TALLY

MADE BY AKKI

Introduction

Tally, crafted with Python, revolutionizes accounting simplicity. This versatile software comes in three editions: Family Tally, Business Tally, and Tally Terminal. Tally, your go-to accounting solution, simplifies financial management with ease. From seamless company creation to secure data handling, Tally ensures a streamlined experience. Enjoy password protection, encryption support, and smart cash management. Currently, the Terminal version is in development, catering specifically to business needs. Elevate your financial management with Tally.

What's Stage 1

There are certain stages in this tally code that determine the progress and part of the code for help to understand in which part of code we have been talking about or help to know which part of code creating problem…..

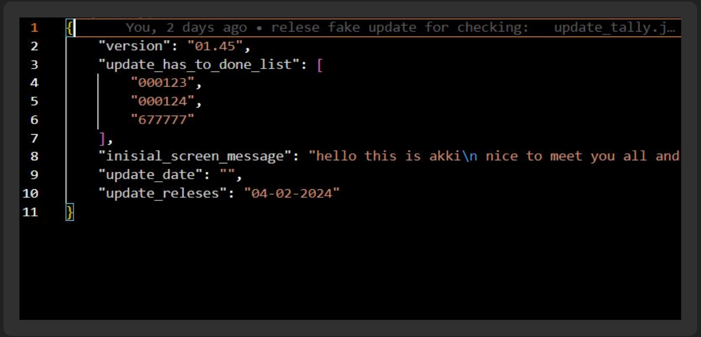
`1st Stage:-` *The first stage contains the initial screen of the Tally software. Here, we can create a company, open a company, and select a company. While creating a company, only valid data is accepted and stored for later recall. The stage includes password and encryption support, system info updating, and cash handling.*

What’s in Stage 1

1. Company Management:
    a. Create and open companies.
    b. Manage multiple companies simultaneously.
2. Data Storage and Security:
    a. Use JSON files for efficient data storage.
    b. Avoid potential security risks with the eval function.
    c. Implement password and encryption support for each company.
3. Data Validation:
    a. Enforce data validation to prevent invalid entries.
    b. Ensure data integrity.
4. Documentation and Updates:
    a. Update documentation and information without code re-installation.
    b. Automated checks for updates when companies are opened.
5. Financial Management:
    a. Support cash updates with valid data, including current currency value.

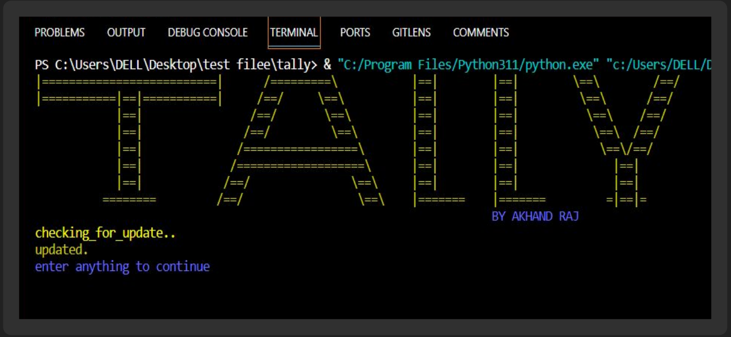
The first page is to check for updates

- So the first page checks the update if there is update it's update the filles define in it
- So it's basically for updation it's download "JSON" file from git repository then check the update version if it's similar it's pass else it's check what to update and download that specific file from git repository and update it this is how it's update the software….



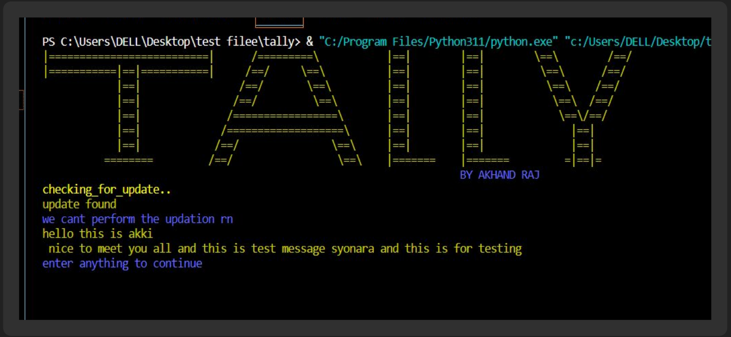
```
{        You, 2 days ago • relese fake update for checking:   update_tally.j…
    "version": "01.45",
    "update_has_to_done_list": [
        "000123",
        "000124",
        "677777"
    ],
    "inisial_screen_message": "hello this is akki\n nice to meet you all and
    "update_date": "",
    "update_releses": "04-02-2024"
}
```

