



Faculty of Computer Science and Artificial Intelligence at Cairo University

Course Name: Structured Programming 1

Course Number: CS112

Dr. Mohamed El-Ramly

TA: Eng. Hagar Ahmed

Assignment: 2

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Mohamed Hussein Hassan	20210335	mohamed.h.eladwy@gmail.com
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Aly Screens:

The screenshot displays a Windows 10 desktop with two browser windows open.

Top Window: GitHub Profile of AliAladin99

- Address Bar:** github.com/AliAladin99
- Navigation Bar:** Search or jump to... Pull requests Issues Marketplace Explore
- Profile:** AliAladin99 (علي الدين) with a custom avatar.
- Overview Tab:** Shows "Popular repositories" (none listed) and a message: "You don't have any public repositories yet."
- Contribution Graph:** A calendar grid for the last year (Mar to Mar) showing 1 contribution in the last year. A single green square is visible on October 1st.
- Footer:** This is your contribution graph. Your first square is for joining GitHub and you'll earn more as you make additional contributions. More contributions means a darker green square for that day. Over time, your chart might start looking something like this. We have a quick guide that will show you how to create your first repository and earn more green squares! [Read the Hello World guide](#)

Bottom Window: TypingClub Website

- Address Bar:** edclub.com/sportal/program-3.game
- Header:** TypingClub Home Stats Badges Typing Jungle
- User:** AliAladin
- Progress:** 28% progress | 683 stars | 252,675 points
- Badges:** A grid of 18 badges, each with a number, an icon, and a star rating (1-5 stars).
 - 99 Practice L Hand (5 stars)
 - 100 Play: Numbers (5 stars)
 - 101 Muscle Memory (5 stars)
 - 102 Good Posture (5 stars)
 - 103 Adjust Your Screen (5 stars)
 - 104 Trust Yourself (5 stars)
 - 105 Practice R Hand (5 stars)
 - 106 Play: Words (5 stars)
 - 107 Brain Power (5 stars)
 - 108 Repeat Lessons (5 stars)
 - 109 Never Stop (5 stars)
 - 110 No Peeking (5 stars)
 - 111 Practice L Hand (5 stars)
 - 112 Play: Words (5 stars)
 - 113 Home Row (5 stars)
 - 114 (5 stars)
 - 115 (5 stars)
 - 116 (5 stars)
 - 117 (5 stars)
 - 118 (5 stars)
- Right Sidebar:** Two promotional banners for "Study Film Making in Paris" with a "Join the Most Important Film School in Europe for a State recognized Bachelor Program!" message.

CS112: Winter2021-2022: Assignments x CS112: Winter2021-2022: Assignments x EdClub x +

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TypingClub Home Stats Badges Typing Jungle

28% progress 683 stars 252,675 points

99 Practice L Hand 100 Play: Numbers 101 Muscle Memory 102 Good Posture 103 Adjust Your Screen

104 Trust Yourself 105 Practice R Hand 106 Play: Words 107 Brain Power 108 Repeat Lessons

109 Never Stop 110 No Peeking 111 Practice L Hand 112 Play: Words 113 Home Row

114 115 116 117 118

Study Film Making in Paris

Join the Most Important Film School in Europe for a State recognized Bachelor Program!

Study Film Making in Paris

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14°C 11:05 PM 3/25/2022

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edclub.com/sportal/program-3.game

TypingClub Home Stats Badges Typing Jungle

28% progress 683 stars 252,675 points

168 Review: W & O 169 Practice: W & O 170 QP Capital Q & P 171 Review: Q & P 172 Practice: Q & P

173 Play: WOQP 174 VM Capital V & M 175 Review: V & M 176 Practice: V & M 177 Travel Index

178 C? Capital C & ? 179 Review: C & ? 180 Practice: C & ? 181 Play: VMC? 182 ZN Capital Z & N

183 184 185 XB 186 187

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TypingClub Home Stats Badges Typing Jungle

28% progress 683 stars 252,675 points

Common Patterns 1

192 the	193 ing	194 tion	195 est	196 and
197 int	198 ship	199 nth	200 ear	201 ore
202 Dynamic Practice				

