# Practical Project: Random Sentences Generator


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-generated sentence:
Peter from Plovdiv sadly sees stones in the park
Click [Enter] to generate a new one.
```

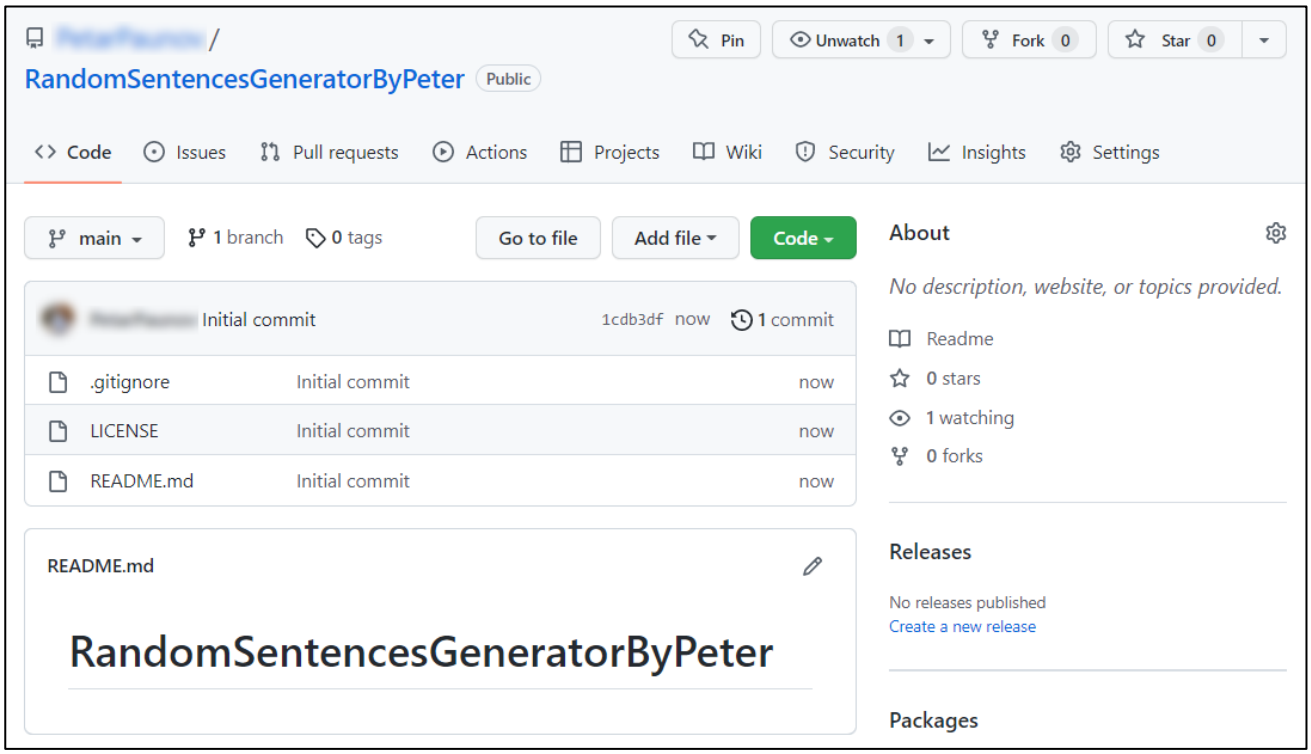
```
Hello, this is your first random-generated sentence:
Jane from Sofia diligently holds apple in the park
Click [Enter] to generate a new one.

Steve from Plovdiv warmly plays with cake at home
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 IntelliJ**. 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!<br>Your GitHub profile should be **unique**, not the same as your classmates.<br>You can follow this tutorial, but you can also **make changes** and **implement your project differ** from your classmates. |

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



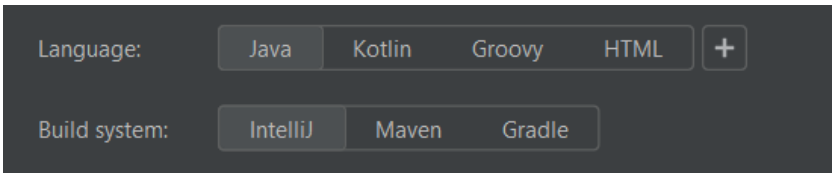

Now let's see how to **write the code** of our application.

