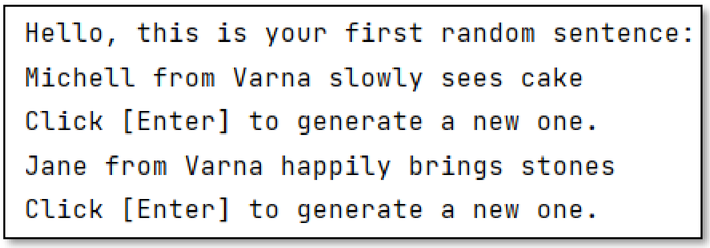
Practical Project: Random Sentences Generator

This is an additional practical project, and **it is not mandatory and it is not included in the final score**. The main purpose is to use gained knowledge in different types of problems and to improve your portfolio and GitHub skills.

This **random sentence generator** is just for fun! These sentences can provide humor and be a cool way to surprise others by sharing a standout sentence on social media platforms and gathering your network's reaction.



```
Hello, this is your first random sentence:
Michell from Varna slowly sees cake
Click [Enter] to generate a new one.
Jane from Varna happily brings stones
Click [Enter] to generate a new one.
```

1. Create GitHub Repository

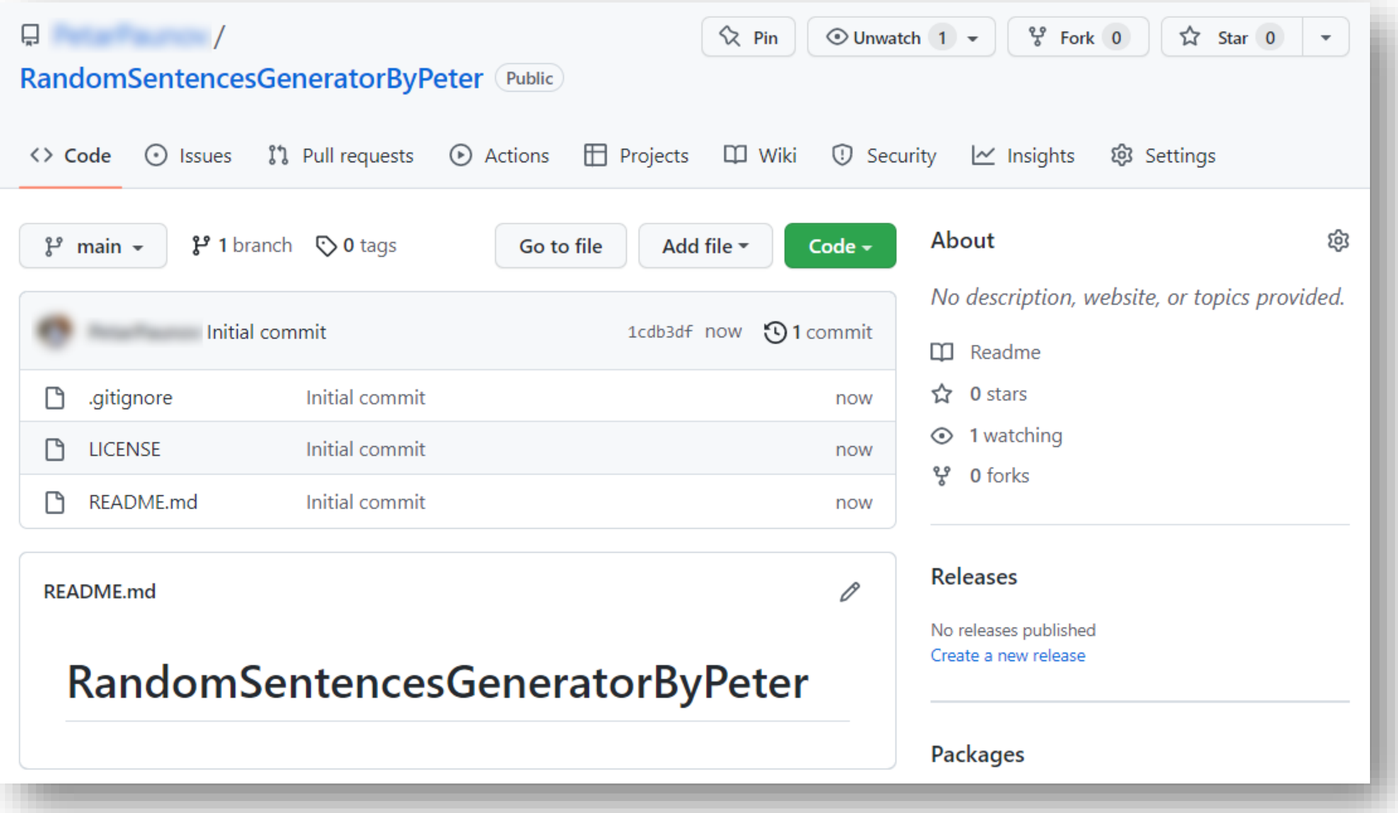
Create a **new repository** from https://github.com/new. Choose a **meaningful name**, e. g. "**RandomSentencesGeneratorByUsername**", add a **short description,** and make your repo **public**. Also, **add a README.md** file and **.gitignore for Python**. Finally, **change the license** to "**MIT** and click on the **[Create] button** to **create your repository**.

Please choose **your original and unique name** for your project!

Your GitHub profile should be **unique**.

You can follow this tutorial, but you can also **make changes** and **implement your project differently**.

Now your **repository is created** and should look like this:



Now let's see how to **write the code** of our application.

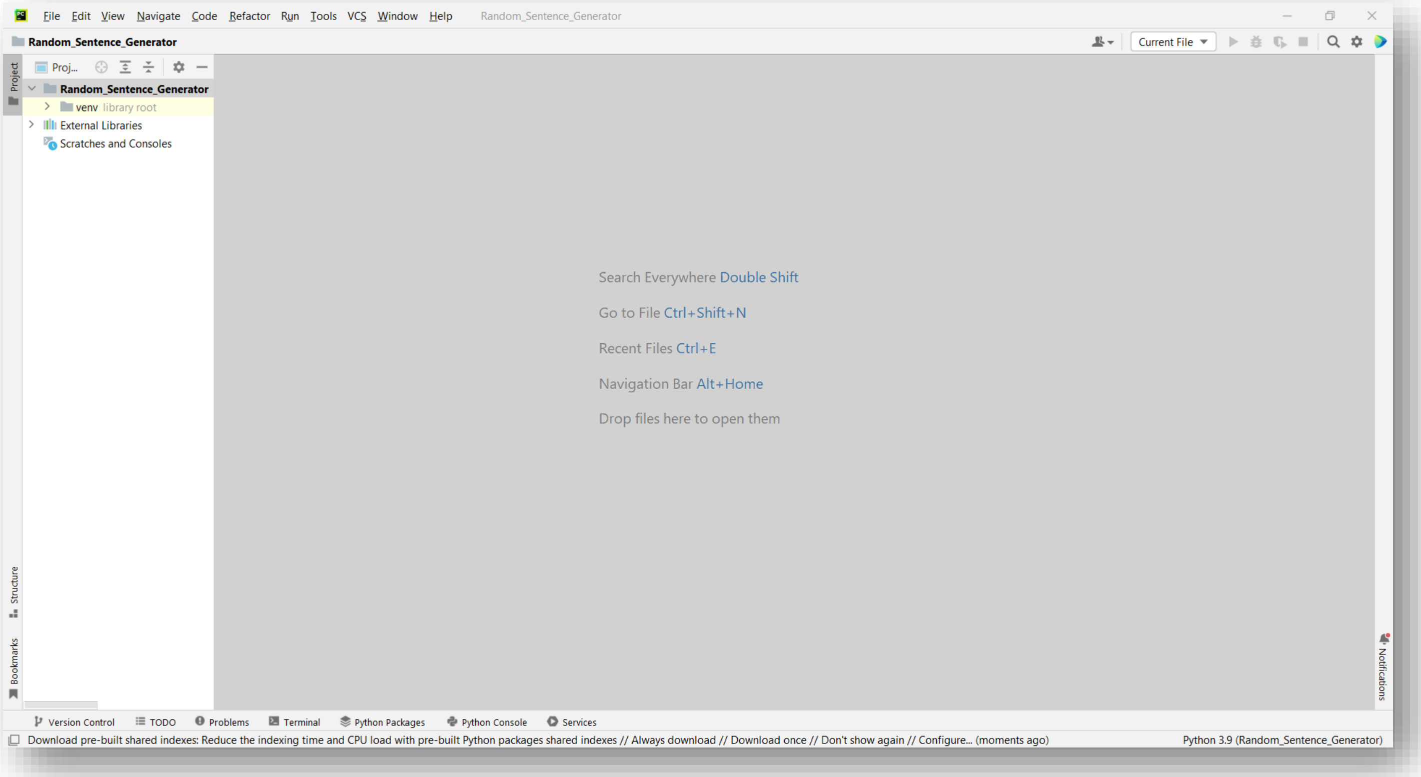
2. Write the Sentences Generator Code

Let's create the application and play with it.