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Study Film Making in Paris

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14°C 11:05 PM 3/25/2022

CS112: Structured Programming x www.acadoc.com/action_handl... x New Tab x connect-4-game/newconnect.py x +

github.com/Alialdin99/connect-4-game/blob/main/newconnect.py

Search or jump to... Pull requests Issues Marketplace Explore

Alialdin99 / connect-4-game Public

Pin Unwatch 1 Fork 0 Star 0

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

main connect-4-game / newconnect.py / <> Jump to

Go to file

Alialdin99 Add files via upload Latest commit eadb5d2 2 minutes ago History

1 contributor

186 lines (152 sloc) 5.56 KB

```
1 # Program name : connect 4 game
2 # last modification date : 3/5/2022
3 # Alialdin muhammad mostafa hanafy
4 from sys import exit
5 from os import system, name
6 import sys
7
8 def clear():
9     if name == 'nt':
10         _ = system('cls')
11     else:
12         _ = system('clear')
13
14 matrix = [[' ' , ' ' , ' ' , ' ' , ' ' , ' ' , ' '],
15           [' ' , ' ' , ' ' , ' ' , ' ' , ' ' , ' '],
```

16°C 8:55 PM 3/28/2022

Yosseif screens:

The screenshot shows the GitHub profile of YOUSSEFEYATE. The profile includes a circular profile picture of a man with brown hair and a mustache, wearing a blue shirt. Below the picture is the name "YOUSSEFEYATE" and an "Unfollow" button. The bio reads "Developer, Graphic & Motion Designer" with icons for a computer, a paint palette, and a lightbulb. It also shows "1 follower · 1 following". The navigation bar at the top includes "Overview", "Repositories 4", "Projects", "Packages", and "Stars". The "Popular repositories" section lists four repositories: "TwoSquaresGame" (Public), "wertyuiop" (Public, qwertyuio), "LearnCPP" (Public, Forked from Lakhankumawat/LearnCPP, with a description "Learn Cpp from Beginner to Advanced" and "One step solution for c++ beginners and cp enthusiasts"), and "youseef_hamed" (Public). A contribution graph shows 8 contributions in the last year, with a grid of squares for each month from March to March.

The screenshot shows the GitHub repository page for YOUSSEFEYATE/Baconian_20210494. The repository is public and has 1 contributor. The file "Baconian_20210494 / Baconian_20210494.cpp" is selected, showing 66 lines (58 sloc) and 2.3 KB. The code is a C++ program for a Caesar cipher. The code includes comments in Arabic and C++ code for encryption. The code is as follows:

```
1 //FCAI - Programing 1 - 2022 - Assignment 2
2 //Program Name:Baconian_20210494.cpp
3 //problem Description:This program is gonna take a massage from the user & cipher each letter to 5 letters from ("a") , ("b")
4 //Last Modification Date: 25/3/2022
5 //Author and ID and Group: Youssef Hamed Mohamed Hamed ,20210494,Group B
6 //Teaching Assistant :Eng.
7 //Purpose: To get the
8 #include <iostream>
9 #include <string>
10 #include <cstring>
11 using namespace std;
12
13 string encrypt(string pt)//Encrypt function
14 {
15     char key[26] = { 'A','B','C','D','E','F','G','H','I','J','K','L','M','N','O','P','Q','R','S','T','U','V','W','X','Y','Z'};//string array
16     string value[26] = { "aaaaa","aaaab","aaaba","aabbb","abaaa","abbbb","abbaa","ababb","abbaa","abbbb","baaaa","baaab","baaba"
17
18
19     int i, j;//Incrpting the val
```


EdClub x +

typingclub.com/sportal/program-3.game

CS112: Structured P...

TypingClub Home Stats Badges Typing Jungle

10% progress | 121 stars | 54,706 points

196 and
197 int
198 ship
199 nth
200 ear
201 ore
202 Dynamic Practice

Basic Level 2 Basic Keys (Goal 30 WPM)

203 Cacao Tree
204 Wooden Churches
205 Vasco da Gama
206 Solar System

Close X

Createxplay
CreateXplay

eddub x +

typingclub.com/sportal/program-3.game

CS112: Structured P...

TypingClub Home Stats Badges Typing Jungle

10% progress | 125 stars | 55,343 points

186 Review: X & B
187 Practice: X & B
188 Travel Middle
189 Travel Ring
190 Travel Pinky
191 Dynamic Practice

Common Patterns 1

192
193
194
195

Close X

مع كوكاكولا... الفرقة ليها سحرها
اعرف المزيد

CS112-2022-2nd...docx CS112-2022-2nd...docx Show all X

edclub x +

typingclub.com/sportal/program-3.game

CS112: Structured P...