- The JSON file to update by reading it it's update the software



```
PS C:\Users\DELL\Desktop\test filee\tally> & "C:/Program Files/Python311/python.exe" "c:/Users/DELL/D
|=========================|      /=========\         |==|      |==|        \==\       /==/
|==========|==|==========|     /==/     \==\        |==|      |==|         \==\     /==/
           |==|               /==/       \==\       |==|      |==|          \==\   /==/
           |==|              /==/         \==\      |==|      |==|           \==\ /==/
           |==|             /================\      |==|      |==|            \==\/==/
           |==|            /==================\     |==|      |==|             |==|
           |==|           /==/              \==\    |==|      |==|             |==|
         ========        /==/                \==\   |=======  |=======       =|==|=
                                                          BY AKHAND RAJ
checking_for_update..
updated.
enter anything to continue
```

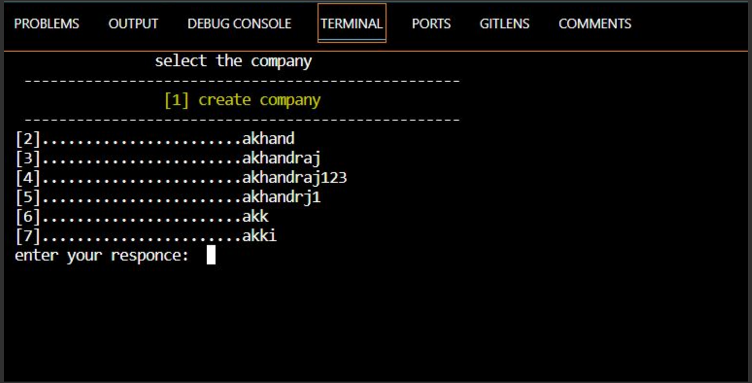
- Updation:if there is no update screen looks like that



```
PS C:\Users\DELL\Desktop\test filee\tally> & "C:/Program Files/Python311/python.exe" "c:/Users/DELL/Desktop/t
|=========================|      /=========\         |==|      |==|        \==\       /==/
|==========|==|==========|     /==/     \==\        |==|      |==|         \==\     /==/
           |==|               /==/       \==\       |==|      |==|          \==\   /==/
           |==|              /==/         \==\      |==|      |==|           \==\ /==/
           |==|             /================\      |==|      |==|            \==\/==/
           |==|            /==================\     |==|      |==|             |==|
           |==|           /==/              \==\    |==|      |==|             |==|
         ========        /==/                \==\   |=======  |=======       =|==|=
                                                          BY AKHAND RAJ
checking_for_update..
update found
we cant perform the updation rn
hello this is akki
 nice to meet you all and this is test message syonara and this is for testing
enter anything to continue
```

- Updation:if there is update and show inisial message regarding update

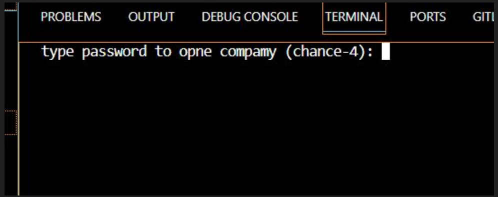
2nd page open or create company...



```
                  select the company
 ---------------------------------------------------
                   [1] create company
 ---------------------------------------------------
[2]......................akhand
[3]......................akhandraj
[4]......................akhandraj123
[5]......................akhandrj1
[6]......................akk
[7]......................akki
enter your responce:
```

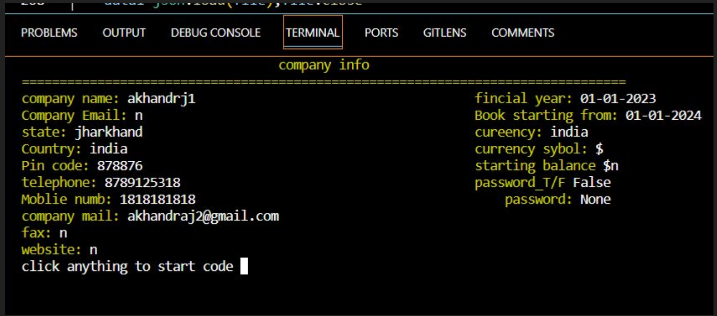
So the 2nd page is home where we can select company by inputting company serial number and for creating company we type [1] and for other opening company we start with [2] and the last where list end ……