Create a PyCharm Project

First, we should **start PyCharm** and **create a new Python project**. Then, **choose an appropriate name** and a **place to save the project**.

Our project should be created and should look like this:



Search Everywhere Double Shift

Go to File Ctrl+Shift+N

Recent Files Ctrl+E

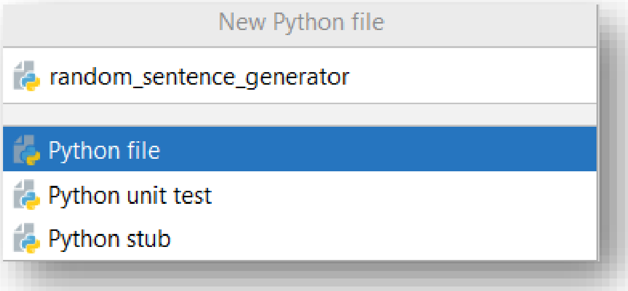
Navigation Bar Alt+Home

Drop files here to open them

Download pre-built shared indexes: Reduce the indexing time and CPU load with pre-built Python packages shared indexes // Always download // Download once // Don't show again // Configure... (moments ago)

Python 3.9 (Random_Sentence_Generator)

We should create a **new Python file** with the name of the game.



random_sentence_generator

Implement the Generator Logic

Now let's start working on our project.

Create the Sentence Model

To create our **sentences** we are going to need: **names**, **places**, **verbs**, **nouns**, **adverbs,** and **details**. The **sentence** that we will create is based on the following **model**:

- One **`sentence`** needs **`[Who from where] [Action] [Detail]`** to be created.
    - "**`Who from where`**" example: **`[Name`** + from + **`Place]`** ("David from London").
    - "**`Action`**" example: **`[Adverb]`** + **`[Verb]`** + **`[Noun]`** ("calmly watched the sunset").
    - "**`Detail`**" example: "near the river", "at home", "in the park".

Add Words for the Sentences

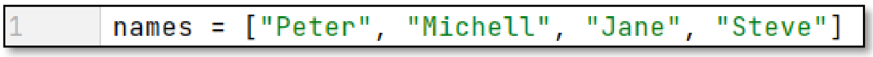
Let's start by creating **lists** with all the **words** we will use to create a **random sentence**. **Lists** are used to **store multiple** values in a **single variable**, instead of **declaring separate variables** for each **value**.

To **declare** a **list**, we use **square brackets or** "`list()`".

Now let's create our first **list** and call it "**`names`**". To fill the **list** we will use **brackets**. Inside the **brackets**, write **names**, **separated** by a **comma**. These are some example names that you can use:

```
"Peter", "Michell", "Jane", "Steve"
```

Your list should look like this:



```
names = ["Peter", "Michell", "Jane", "Steve"]
```

Now we need to create **lists** with words for "**places**", "**verbs**", "**nouns**", "**adverbs**" and "**details**". Do this by yourself. Here are some **words** you can use:

- **Places:**

  ```
  "Sofia", "Plovdiv", "Varna", "Burgas"
  ```

- **Verbs:**

  ```
  "eats", "holds", "sees", "plays with", "brings"
  ```

- **Nouns:**

  ```
  "stones", "cake", "apple", "laptop", "bikes"
  ```

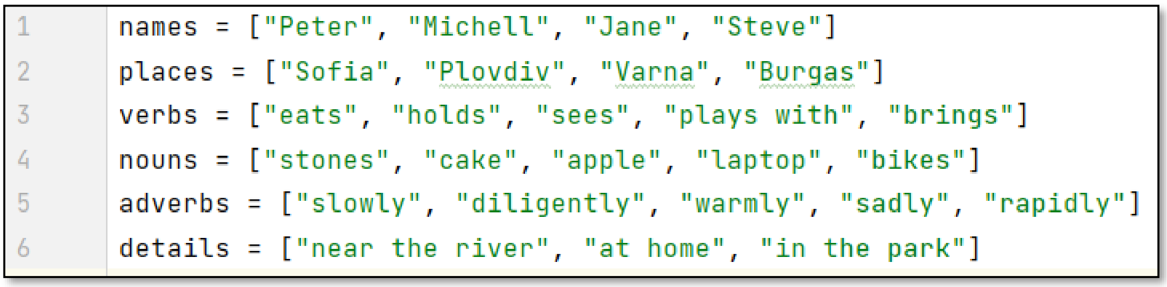
- **Adverbs:**

  ```
  "slowly", "diligently", "warmly", "sadly", "rapidly"
  ```

- **Details:**

  ```
  "near the river", "at home", "in the park"
  ```

Finally, the lists should look like this:



```
names = ["Peter", "Michell", "Jane", "Steve"]
places = ["Sofia", "Plovdiv", "Varna", "Burgas"]
verbs = ["eats", "holds", "sees", "plays with", "brings"]
nouns = ["stones", "cake", "apple", "laptop", "bikes"]
adverbs = ["slowly", "diligently", "warmly", "sadly", "rapidly"]
details = ["near the river", "at home", "in the park"]
```

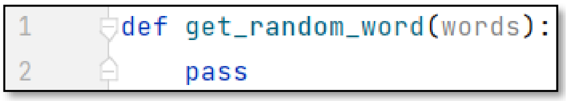
Create a Function for Getting a Random Word

Now we are going to create a **function**. Generally, **functions** are useful to **improve** code **reusability** by **reducing** code **duplication**. If we have the same **functionality** to perform in **multiple places**, then we can create one **function** with the required **functionality** and reuse it wherever it is **necessary** for the **application**. In our case, the **function** will help us choose **random words** every time.

To create a **function** you need the following things:

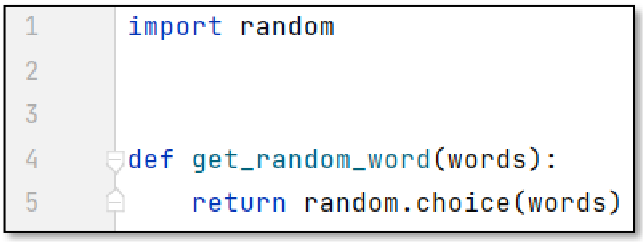
- First, the reserved word "**`def`**".
- Second, we need a **name** for the **function**.
- Third, we should define **parameters** that the **function** will receive

Do it as follow:



```
def get_random_word(words):
    pass
```

Now let's write the function logic. First, we need to import the library **"random"**, then we will return the value from the method "**`random.choice()`**":



```
import random


def get_random_word(words):
    return random.choice(words)
```

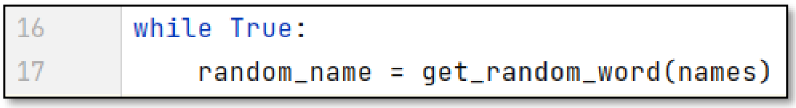
Note: The "`choice()`" method returns a randomly selected element from the specified sequence.