TypingClub Home Stats Badges Typing Jungle ? yousef

10% progress | 125 stars | 55,343 points

135 Advice/Advise

136 By/Bye/Buy

137 Dynamic Practice

Shift Key Introduce using the shift keys with other keys

138 Shift Key Intro

139 Capital F & J

140 Review: F & J

141 Practice: F & J

Close x

Ad

Createxplay

CreateXplay Ouvrir >

CS112-2022-2nd...docx CS112-2022-2nd...docx Show all x

edclub x +

typingclub.com/sportal/program-3.game

CS112: Structured P...

TypingClub Home Stats Badges Typing Jungle ? yousef

10% progress | 125 stars | 55,343 points

97 Look Away

98 Active Breaks

99 Practice L Hand

100 Play: Numbers

101 Muscle Memory

102 Good Posture

103 Adjust Your Screen

104 Trust Yourself

105 Practice R Hand

106 Play: Words

107 Brain Power

108 Repeat Lessons

Close x

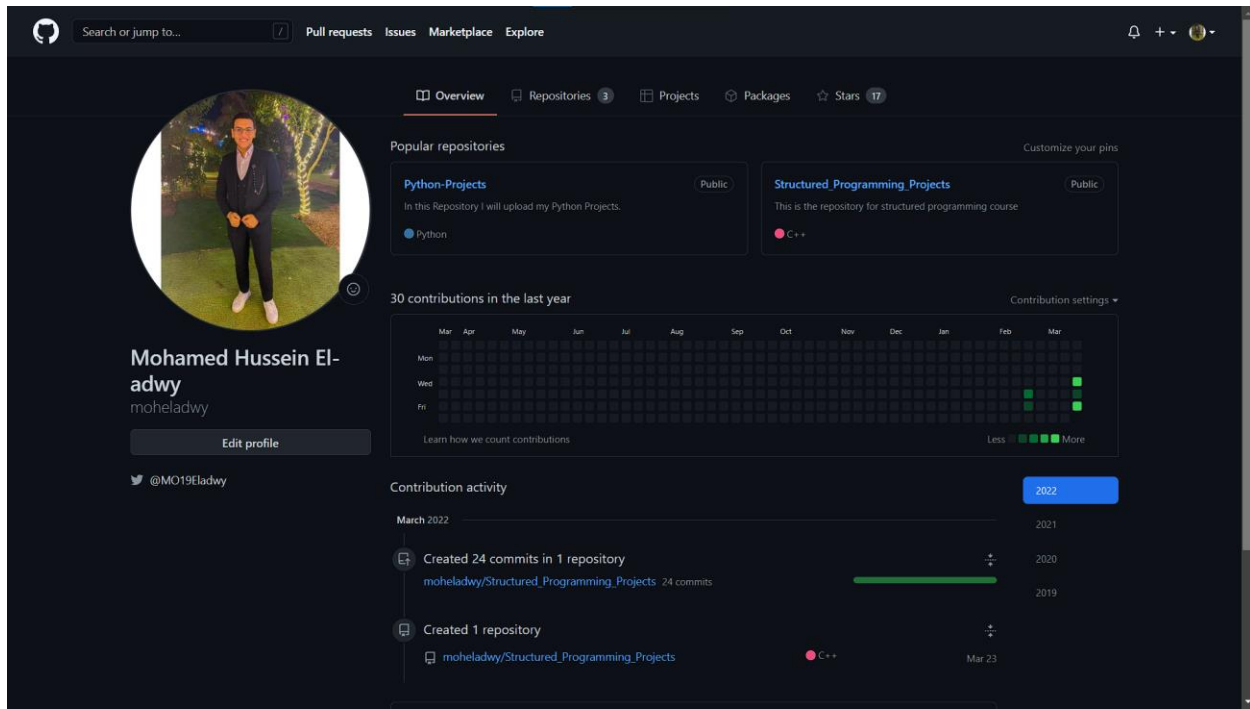
Ad

Createxplay

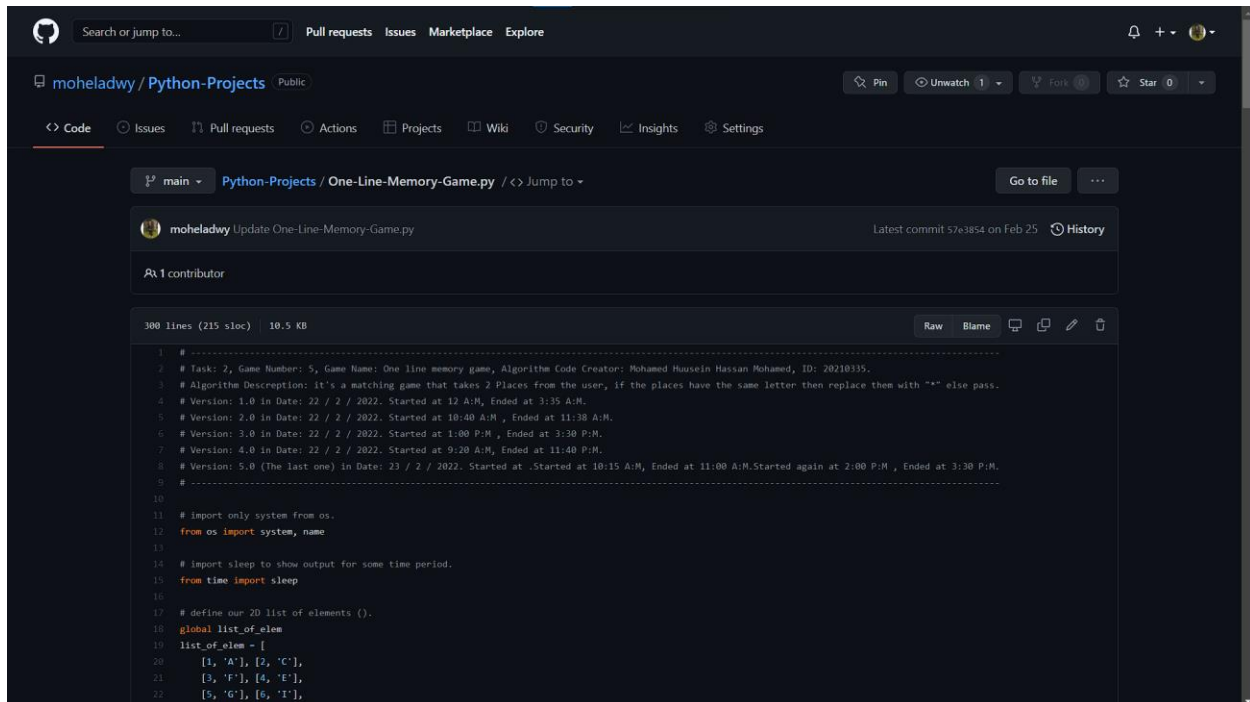
CreateXplay Ouvrir >

CS112-2022-2nd...docx CS112-2022-2nd...docx Show all x

Mohamed Screens:



GitHub profile page for Mohamed Hussein El-adwy (moheladwy). The profile includes a circular profile picture, a bio, and a list of popular repositories. The 'Python-Projects' repository is highlighted, with a description: 'In this Repository I will upload my Python Projects.' The 'Structured_Programming_Projects' repository is also listed, with a description: 'This is the repository for structured programming course.' The profile shows 30 contributions in the last year, with a calendar visualization. The 'Contribution activity' section shows a bar chart for March 2022, indicating 24 commits in 1 repository (moheladwy/Structured_Programming_Projects) and 1 repository created (moheladwy/Structured_Programming_Projects).



