# -Contributors

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| --- | --- | --- | --- | --- |
| Name | Username | Email | Role | Contributions |
| Danny A. Hasen | Danny Hasen |  |  | * Contribution 1 * Contribution 2 |
| Jacob Carrasco | Gary Fox | garycarrasco@cpp.edu | Project manager | * Created repository * Added BagInterface * Started Efficiency Document * Added Intersection implementation * Implemented ArrayBag |
| Joseluis Ramierz | Pizel29-wq |  |  | * Contribution 1 * Contribution 2 |

# -Repository Link

https://github.com/Gary-Fox/BagsProject

# -Table 1. The time complexities of this assignment

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | ResizableArrayBag | | | LinkedBag | | |
| Union | Intersection | Difference | Union | Intersection | Difference |
| Best case |  | One or both bags are empty, in which case an empty bag interface is returned. O(1) |  |  | One or both bags are empty, in which case an empty bag interface is returned. O(1) |  |
| Worst Case |  | We traverse only one of the bags, the frequency of the item is taken into account when updating both resultFrequency and the bags themselves. Therefor time complexity comes out to be: n + c + c+ c, or O(n) |  |  | We traverse the contents of one bag for every 1 item in the other bag. O(n2) |  |