More info: https://www.w3schools.com/python/ref_random_choice.asp

It's time for the easy part – let's make the generator work.

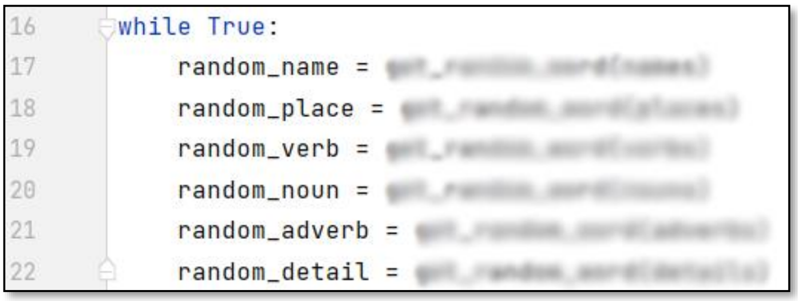
First, we should create an endless **`while` loop** and create **variables** for all different **random words**. To do this we will use our **function `get_random_word()`**, which will do all the work for us.

Second, create a **variable** and name it "**`random_name`**". Make the **variable** keep the result from our **`get_random_word()`** function and **pass our words list** as an **argument** to the function. Do it as follow:



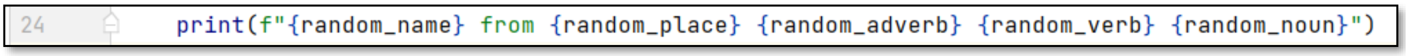
```
while True:
    random_name = get_random_word(names)
```

Now try to create **variables** for the other **words** yourself. They should all **pass the necessary lists** and **keep the results** from the **`get_random_word()` function**. Finally, it should look like this:



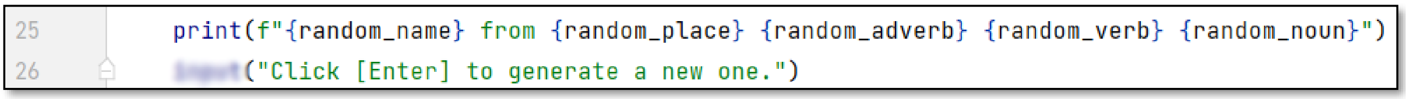
```
while True:
    random_name = [redacted]
    random_place = [redacted]
    random_verb = [redacted]
    random_noun = [redacted]
    random_adverb = [redacted]
    random_detail = [redacted]
```

Next thing is to **construct** our **random sentence** and **print it** on the console. Remember the **model** that we are working on - we need "**Who from where**", then "**Action**" and last "**Details**":



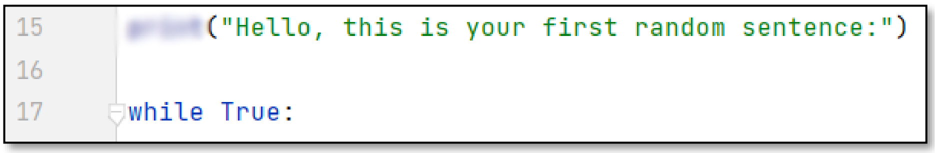
```
    print(f"{random_name} from {random_place} {random_adverb} {random_verb} {random_noun}")
```

Now what is left is to **write** the **sentence** on the **console**. Next, write a **message** to the user to press **`[Enter]`** to **generate** a new **sentence** and **read** his **input**. You know how to do that:



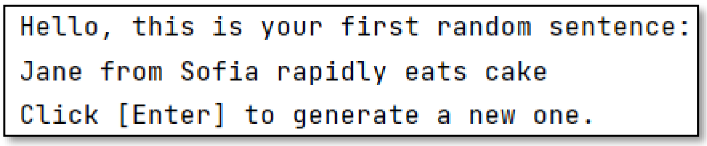
```
    print(f"{random_name} from {random_place} {random_adverb} {random_verb} {random_noun}")
    [redacted]("Click [Enter] to generate a new one.")
```

You can also **write** a **greeting message** before the **`while loop`**:

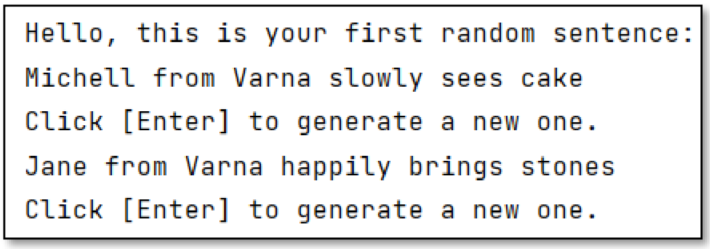


```
[redacted]("Hello, this is your first random sentence:")

while True:
```

This is all it takes to **finish** our **project**, after you run it, the generator should look like this:



```
Hello, this is your first random sentence:
Jane from Sofia rapidly eats cake
Click [Enter] to generate a new one.
```



```
Hello, this is your first random sentence:
Michell from Varna slowly sees cake
Click [Enter] to generate a new one.
Jane from Varna happily brings stones
Click [Enter] to generate a new one.
```

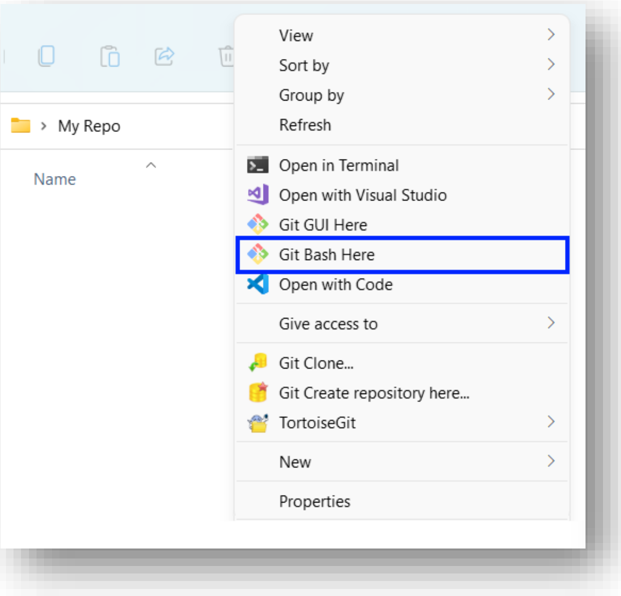
Now let's upload it to **`GitHub`**.

3. Upload Your Project to Github

We already know how to clone our repository by using **Git Bash** or **GitHub Desktop**.

Use GitBash (Option 1)

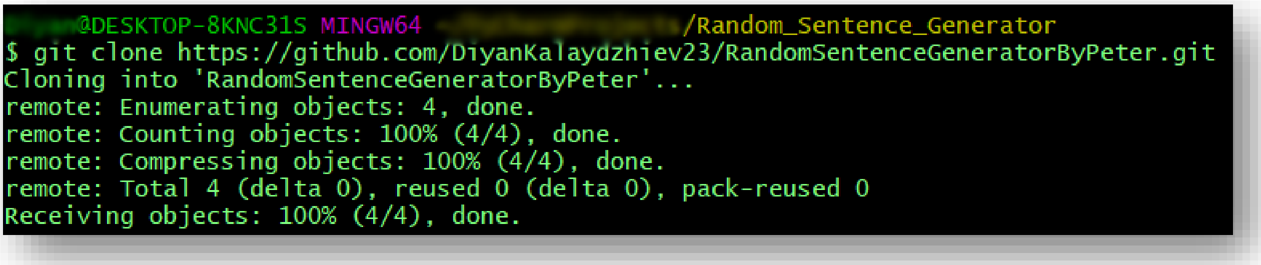
Go to the desired **directory**, right-click on a blank space **anywhere** in the folder, and select "**Git Bash Here**" to open the Git command line console. If the "**Git Bash Here**" menu is missing, you should first install Git.