# 2. Write the Sentences Generator Code

Let's create the application and play with it.

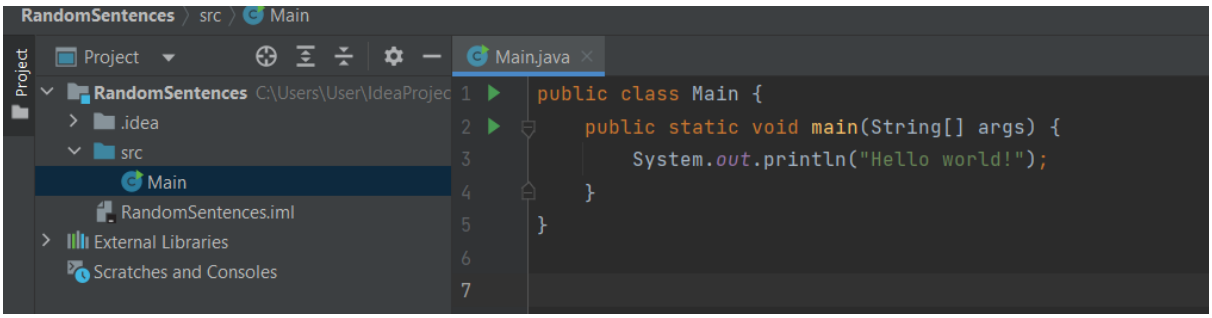
## Create an IntelliJ Project

First, we should **start IntelliJ IDEA** and **create a new Java project**. Then, **choose an appropriate name** and a **place to save the project**. On the next screen, choose:

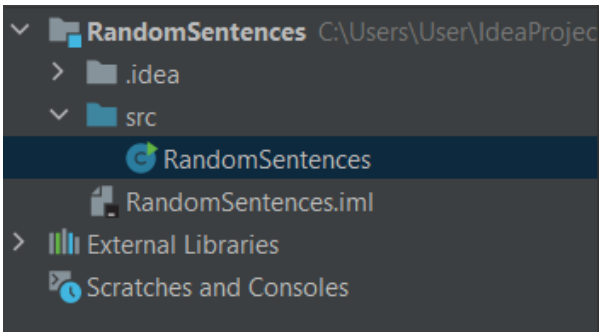



create the project.

Our project should be created and should look like this:




Before we continue, let's change the **name** of our main class to something more **meaningful**:




## 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 **arrays** with all the **words** that we are going to use to create a **random sentence**. **Arrays** are used to **store multiple** values in a **single variable**, instead of **declaring separate variables** for each **value**.

To **declare** an **array**, define its **variable type** with **square brackets**, do it as follow:

```
String[] names;
```

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

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

Your array should look like this:

```
String[] names = { "Peter", "Michell", "Jane", "Steve" };
```

Now we need to create **arrays** 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, arrays should look like this:

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

More information about **arrays**: https://www.geeksforgeeks.org/array-class-in-java/.

## Create a Method for Getting a Random Word

Now we are going to create a **method**. Generally, **methods** 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 **method** with the required **functionality** and reuse it wherever it is **necessary** for the **application**. In our case, the **method** will help us choose **random words** every time.

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

- First, our method should have a **return type `string`**.
- Second, we need a **name** for the **method**.
- Third, we should define the **parameters** that the **method** will receive.

