ADVANCE

Encryption with Ascii Code

WhiteHat Jr
Live Online Coding for Kids

INSTRUCTION:

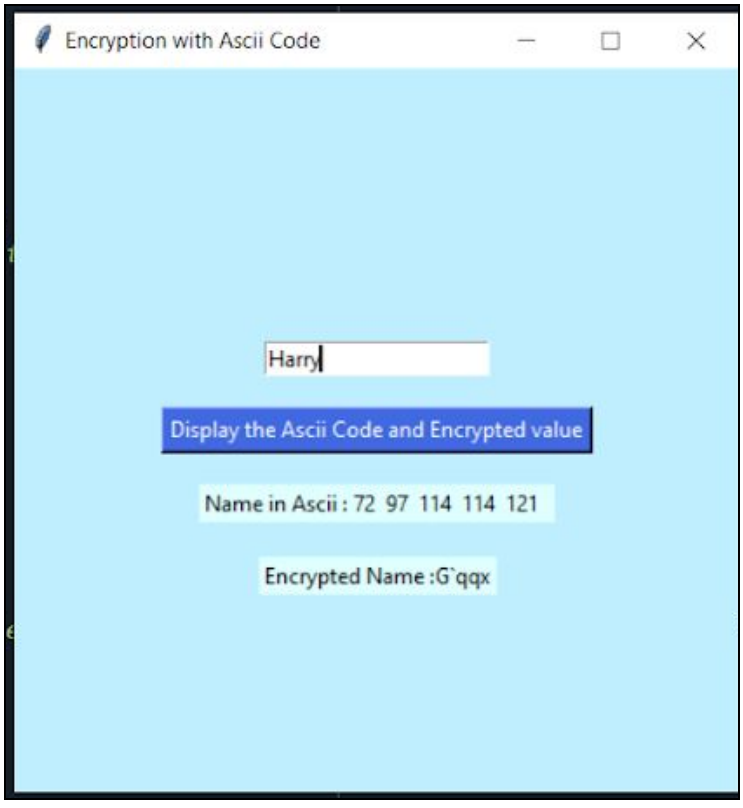
Goal of the Project:

In class 147, you have studied the concept of for loop in python, also you have learned what is Ascii Code and created an application to convert the word/name into the Ascii code.

Encryption with Ascii Code:

In this application you will be taking the input as a word/string from the user and convert it into the ascii code and perform an encryption on that ascii code, and reconvert it into string.

Encryption meaning the process of hiding the actual data so that it cannot be read by special knowledge. Or we can say it as the secret form of data which we can use to convey our message.



ADVANCE

Encryption with Ascii Code

Story:

St.fairy school students have recently learnt to convert a character into ASCII number. So the principal of the school decides to have a fun game that is to convert the name of students into ASCII numbers at the school fair.

Therefore the principal of St.fairy has asked the students to create an application that converts a set of characters in a list of ASCII numbers.

***The above image is just for reference, we expect you to explore your creativity and make it look beautiful.**

Getting Started:

1. For mac users - Open applications folder >> open anaconda >> spider. Then press command + s to **save as, select** the path**,** give the name to the file as **Mathematics.py** and click on **Save.**
2. For window users - Go to **start >> anaconda >> spider.** Then go to **save as** and right click and create a folder **Python projects,** give the name to the file as **Mathematics.py** and click on **Save.**

Specific Tasks to complete the Project:

1. First right the basic template of the tkinter which you have made in the class 147. Modify it by adding the background color to the root window as done in class 147.
2. Process of encryption:
    - You will be first converting the user input to the ascii code
    - Then decrement 1 from each of the generated ascii code.
    - Then again converting that changed ascii code to the character code.
3. Start creating the functions for converting the word into Ascii and also perform encryption on it.
4. Create an Entry Element and store it in a variable in order to take the input from the user. And use the **place()** function to place it on the root window.
5. Create two Labels and store it in two different variables to display the Ascii code and the encrypted string on the root window respectively.
6. Create a function to convert the word into ASCII code and also to encrypt that ASCII code.
    - Get the input from the user, and store it in a variable.
    - Use a “for loop” for generating the ASCII code for the user input