Type the **"`git clone`"** command followed by the link to your **repository**:

```
git clone
```

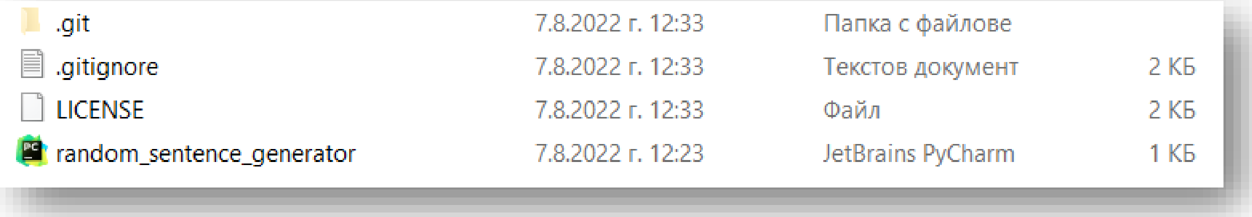
This command is for cloning with **Git Bash**, paste your **repository URL** after the command.



```
[redacted]@DESKTOP-8KNC31S MINGW64 [redacted]/Random_Sentence_Generator
$ git clone https://github.com/DiyanKalaydzhiev23/RandomSentenceGeneratorByPeter.git
Cloning into 'RandomSentenceGeneratorByPeter'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), done.
```

Your files from your GitHub repo will be downloaded to a **sub-folder** called as your project in GitHub, "**RandomSentencesGeneratorByPeter**" in our case.

The next thing to do is to add your project files to your cloned repository folder. It should look like this:



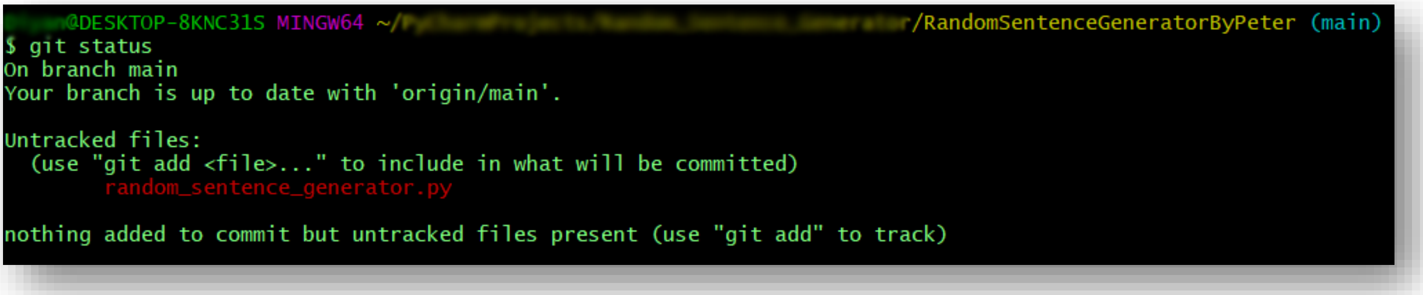
.git	7.8.2022 г. 12:33	Папка с файлове	
.gitignore	7.8.2022 г. 12:33	Текстов документ	2 КБ
LICENSE	7.8.2022 г. 12:33	Файл	2 КБ
random_sentence_generator	7.8.2022 г. 12:23	JetBrains PyCharm	1 КБ

Now we are ready to upload our changes from "**Git Bash clone**". Go to the desired **folder**, right-click on a blank space anywhere in the folder, select "**Git Bash Here**" and run the following **commands**.

Type the following command:

```
git status
```

The **git status** command displays the state of the working directory and the **staging area**.



```
[redacted]@DESKTOP-8KNC31S MINGW64 ~/[redacted]/RandomSentenceGeneratorByPeter (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        random_sentence_generator.py

nothing added to commit but untracked files present (use "git add" to track)
```

Now type:

```
git add .
```

This command **adds** all modified files.

Next type:

```
git commit -m "Your message here"
```

This command **commits** your changes. We also should **add** an appropriate **message**.

Second to the last type.

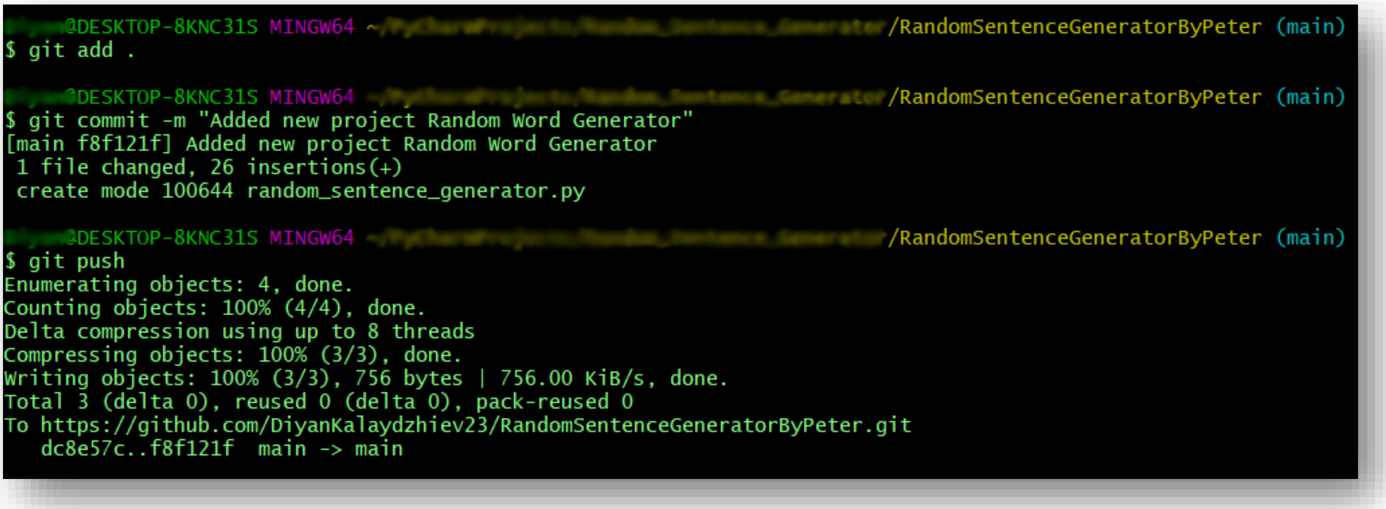
```
git pull
```

This command **updates** your local **repository**.

Now the last thing that we should do is to **push** our changes by using the command:

```
git push
```

This command **pushes** your changes to our local **repository**.



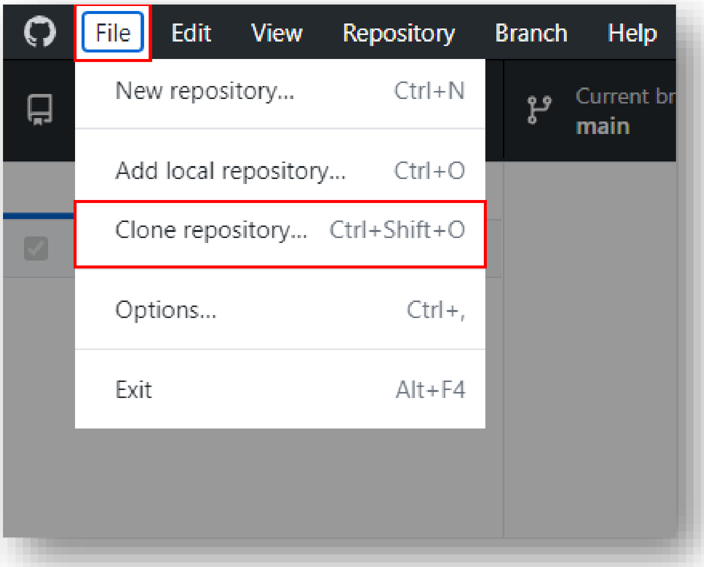
```
[redacted]@DESKTOP-8KNC31S MINGW64 ~[redacted]/RandomSentenceGeneratorByPeter (main)
$ git add .

[redacted]@DESKTOP-8KNC31S MINGW64 ~[redacted]/RandomSentenceGeneratorByPeter (main)
$ git commit -m "Added new project Random Word Generator"
[main f8f121f] Added new project Random Word Generator
 1 file changed, 26 insertions(+)
 create mode 100644 random_sentence_generator.py

[redacted]@DESKTOP-8KNC31S MINGW64 ~[redacted]/RandomSentenceGeneratorByPeter (main)
$ git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 756 bytes | 756.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/DiyanKalaydzhiev23/RandomSentenceGeneratorByPeter.git
   dc8e57c..f8f121f  main -> main
```

This is all you need to **update** your **repository** with **`Git Bash`**.