GitHub repository page for moheladwy/Python-Projects. The repository is public and has 1 contributor. The file 'One-Line-Memory-Game.py' is selected, showing 300 lines (215 sloc) and 10.5 KB. The code is a Python script for a one-line memory game. The code includes comments describing the game and its development history. The code is as follows:

```
1 # -----
2 # Task: 2, Game Number: 5, Game Name: One line memory game, Algorithm Code Creator: Mohamed Hussein Hassan Mohamed, ID: 20210335.
3 # Algorithm Description: it's a matching game that takes 2 Places from the user, if the places have the same letter then replace them with "" else pass.
4 # Version: 1.0 in Date: 22 / 2 / 2022. Started at 12 A:M, Ended at 3:35 A:M.
5 # Version: 2.0 in Date: 22 / 2 / 2022. Started at 10:40 A:M, Ended at 11:38 A:M.
6 # Version: 3.0 in Date: 22 / 2 / 2022. Started at 1:00 P:M, Ended at 3:30 P:M.
7 # Version: 4.0 in Date: 22 / 2 / 2022. Started at 9:20 A:M, Ended at 11:40 P:M.
8 # Version: 5.0 (The last one) in Date: 23 / 2 / 2022. Started at .Started at 10:15 A:M, Ended at 11:00 A:M,Started again at 2:00 P:M, Ended at 3:30 P:M.
9 # -----
10
11 # import only system from os.
12 from os import system, name
13
14 # import sleep to show output for some time period.
15 from time import sleep
16
17 # define our 2D list of elements ().
18 global list_of_elem
19 list_of_elem = [
20     [1, 'A'], [2, 'C'],
21     [3, 'F'], [4, 'E'],
22     [5, 'G'], [6, 'I'],
23     [7, 'H'], [8, 'J']
24 ]
```