- Inside the for loop write the following code
    - Write code for converting user inputted string into ASCII code, and update the respective label created in point 2(which is used to hold the ASCII code) with this ASCII code which you just converted. Also don't forget to convert the value into string.
    - Again write code for converting user input into ASCII code, and convert it into integer, using int() and store it inside a variable
    - Now to perform encryption, decrement 1 from the above variable(which has ASCII code in integer data type) and store it in a variable.
    - For getting the encrypted value - Convert the variable(which has the decremented value) into **string** using **chr() function,** and update the respective label created in point 2(which is used to hold the encryption string) with this **converted string**. Also don't forget to convert the value into string.

7. Next you need to create the button, so that when you click on the button the function is called for converting words into ascii and also perform encryption. Attributes of the button:
    - Set the text for the button
    - Use command attribute to call the function created in point 3
    - Set font color and background color of the button
8. Next you have to place all the elements which are - the entry element, button, and two labels, using the place() function on the root window.

Submitting the Project:

After you have completed coding do the following things:

1. First create a folder on your google drive and rename it as project-C147.
2. Then start screen recording and record the output using loom and upload the video in the folder which you have created. Steps for screen recording.
3. Then upload **Ascii_Encryption.py** in which you have written python code in the folder which you have created in point 1.

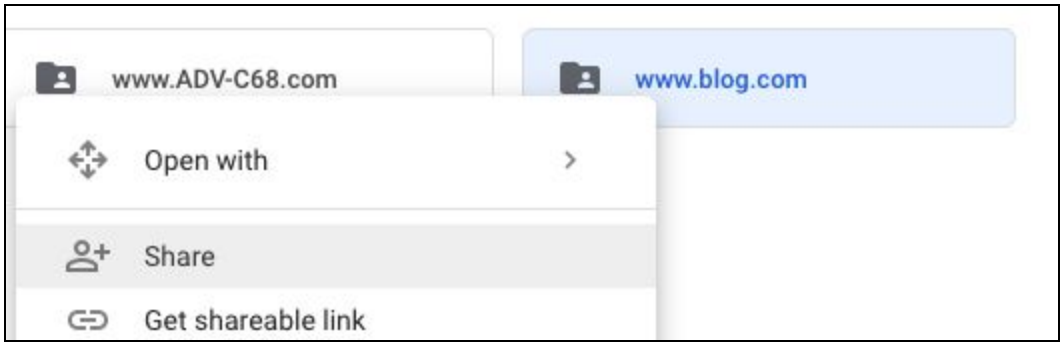
Then generate the link of the folder

Steps for generating a link of the folder.