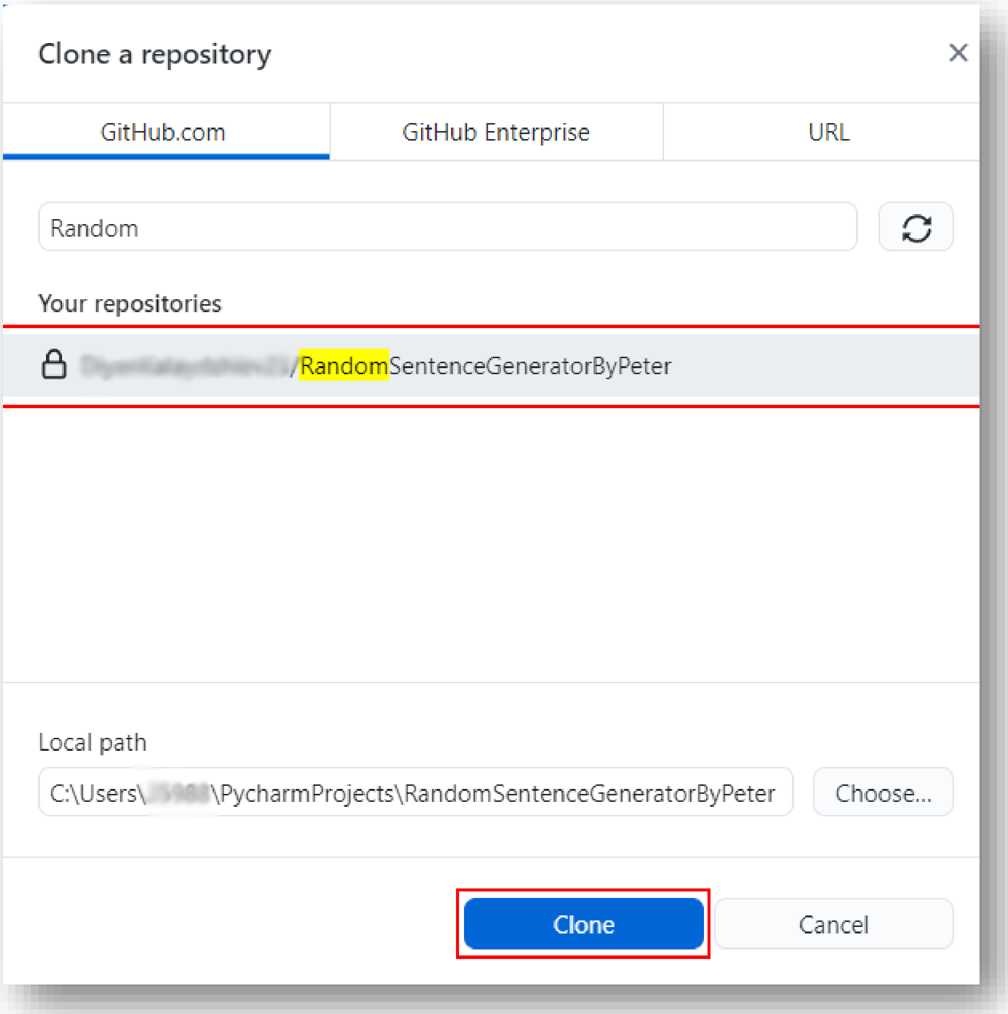
Use GitHub Desktop (Option 2)

If you don't have GitHub Desktop on your computer, download and install it from here: https://desktop.github.com/

Go to **"File"** and chose **"Clone repository".**



Chose the repository for the project, in our case "RandomWordsGeneratorByPetar" and hit the **"Clone"** button.



Clone a repository

GitHub.com | GitHub Enterprise | URL

Random

Your repositories

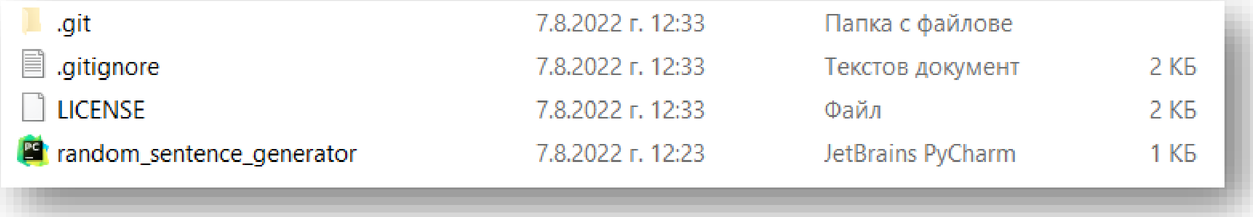
[redacted]/RandomSentenceGeneratorByPeter

Local path

C:\Users\[redacted]\PycharmProjects\RandomSentenceGeneratorByPeter

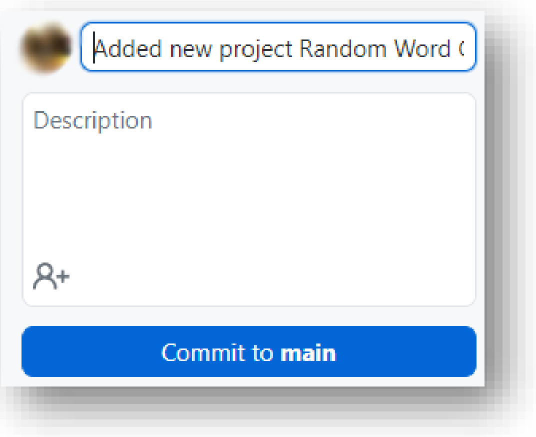
Your files from your GitHub repo will be downloaded to a **sub-folder** called as your project in GitHub, "**`RandomSentencesGeneratorByPeter`**" in our case.

The next thing to do is to add your project files to your cloned repository folder. It should look like this:

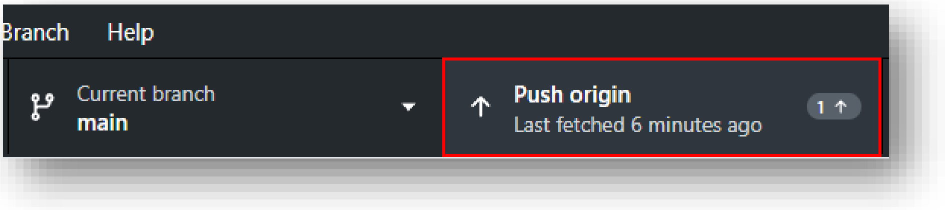


.git	7.8.2022 г. 12:33	Папка с файлове	
.gitignore	7.8.2022 г. 12:33	Текстов документ	2 КБ
LICENSE	7.8.2022 г. 12:33	Файл	2 КБ
random_sentence_generator	7.8.2022 г. 12:23	JetBrains PyCharm	1 КБ

After that go to GitHub Desktop and **create a commit**, just like this.



Then **push the commit** to the repository.



This is all you need to **update** your **repository** using **`GitHub` Desktop.**

4. * Modify the Code, Write Your Own Features

Now, it's time to **play with the code** and **modify it**.

⚠	This is your own project. **Be unique**. Don't be a copy/paster! • Implement your **own features**. • **Implement the code yourself**, using your own coding style, code formatting, comments, etc. • Make the project **more interesting**. Learn by playing with the code and adding your own changes.

Below are a few **ideas** of what you can implement or modify as an addition to your code.

