CSCI 3280 Introduction to Multimedia Systems

Spring 2022, Assignment 3 – LZW Compression (README)

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README

In this program, instead of using linear array to do linear search, a hash table is used to save library data, which is implemented by <unordered_map> in standard library of C++.

To use unordered _map to implement hash table, I defined the map in this format

```
unordered_map<string, int> umap;
```

To insert string into library, I used this command:

```
umap[mystring] = lib_index;
```

To find string, I used this command:

```
auto search_dict = umap.find(mystring);
```

If it found matching results, the library index will be something like `search_dict -> second`; if no, `search_dict == umap.end()` will be `true`.

This approach significantly reduces time to perform searching in library. Originally, linear search will be run in O(n) per searching. But a hash table reduced it into O(1) expected time per searching.