If we select companie.....



```
type password to opne company (chance-4):
```

1. If there is password it's ask password if not 2nd page open

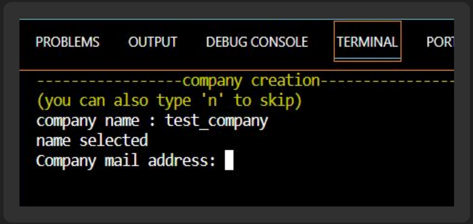


```
                              company info
 ========================================================================
company name: akhandrj1                                fincial year: 01-01-2023
Company Email: n                                       Book starting from: 01-01-2024
state: jharkhand                                       cureency: india
Country: india                                         currency sybol: $
Pin code: 878876                                       starting balance $n
telephone: 8789125318                                  password_T/F False
Moblie numb: 1818181818                                    password: None
company mail: akhandraj2@gmail.com
fax: n
website: n
click anything to start code
```

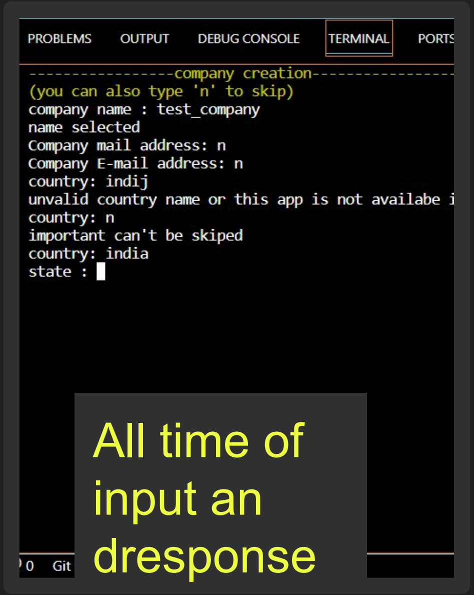
2. After that it's open company info and there when we enter open G.O.T

Create Company

So when we click on create company we get a form to like that after filling it they show us all info and ask if it's you want to if yes all info save and com created if not u get the form again



```
----------------company creation--------------
(you can also type 'n' to skip)
company name : test_company
name selected
Company mail address: █
```



```
----------------company creation----------------
(you can also type 'n' to skip)
company name : test_company
name selected
Company mail address: n
Company E-mail address: n
country: indij
unvalid country name or this app is not availabe i
country: n
important can't be skiped
country: india
state : █
```

All time of input an dresponse

- When u filing the form u can input 'n' in create company and that will bring u again to select company page
- If you click 'n' in other section of form it's will skip that part of info
- If you enter 'wrong info' in form such as wrong number wrong mail wrong state and country name etc. it will show an error message and ask you to fill that detail again
- After u finish with the form it's ask for password while typing password u can't see it and after that
- It will ask for confirmation if you entered is correct or not if you type 'y' company created and if you type 'n' you get form again

Password and encryption

Substitution Cipher Encryption Technique

For encryptio prosess we using The Substitution Cipher Encryption Technique employed in this code involves the mapping of characters in a given string to specific codes during the encoding process. Similarly, during decoding, these codes are reversed to reconstruct the original string. In this implementation, a key is used to establish the mapping, ensuring a one-to-one correspondence between characters and their respective codes

Roles in tally software

1. For encryption password
2. For encryption critical data
3. Each company will have their unique key for better security
4. Provide security in a company

Features of S.U.E.T

1. Without mapping we can’t access the data and decode it
2. Can add multiple layer of encryption layers of protection in codes
3. Very simple to use
4. Yet it’s can’t provide high security but can protect with normal attack

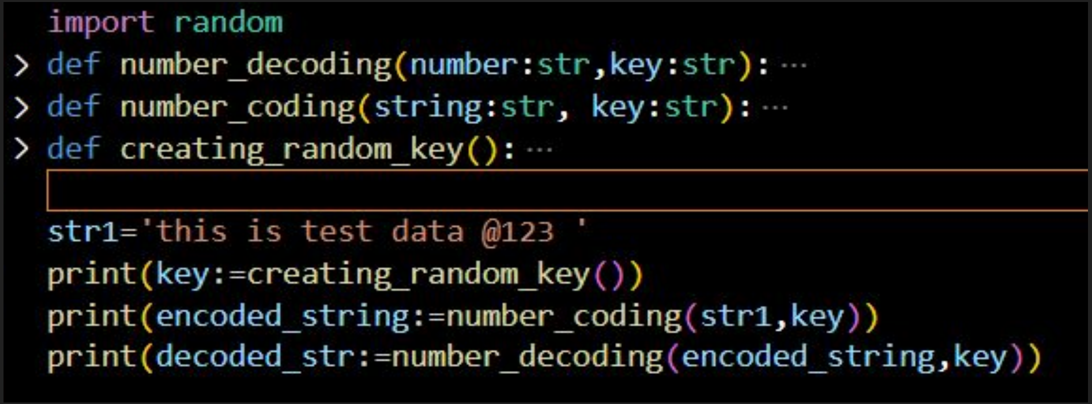
How encryption works:-

- Encoding (number_coding):
  - Each character in the input string is replaced with its mapped code, followed by '0' as a separator.
  - Characters not found in the key are appended with '0'.
- Decoding (number_decoding):
  - The encoded string is split at '0' to identify each character.
  - If a character is '53', it is replaced with a random value from a specific range.
  - The remaining characters are mapped back to their original values using the key.