Add More Words

You can think of **more words to add** to make the sentences more interesting and fun.

Try Different Sentence Structures

You can **change your sentence** and make it more complex:

- You can turn your **sentence to a question**: **`["Who" question word/phrase]`** + **`[Verb]`** + **`[Subject]`** + **`[Main Verb]`** + **`[Object or Other Information]`**.
- You can add **more sentence parts** in the right places or **change the place of the current ones**.
- You can think of more ways to change your sentence.

Additional Ideas

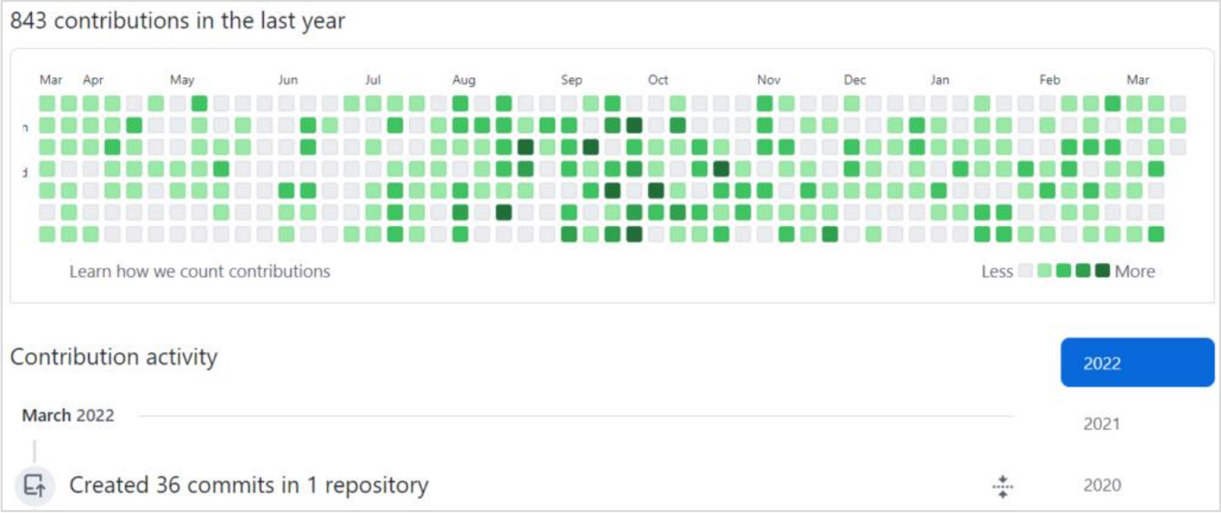
- Consider a way to create a more **complex sentence generator**.

    - Example of a more complex generator: http://lomacar.github.io/Random-Sentence-Generator.
- You can add anything else in your code, based on your own ideas?

Commit to GitHub

Now **commit and push your code changes** to your GitHub repo!

⚠ It is very important to **commit frequently** your code to GitHub. This way you create a **rich commit history** for your project and your GitHub contribution graph is growing:



843 contributions in the last year

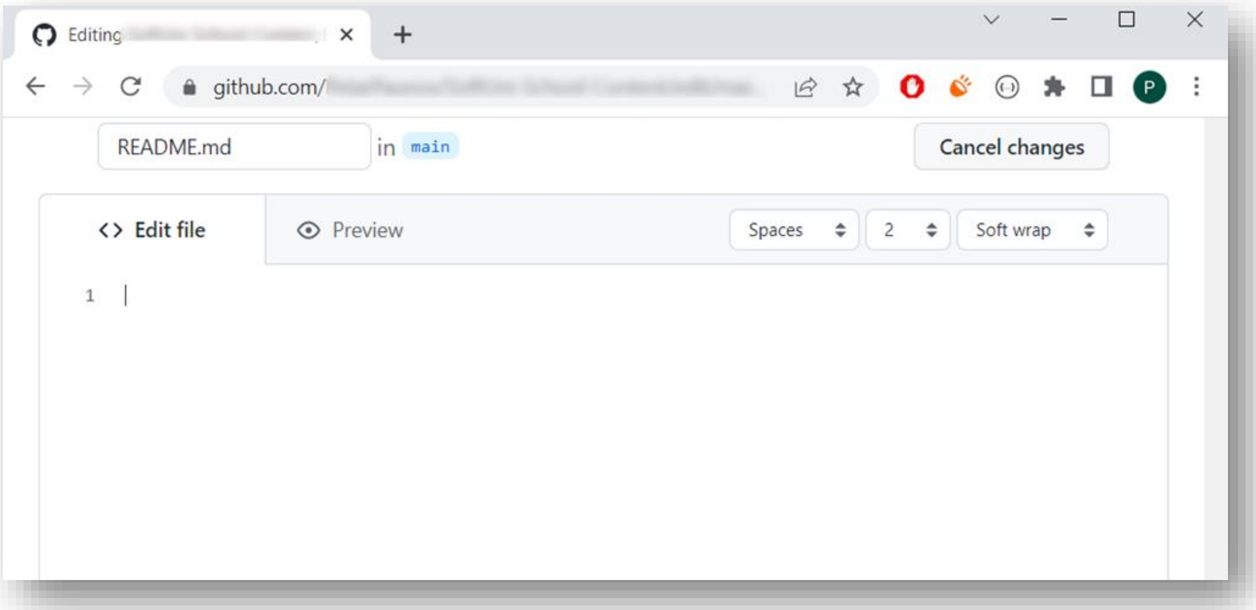
Contribution activity

March 2022

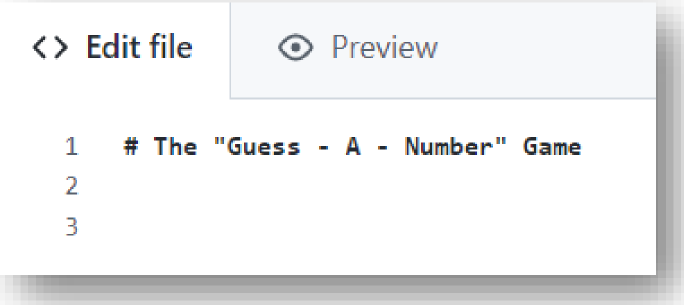
Created 36 commits in 1 repository

5. Create a README.md File

It's highly recommended to provide documentation as part of your 'project on GitHub to describe what the project is doing. So, let's make one for this **project**. Let's start by editing the **`README.md`** file from our repo on GitHub:



Add a project name. Use **"#"** in front of the text to indicate the **title**:



```
# The "Guess - A - Number" Game
```

You can **view** the current progress by pressing the `[Preview]` button:

Documentation Sections

Add **information** about your project in your **`README.md`** file: project goals, technologies used, screenshots, live demo, etc. Typically, you should have the following **sections**:

- **Project title** (should answer the question "What's inside this project)
- **Project goals** (what problem we solve, e. g. we implement a certain game)
- **Solution** (should describe how we solve the problem → algorithms, technologies, libraries, frameworks, tools, etc.)
- **Source code link** (give a direct link to your source code)
- **Screenshots** (add screenshots from your project in different scenarios of its usage)
- **Live demo** (add a one-click live demo of your code)

Use Markdown

Note that the GitHub **`README.md`** file is written in the **Markdown language**. Markdown combines text and special formatting tags to describe formatted text documents.