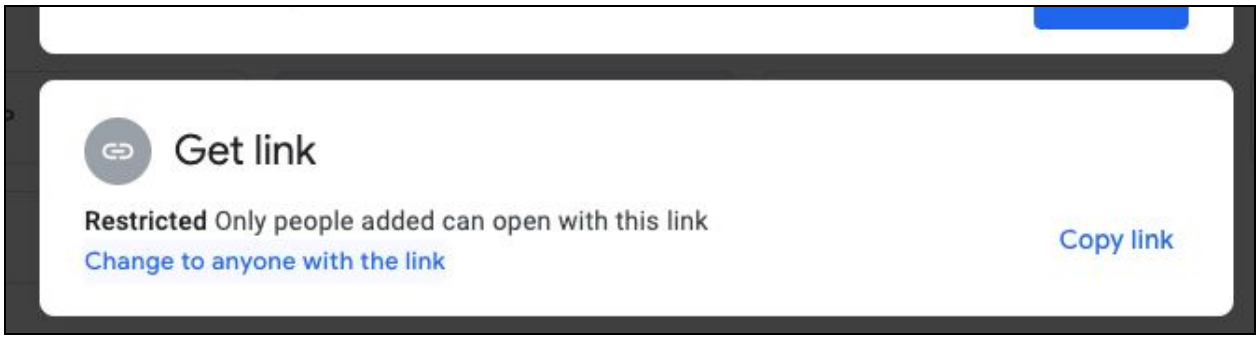
ADVANCE

Encryption with Ascii Code

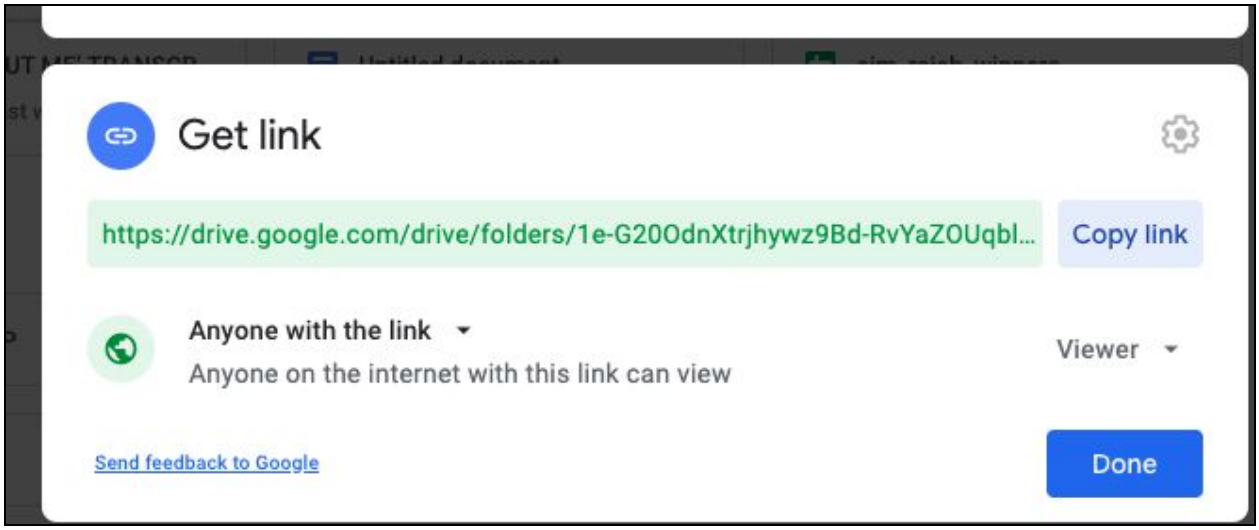
1. Right click on the folder and click share.



2. Then click on Change to anyone with the link.



3. Then the setting will change so anyone can view it.



4. Now click on the copy link to copy the link.
5. Now share and submit this copied link in the Student Dashboard Projects panel against the correct class number.

ADVANCE

Encryption with Ascii Code

Hints:

1. Creating basic template of tkinter window.
    - Import * from tkinter - import all the packages of tkinter.
    - Create a root window.
    - Set the title of your root window as shown in the above image.
    - Set the dimensions of the root window.
    - Set the background color of the root window.
    - End the application by calling mainloop().
2. Writing the for loop.
    - If you face any difficulty in writing code for converting the word into ascii code refer to the code for converting user input to ascii code written in the class.
      Encryption:
    - Code for converting user input into ASCII code, and convert it into integer, using int() and store it inside a variable.

```
ascii = int(ord(letter))
```

    - Process for encryption - decrement 1 from the above variable(which has ASCII code in integer data type) and store it in a variable.

```
encrypted = ascii - 1
```

    - Code for getting the encrypted value - Convert the variable(which has the decremented value) into **string** using **chr() function,** and update the respective label created (which is used to hold the encryption string) with this converted **string**. Also don't forget to convert the value into string.

```
label2["text"] += str(chr(encrypted))
```

        - To lean more about chr().
3. Setting font and background color.
    - For setting the font color of the button **fg** attribute is used.
    - For setting the background color of the button **bg** attribute is used.

- To set the background and colours to the elements you can refer to the colour chart as given in this link.

4. Try to place the elements using the relx and rely property of place() function in the following order.
   - First the Entry element.
   - Then the button.
   - Then the label that is used to hold the ASCII code.
   - Then the label that is used to hold the encrypted values.

REMEMBER... Try your best, that's more important than being correct.
After submitting your project your teacher will send you feedback on your work.

——————— XXX ——————— XXX ——————— XXX ——————— XXX ——————— XXX ———