Key Generation:

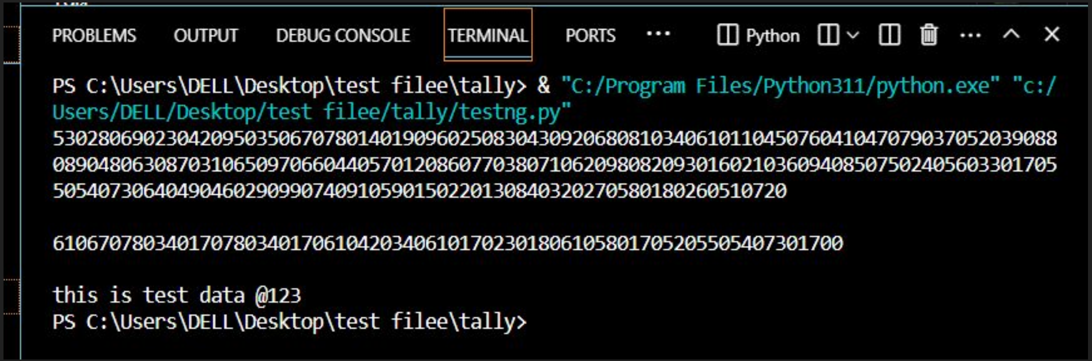
The creation of a random key involves shuffling a list of two-digit numbers and concatenating them with '0'. This key serves as the foundation for both encoding and decoding processes.

EXAMPLE



```
import random
> def number_decoding(number:str,key:str): ···
> def number_coding(string:str, key:str): ···
> def creating_random_key(): ···

str1='this is test data @123 '
print(key:=creating_random_key())
print(encoded_string:=number_coding(str1,key))
print(decoded_str:=number_decoding(encoded_string,key))
```



```
PS C:\Users\DELL\Desktop\test filee\tally> & "C:/Program Files/Python311/python.exe" "c:/
Users/DELL/Desktop/test filee/tally/testng.py"
53028069023042095035067078014019096025083043092068081034061011045076041047079037052039088
08904806308703106509706604405701208607703807106209808209301602103609408507502405603301705
50540730640490460290990740910590150220130840320270580180260510720

6106707803401707803401706104203406101702301806105801705205505407301700

this is test data @123
PS C:\Users\DELL\Desktop\test filee\tally>
```

In 1st pic it’s first generating a unique key…

and then endecoded the string by using number coding and key encrypted the string

And then by using number decoding and key it’s decoded encrypted key

*Without using key we can’t perform encoding and decoding

Security Level Against Brute Force Attacks

The security level against serial brute force attacks depends on the size of the key space. In this case the lenthod key is 81 characters suggests a substantial key space To provide a rough estimate, you can consider the chance of randomly guessing the correct key as 1 in 81! This probability is extremely low, and it's practically impossible to obtain the correct key through brute force within a reasonable timeframe.

->chances of getting key by series brute force:-

Percentage≈ 81! / 1 ×100 = 0.000000000000000000000000000000001% of getting the key

->chances of getting key by random brute force:-

If we talking about random method to generate key for brute force then the length of 81 characters, and each character is randomly chosen, the total number of possible keys is 69^{81} (69 possibilities for each of the 81 characters).

Percentage ≈ 1 / 69^{81} × 100 = 0.0000000000…………………………….0001% a lot

-> attack coude help to get the key are:-

Cryptanalysis Techniques , Side-Channel Attacks , Social Engineering, session hijacking which all contain stealing the key instead of generating that key again it's impossible to generate same key again so it's depends on so to protect the generated key …..

Document Updation for Enhanced Tally Software Experience

The process of document updation in the provided code snippet serves the purpose of ensuring that the Tally software maintains access to the latest information, particularly regarding financial data like currency exchange rates. This periodic update mechanism enriches the software's functionality without necessitating a full code update.

Key Elements of the Update Process :---

- Request for update_tally.json - at first it's request for update_tally.json from github where it's will gather info regarding update such as version , message to show and list of thing to update.
- Check_the_update :-- then it's check if the version of update_tally.json and the current version of software is equal or not if not it's read the list of updation and update each list if not it's passs
- Updating_cash :- this is done every time the software open it's update the cash or data that required latest version for better and effective use of tally such as exchange rate of currency
- Status_tracking :- As part of the update process, the code maintains a record of status information, including the frequency of updates and the timestamp of the last update. This tracking mechanism aids in monitoring the software's performance and ensures timely maintenance of essential data.