.

*Plagiarism/Academic Dishonesty*

 As is the case in most first-year writing courses, there were a few examples in CSC148 where similarities between two or more students’ submissions indicate they either wrote the assignment together or else copied one another. For example, Students C18, D3, and D6 all used the peculiar expression “you can safely assume” in virtually identical sentences: C18: “In other words, you can safely assume that self.bill has been already advanced to the right month+year.”, D3: “In other words, you can safely assume that self.bill exists for the right month+year when the cancelation is requested.”, D6: “In other words, you can safely assume that self.bill has been already advanced to the right month+year.”. In all three cases these students’ second submissions were substantially different from their initial submission, suggesting this issue may have been dealt with during the course – regardless, I felt this was worth pointing out.

*Summary*

 Overall, there was some noticeable improvement in terms of the quality of writing between the first and second submissions, although the difference was often quite subtle (Table 1). TA/Instructor feedback seems to have effectively eliminated issues surrounding colloquial/conversational language, and similar interventions would likely improve most of the remaining issues. In particular, student writing in CSC148 would markedly improve if students made better use of standard writing software (e.g., spell-check).

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| **Table 1:** Average scores (on a scale of 1 to 5) for the eight criteria assessed here, divided between two submissions. Averages based on 72 students. |
| **Submission** | **1** | **2** | **Difference** |
| **Complete Sentences** | 3.5915493 | 3.66901408 | 0.07857143 |
| **Grammar** | 3.27464789 | 3.3943662 | 0.12142857 |
| **Clarity** | 3.36619718 | 3.42957746 | 0.06428571 |
| **Organization** | 3.53521127 | 3.61267606 | 0.07857143 |
| **Transition Expressions** | 3.21830986 | 3.38732394 | 0.16428571 |
| **Contractions/Slang/Informal Language** | 4.27464789 | 4.4084507 | 0.13571429 |
| **Impersonal Language** | 4.07746479 | 4.36619718 | 0.29285714 |
| **Pronoun Antecedents** | 3.93661972 | 4.04929577 | 0.11428571 |