Do it as follow:

```
public static String getRandomWord(String[] words){

}
```

Now let's write the method logic. First, we need to create a **variable** from the type **`Random`** – you already know how to do that:

```
public static String getRandomWord(String[] words){
    Random random = new Random();
}
```

Now we should use the **`nextInt()` method** of the **`Random`** class to **choose a random index**. However, the index should **not be greater than the length of the words array**, so do it like this:

```
int randomIndex = random.nextInt(words.length);
```

Next thing is to create a **variable** of type **`string`** for **our random generated word**. This word will be on the **randomly-generated index** from the **`words` array**:

```
String word = words[randomIndex];
```

The last thing we should do is to **return** our **random** generated **word** to the method:

```
    return word;
}
```

Now our **method `getRandomWord()`** is created and ready to use. It looks like this:

```
public static String getRandomWord(String[] words){
    Random random = new Random();
    int randomIndex = random.nextInt(words.length);
    String word = words[randomIndex];
    return word;
}
```

More information about **methods**: https://www.geeksforgeeks.org/methods-in-java/.

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

## Implement Generator Logic

First, we should create an endless **`while loop`**. You already know how to do this:

```
while (true) {

}
```

Now we should create **variables** for all different **random words**. To do this we will use our **method `getRandomWord()`**, which will do all the work for us.

First, create a **variable** from the typed **`String`** and name it "**`randomName`**". Make the **variable** keep the result from our **`getRandomWord()`** method and **pass our `words` array** as an **argument** to the method. Do it as follow:

```
while (true) {
    String randomName = getRandomWord(names);
```

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

```
String randomName = getRandomWord(names);
String randomPlace = [illegible]
String randomVerb = [illegible]
String randomNoun = [illegible]
String randomAdverb = [illegible]
String randomDetail = [illegible]
```

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**":

```
System.out.printf("%s from %s %s %s %s %s%n", randomName, randomPlace, randomAdverb, randomVerb, randomNoun, randomDetail);
```

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:

```
System.out.printf("%s from %s %s %s %s %s%n", randomName, randomPlace, randomAdverb, randomVerb, randomNoun, randomDetail);
System.out.println("Click [Enter] to generate a new one.");
```

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

```
System.out.println("Hello, this is your first random-generated 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-generated sentence:
Jane from Sofia diligently holds apple in the park
Click [Enter] to generate a new one.

Steve from Plovdiv warmly plays with cake at home
Click [Enter] to generate a new one.

Jane from Varna rapidly holds laptop at home
Click [Enter] to generate a new one.
```

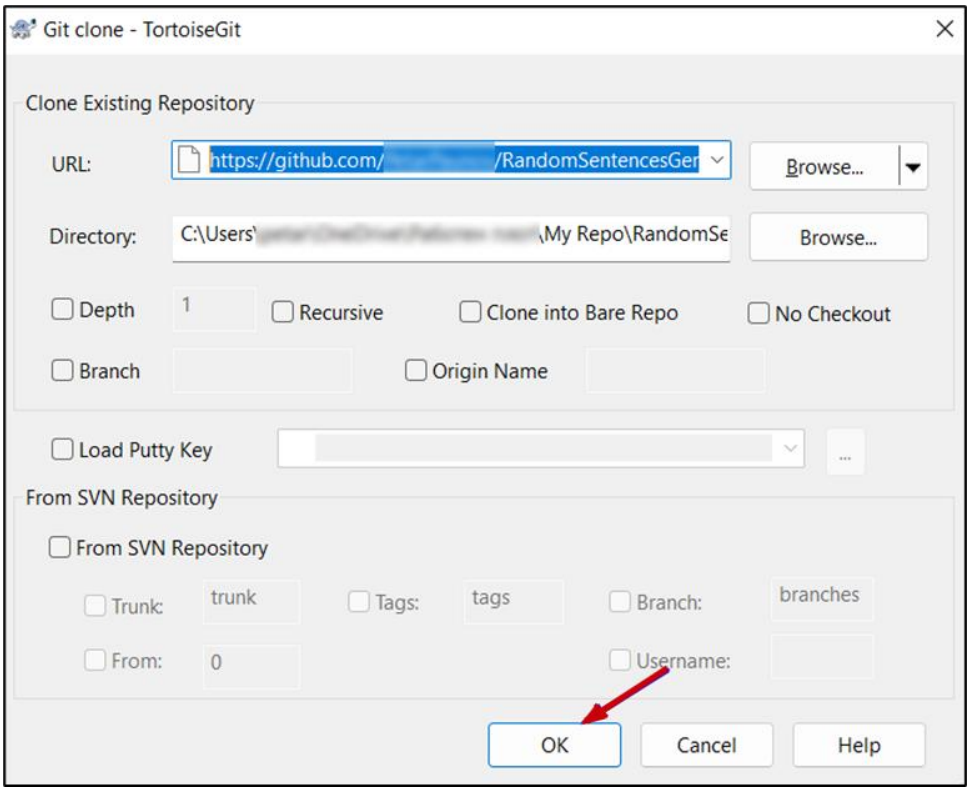
Now let's upload it to **`GitHub`**.