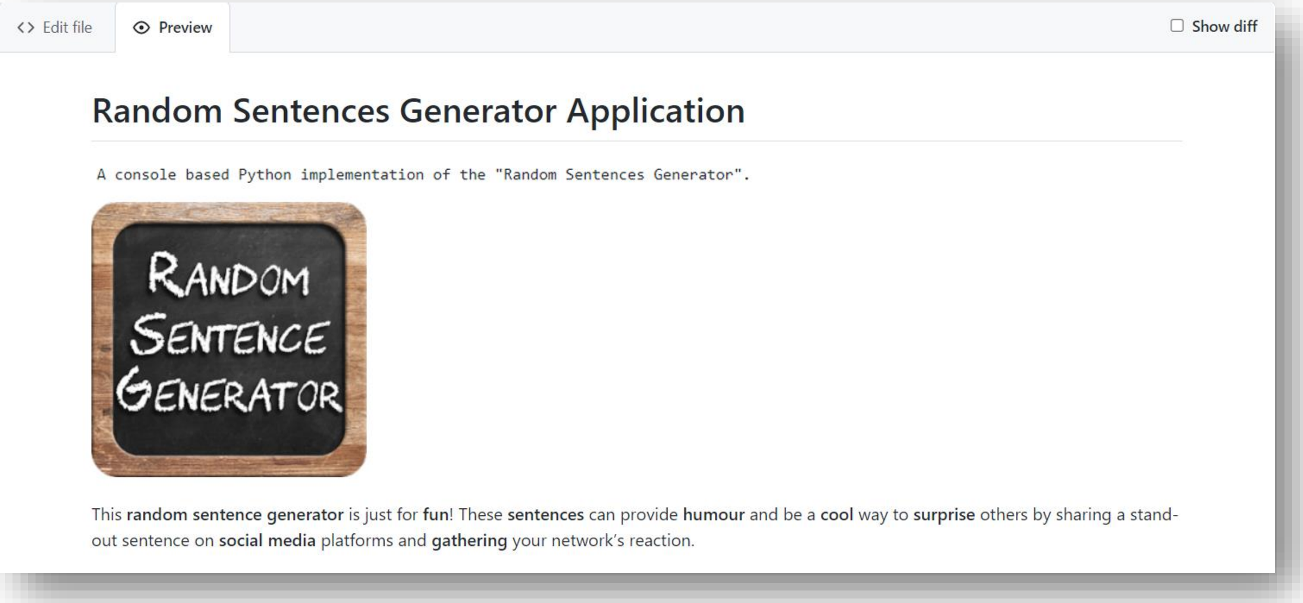
You can learn more about **Markdown** here: https://docs.github.com/en/get-started/writing-on-github/getting-started-with-writing-and-formatting-on-github/basic-writing-and-formatting-syntax.

Project Goals

Start your documentation by describing your **project goals**. What problem does your project solve?

Sample Documentation

This is an **example** of how you can document your project. Don't copy-paste it!



Random Sentences Generator Application

`A console based Python implementation of the "Random Sentences Generator".`

This **random sentence generator** is just for **fun**! These **sentences** can provide **humour** and be a **cool** way to **surprise** others by sharing a stand-out sentence on **social media** platforms and **gathering** your network's reaction.

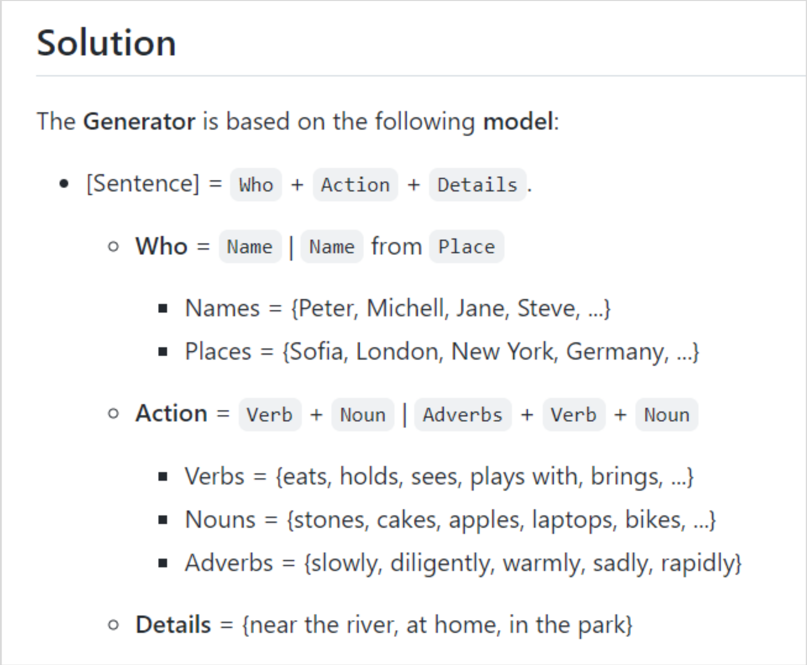
!	**Write the project documentation yourself**. Don't copy/paste it! This is your **unique GitHub profile** and your own unique project. **Be different** from others.

Find an **appropriate image** and add it. You can add **images** as follows:

```
<img alt="Image" width="200px" src="[redacted]" />
```

Your Solution

Describe how you **solve the problem**: algorithms, technologies, libraries, frameworks, tools, etc:

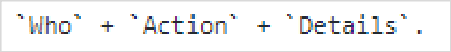


Solution

The **Generator** is based on the following **model**:

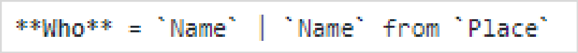
- [Sentence] = `Who` + `Action` + `Details`.
  - **Who** = `Name` | `Name` from `Place`
    - Names = {Peter, Michell, Jane, Steve, ...}
    - Places = {Sofia, London, New York, Germany, ...}
  - **Action** = `Verb` + `Noun` | `Adverbs` + `Verb` + `Noun`
    - Verbs = {eats, holds, sees, plays with, brings, ...}
    - Nouns = {stones, cakes, apples, laptops, bikes, ...}
    - Adverbs = {slowly, diligently, warmly, sadly, rapidly}
  - **Details** = {near the river, at home, in the park}

You can use the **backtick** (`) at the **start** and **end** of the **word** to make it **grey**:



```
`Who` + `Action` + `Details`.
```

You can also use the **double-asterisk** (**) at the **start** and **end** of the word to **bold** it:



```
**Who** = `Name` | `Name` from `Place`
```

Link to the Source Code

Add a **link** to your **source code** as follows:

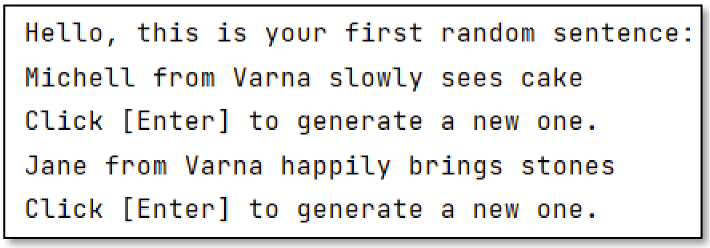
```
[Source Code](random_sentence_generator.py)
```

Screenshots

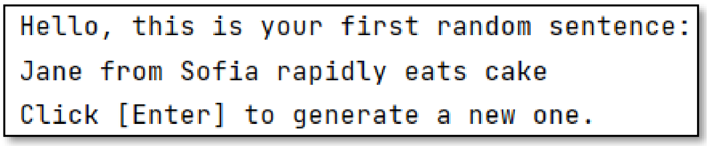
Add **screenshots** of your project:

1. **Take a screenshot** with your favorite tool (e.g., Windows).
2. **Paste** the screenshot in the GitHub Markdown editor, using **[Ctrl+V]**:

Example screenshots for the "**Random Sentences Generator**" game:



```
Hello, this is your first random sentence:
Michell from Varna slowly sees cake
Click [Enter] to generate a new one.
Jane from Varna happily brings stones
Click [Enter] to generate a new one.
```