Algorithm of Task 3, cipher number 1 (**Caesar cipher**):

CIPHERING:

take input from the user (text, number of shifts, direction of shifts)

if the user chose shifting to the left: {

make the number of shifts -ve

}

for each character in the text: {

$x = \text{ascii value assigned to it}$

$x += \text{number of shifts}$

}

DECIPHERING:

it is pretty similar to the ciphering

the player has to input (ciphered text, number of shifts used to cipher, direction of shifts used to cipher)

if the user chose shifting to the left: {

make the number of shifts -ve

}

for each character in the ciphered text: {

$x -= \text{number of shifts}$

}

Algorithm of Task 3, cipher number 5 (Simple Substitution Cipher):

- 1- Define a counter = 0, to count the number of times that the user used the program
- 2- Define 3 Variables (message, choose, key) to use.
- 3- Make the user gets method of the 3 methods from (1- cipher, 2-decipher, 3- both, 4- exit) to do.
- 4- If the options not equal to 4 then the program will do
 - a- Get the key from the user.
 - b- then make the encryption that depends on the key given from the user.
 - c- Then get the message from the user.
 - d- If the method that the user choose is “Cipher”, then the message will be encrypted then print the encryption message.
 - e- If the method that the user choose is “Decipher”, then the message will be decrypted then print the decrypted message.
 - f- If “both”, then we will do (d and e) together
 - g- After the progress be done, we will ask the user if he wants to use the program again
 - 1) If yes, we will call the program function again and increase the counter by 1
 - 2) If not, will close the program.

Algorithm of Task 3, Cipher number 4 (BACONIAN CIPHER):

CIPHERING:

Take input from the user (plaintext) “Enter plain text”

If the input is Alphabets

Continue...

Else

Print ” invalid input”

Array 1 char [A..Z]

Array 2 string [aaaaa..bbbbbb]

Loop for Searching for each input char in Array 1 and print from Array 2 the string with the same index

$\text{Encpt1} = \text{Encpt1} + \text{Old value}$

Nested for loops to run the outer for loop as many times as the number of char presented in the plain text

Print “ The Encrypted Text is : ” the encrypted text

DECIPHERING:

It is pretty similar to the ciphering

It will loop in Array 2 and get the index of each string and change it with the char with the same index from Array 1

$\text{decpt1} = \text{decpt1} + \text{old value}$

Print “ The Decrypted Text is : ” the decrypted text

END

Algorithm of the Problem Number 14 in book, Task 4:

- 1- We will ask the user to enter the time as (hh:mm:ss) format.
- 2- Then we will check the input
- 3- If the input is matching with the format.
 - a- We will split the input to hours, minutes, and seconds.
 - b- Then check the limit of the numbers that he entered.
 - c- If the numbers are inclusive the interval
 - 1) We will calculate the total number of seconds then print it.
 - d- If the numbers are out of the intervals then we will ask him again to enter the time in the following formatting (hh:mm:ss).
- 4- If the input doesn't match the format, then we will ask the user to enter the input again.

Algorithm of the Problem Number 6 in book, Task 4

Salary Per Hour = 16.78;

Over time pay = 0

health Insurance = 0

and define every withheld amount

Input (hours Worked, dependents)

If hours Worked are more than 40 hours{

 Extra Hours = (hours Worked - 40);

 overtime Pay = extra Hours * (salary Per Hour * 1.5);

 hours Worked -= extra Hours;}

if dependents are more than=3

 health Insurance = 35;

gross pay = (salary Per Hour * hours Worked) + overtime Pay

1-calculate every withheld money by multiplying it's percentage by the gross pay

2-output each withheld amount

3-subtract each withheld amount from the gross pay

4-output the take home pay

Algorithm of the Rational Number Calculator:

- 1- Print the Instructions of the calculator
- 2- Get the input from the user
- 3- If the input equal 'exit', then the program will close.
- 4- If the input is an operation, then we will split the input to number_1, operator, and number_2
- 5- Check the validation if the three parts of our input
- 6- If all correct, we will split every number to nominator and denominator then calculate the number itself, then calculate the whole operation which is (number_1 operator number_2), then print the result as rational number (nominator/denominator).
- 7- If the input is invalid then we will ask the user to enter the input again.