# 3. Upload Your Project to Github

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

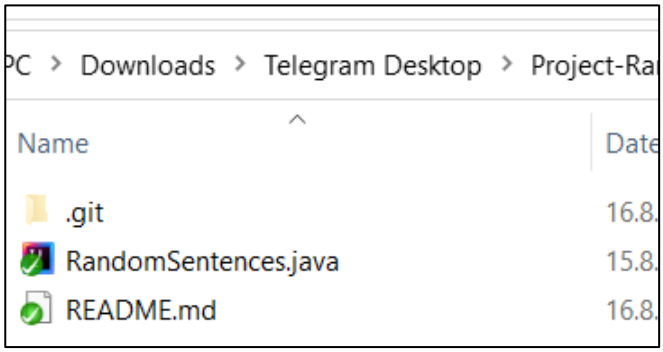
## Use TortoiseGit (Option 1)

Use **Git clone** for cloning with **`TortoiseGit`**. Go to the desired directory, **right-click** on a blank space anywhere in the folder and click **`[Git Clone]`**. Now go to our newly created **repository** and copy the repository's **URL** – you should already know how to do this. The last thing that we should do is to open our **`TortoiseGit`** to paste the **URL** and click **`[OK]`**.




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

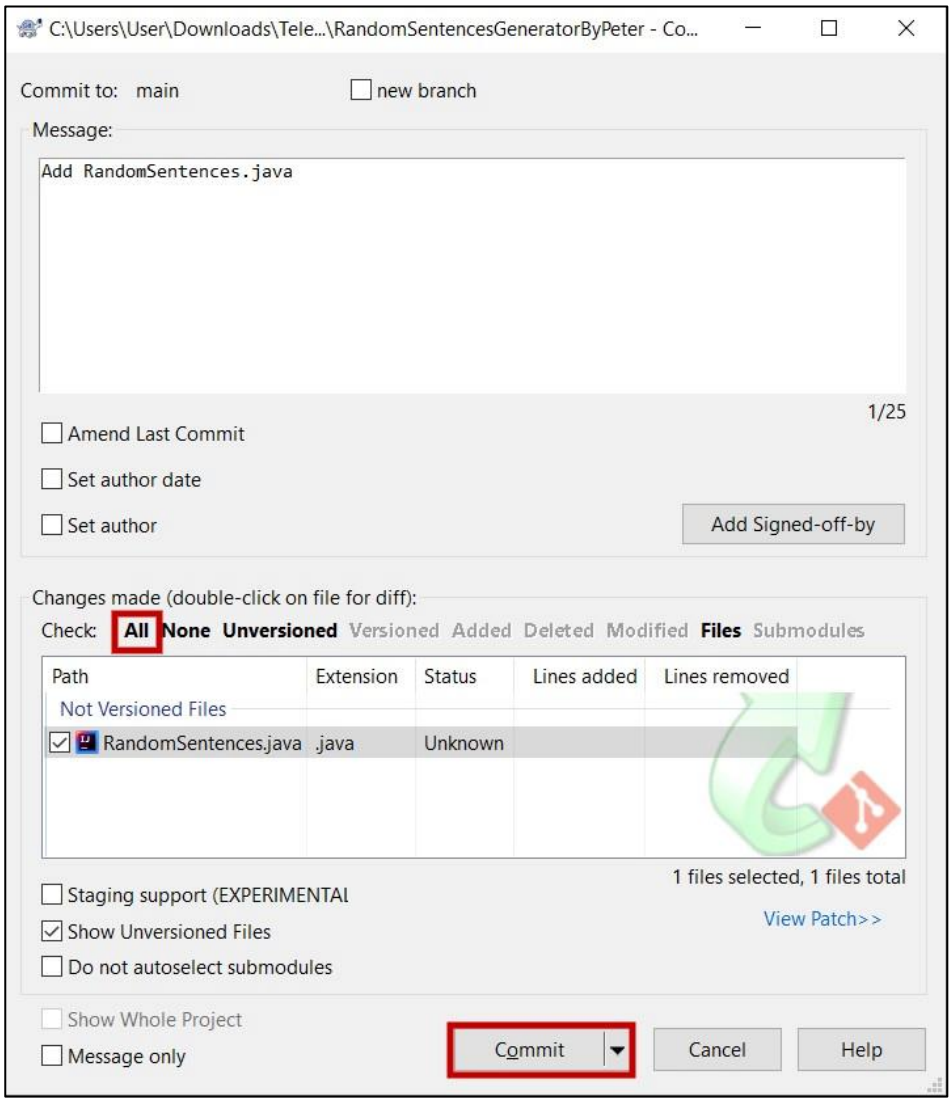
**Move your files** from your **old folder** to the **new repo** one. It should look like this:



