Arash Kheirollahi146731245 akheirollahi@mySeneca.ca  
:)

1.  
life is a waterfall

we're one in the river

and one again after the fall

swimming through the void, we hear the word

we lose ourselves, but we find it all

cause we are the ones that wanna play

always wanna go, but you never wanna stay

and we are the ones that wanna choose

always wanna play but you never wanna lose

aerials in the sky

when you lose small mind, you free your life

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when you lose small mind, you free your life

aerials, so up high

when you free your eyes, eternal prize

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oh oh oh, oh oh oh

oh oh oh, oh oh oh, oh oh oh

oh oh oh, oh oh oh

oh oh oh, oh oh oh, oh oh oh

2.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| token | replace character string | Length | *n* | Savings: Length × n  – 1 - Length – n | |
| ! | oh | 2 | 31 | 28 |  |
| @ | we | 2 | 13 | 10 |  |
| # | the | 3 | 14 | 24 |  |
| $ | you | 3 | 17 | 30 |  |
| % | free | 4 | 5 | 10 |  |
| & | hear | 4 | 2 | 1 |  |
| \* | high | 4 | 2 | 1 |  |
| ( | life | 4 | 5 | 10 |  |
| ) | lose | 4 | 7 | 16 |  |
| \_ | that | 4 | 4 | 7 |  |
| + | void | 4 | 2 | 1 |  |
| = | when | 4 | 5 | 10 |  |
| 1 | one | 3 | 6 | 8 |  |
| 2 | cause | 5 | 2 | 2 |  |
| 3 | never | 5 | 4 | 10 |  |
| 4 | small | 5 | 3 | 6 |  |
| 5 | wanna | 5 | 12 | 42 |  |
| 6 | always | 6 | 4 | 13 |  |
| 7 | aerials | 7 | 5 | 22 |  |
| 8 | swimming | 8 | 2 | 5 |  |
| 9 | ourselves | 9 | 2 | 6 |  |
| 0 | all | 3 | 6 | 8 |  |
| Total original Characters (with spaces) count from Word doc | | 1083 |  |  |  |
| Total dictionary and compressed text Characters (with spaces) | | 691 |  |  |  |
| Difference in totals | | 392 |  | 270 | Total characters saved from above calcs |
| original and saved | | 64% |  | 25% |  |
|  |  |  |  |  |  |
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|  |  |  |  |  |  |

3.

|  |  |
| --- | --- |
| token | replace character string |
| ! | oh |
| @ | we |
| # | the |
| $ | you |
| % | free |
| & | hear |
| \* | high |
| ( | life |
| ) | lose |
| \_ | that |
| + | void |
| = | when |
| 1 | one |
| 2 | cause |
| 3 | never |
| 4 | small |
| 5 | wanna |
| 6 | always |
| 7 | aerials |
| 8 | swimming |
| 9 | ourselves |
| 0 | all |

( is a waterf0

@'re 1 in # river

and 1 again after # f0

8 through # +, @ & # word

@ ) 9, but @ find it 0

2 @ are # 1s \_ 5 play

6 5 go, but $ 3 5 stay

and @ are # 1s \_ 5 choose

6 5 play but $ 3 5 )

7 in # sky

= $ ) 4 mind, $ % $r (

( is a waterf0

@ drink from # river

#n @ turn around and put up our w0s

8 through # +, @ & # word

@ ) 9, but @ find it 0

2 @ are # 1s \_ 5 play

6 5 go, but $ 3 5 stay

and @ are # 1s \_ 5 choose

6 5 play but $ 3 5 )

!

7 in # sky

= $ ) 4 mind, $ % $r (

7, so up \*

= $ % $r eyes, eternal prize

7 in # sky

= $ ) 4 mind, $ % $r (

7, so up \*

= $ % $r eyes, eternal prize

! ! !, ! ! !

! ! !, ! ! !, ! ! !

! ! !, ! ! !

! ! !, ! ! !, ! ! !

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5.  
the orders of what token Is replaced is important and its better to start compression with shorter words so if there are any sub-string in any longer words it could be included and also its better to do the decompression in the exact reverse order.

6.  
A screenshot of a computer

Description automatically generated

7.GIF file was compressed the least, In my opinion I am assuming the reason why this GIF file didn’t compress at all is that it has already lost so many data and it is on its lowest quality possible(of course it has lost some value again but it’s vary low and beneath 1%)

8.XLS files were compressed the most and in my book, it is because the data on this file has many less properties than regular excel file and more percentage of the data can be replaced with tokens

9. A screenshot of a computer

Description automatically generated

10.  
for this specification scenario I would like to use GitHub to keep a backup of all of my documents, I would simply set the GitHub program to watch over my assignment folder and push a commit every time I’m taking a break or switching to a different context of task. Or I could push a commit whenever I’ve made a major progress in between my process; lets say for this assignment.

11.the mentioned routine in previous question seems to satisfy all three factors of a good way to backup information, specially when you are working on an active program or project, first of all it would have 3 separate versions of the file; one on working area and one on the local repository directory and one on the cloud server located on GitHub headquarters.

Second, it is fare to say that our projects are stored on two different platforms; one on the local machine and the other on the online GitHub server .

And third, for having another backup on another hard drive we might also copy the files on a flash memory or a SSD drive.

12.

So due to the explained criteria I can easily access my documents easily wherever I am, only and only if I have access to internet connection and remember my GitHub user account and password or have access to my hardware backup device. Giving these conditions I would have the availability to restore my data anytime, anywhere.

13.  
Normally assignments are containing that large amount of data to be worried about the estimated time of restoring the data, although depending on the situation and access to necessary tools the time and difficulty to restore the data might vary; on average I can give the estimation of a couple minutes (one or two), to fully restore my assignments from GitHub. Even if the amount of data stored was seeming to be large =, it might be a good strategy to save different assignments in various portions and repositories.