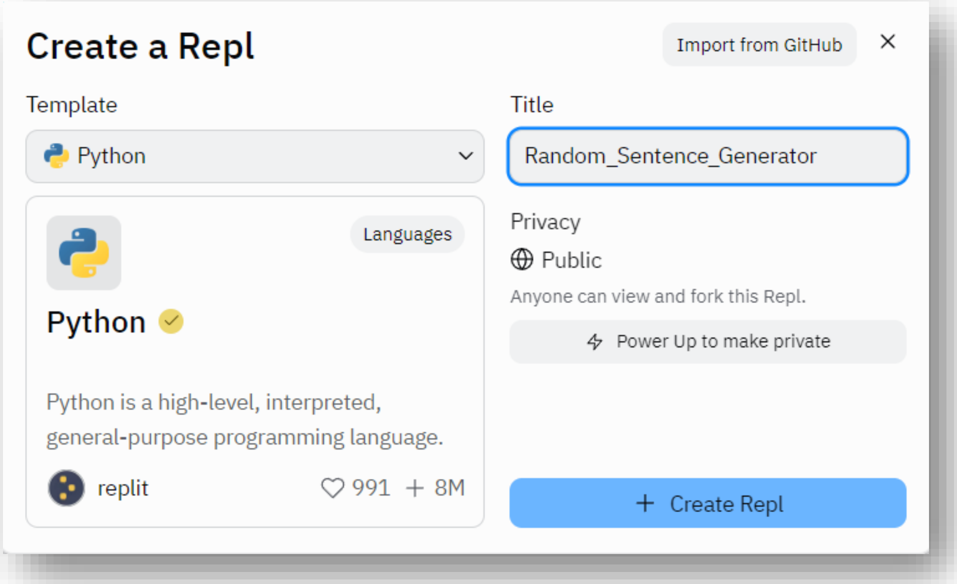


```
Hello, this is your first random sentence:
Jane from Sofia rapidly eats cake
Click [Enter] to generate a new one.
```

6. Upload Your App to Replit

You already should have a **Replit** profile. Now let's add our **project** there so we can share it with our **friends** and add it to our **GitHub** profile. You already should know how to do that.

Open the **menu** in the upper **left corner**. Click "**Create**", then select the **language** in which your project is **written**, select a name, and **create** the project. Choose Python.



Create a Repl

Template: Python

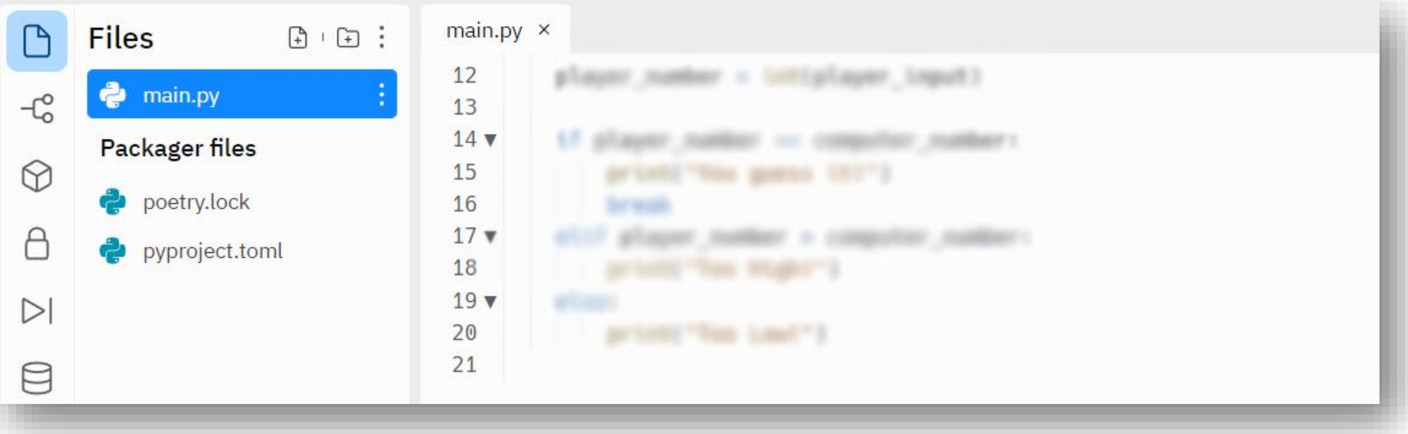
Title: Random_Sentence_Generator

Privacy: Public

Anyone can view and fork this Repl.

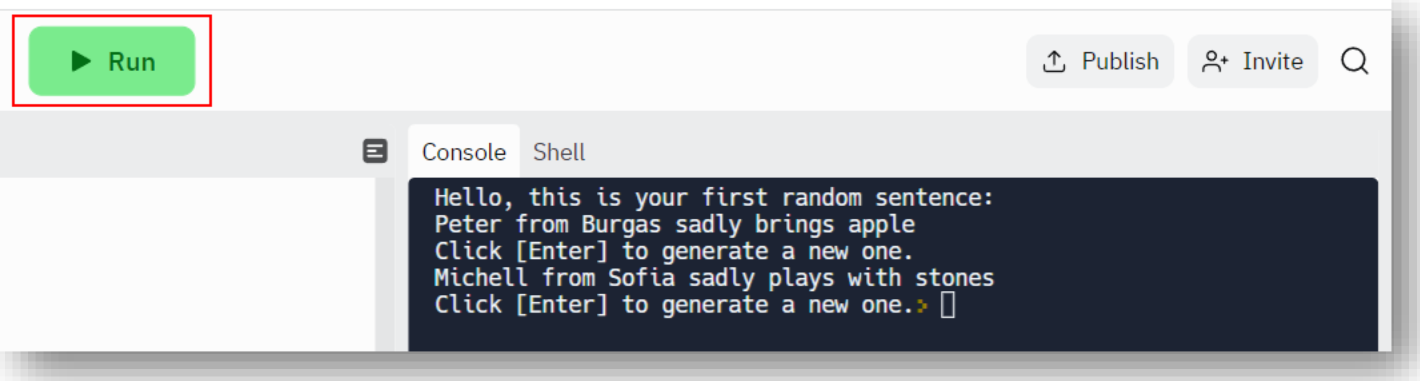
Python is a high-level, interpreted, general-purpose programming language.

Paste your code in the "**main.py**" file:



```
player_number = int(player_input)

if player_number == computer_number:
    print("You guess it!")
    break
elif player_number > computer_number:
    print("Too High!")
else:
    print("Too Low!")
```

Click **[Run]** and enjoy your console application.

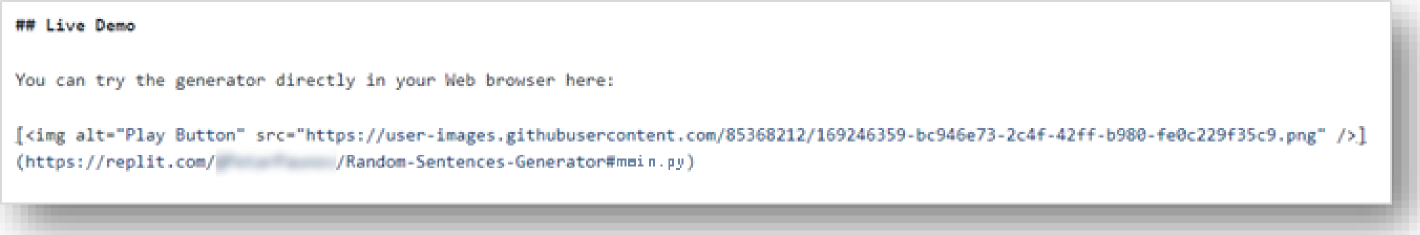


```
Hello, this is your first random sentence:
Peter from Burgas sadly brings apple
Click [Enter] to generate a new one.
Michell from Sofia sadly plays with stones
Click [Enter] to generate a new one.
```

You can now **share** your app with your friends.

7. Add Replit Link to Your README.md

Now add a "**one-click live demo**" of your project from your **GitHub** project documentation. You can do it as follows:



```
## Live Demo

You can try the generator directly in your Web browser here:

[<img alt="Play Button" src="https://user-images.githubusercontent.com/85368212/169246359-bc946e73-2c4f-42ff-b980-fe0c229f35c9.png" />]
(https://replit.com/[redacted]/Random-Sentences-Generator#main.py)
```

You can take a **screenshot** from Replit.com and **paste it** into the GitHub documentation editor directly with **[Ctrl+V]**.

Now we have completed our **Random Sentences Generator** and we have a new **project** in our **GitHub** portfolio.