Algorithm of Problem Number 13 in the book, Task 4:

- 1-We will ask the user to enter two points .
- 2- Then we will subtract the two point .
 - a-subtract the two point's Y axis .
 - b**-subtract the two point's X axis .
- 3- $M = (y_2 - y_1) / (x_2 - x_1)$.
- 4- Print The equation of the linear equation is $C = y_1 - (m * x_1)$.
- 5-End

Git Summary

Youssef Summary:

GitHub is a Git repository hosting service which provides a web-based graphical interface. GitHub helps every team member to work together on the project from anywhere and makes it easy for them to collaborate.

Features of GitHub:

1) Easy project management:

GitHub is one place where project managers and developers coordinate, track, and update their work so projects stay transparent and on schedule.

2) Increased safety with packages:

The packages can be published privately, or within the team or publicly for the open-source community. The packages can be used or reused by downloading it from the GitHub.

3) Effective team management:

GitHub helps all the team members to stay on the same page and stay organized. Moderation tools like issue and pull request locking helps the team to focus on the code.

4) Improved code writing:

Pull requests help the teams to review, improve and propose new codes on GitHub. The implementations and proposals can be discussed before changing the source code.

5) Increased code safety:

GitHub uses tools to identify and analyze vulnerabilities to the code, that other tools tend to miss. Development teams everywhere work together to secure the software supply chain, from fork to finish.

6) Easy code hosting:

All the codes and documentations are present in one place. There are millions of repositories on GitHub and each repository has their own tools to help you host and release code.

7) Drag and Drop Gist Code:

Gist is GitHub's very own facility that allows you to host code snippets. You can also browse and find many code snippets of a variety of languages. Using Gist is downright easy and should be intuitive. But did you know that you can add codes directly from files? Simply drag and drop the files on the Gist, the codes within the files will be immediately copied. It's quick and saves you a lot of time!

8) File Finder:

Besides creating new files, you can also navigate through the files in any repository quickly. This feature is not visibly obvious as it comes in the form of a keyboard shortcut.

9) Linking Lines:

Sometimes, you might want to share and point out specific lines within the file of your repository. GitHub allows you to do this by adding #L followed by the line number at the end of file URL

10) Using GitHub Emoji:

Emojis or emoticons are tiny icons that depict an expression of some sort (mostly in the form of faces). In Facebook and Twitter, **people often express their feelings with emojis**. You **can also show emojis in GitHub**. Find all the Emoji characters and codes in the emoji cheat sheet. The emojis can be added in README.md file of the repository, Wiki, and in the Issues thread.

Aly Summary:

summary of what I learned in the get course I can make a repository (It contains the files of the project) and any one can take a clone of it to fix some bugs or add some features.

I can take a clone of the remote repo using the command `<git clone "repo's link">`.

when I am done with the changes, I must commit the file to my local repo with the command `<git commit "a message of what you have done">`.

after committing I can upload the file to the remote repo using `<git push origin "branch name">`.

If you are not the owner of the repo you must make pull request in order to push the file you can also pull files from the remote repo to the local repo using command `<git pull origin>`

you can configure the repo (local or remote) using `<git config --"global or local" "configuration like user.name">`

you can see the list of configurations using the command `<git config -l>` or view the full manual `< git help config>`

you can make a key instead of having to inter username and password using command `<ssh-keygen -t rsa "number of bits" -c "email">` then you

can enter passphrase, which is like a password, then a key will be generated, then you have to go to github and go to ssh key and add a key. now when you open your cmd and want to connect to your github account you will use the command `ssh -T git@github.com`

you can create your own local repo through the cmd using the command `git init` which initializes empty git repo in the location where you wrote the command

you can make a file using touch "fileName.extention".

you can add the file to the local repo using `git add "fileName.extention"`, then you can make the remote repo using command `git add remote origin "link of the repo from the site"`

Mohamed Summary:

Git is an **Open-Source Distributed Version Control System**.

Which is make the connection between the team is very easy.

Git Commands:

(git clone <URL>): It gets the repository from the server to your own computer.

(git Status): It tells u about the last updates in the repository.

(git add "Name of the file"): it adds the files to your own clone.

(git commit -m "Comments"): "Initial Commit" is the commit message here. Enter a relevant commit message to indicate what code changes were done in that particular commit.

(git push -u origin branch): it uploads the commits to the remote server.

(git pull origin master): it downloads the final updates to your pc.