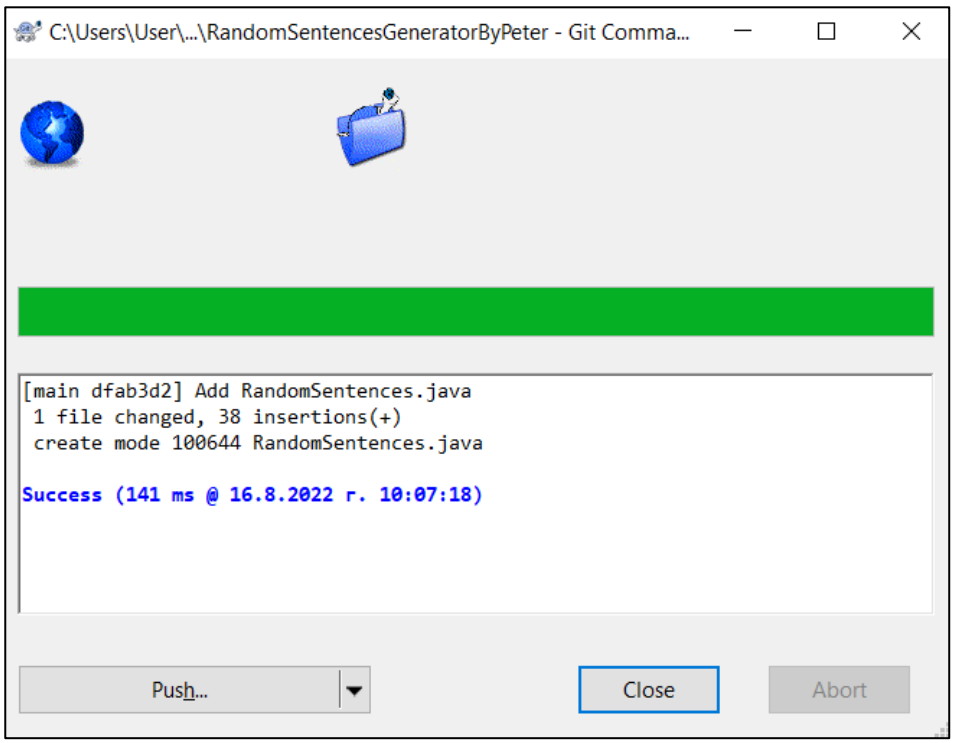

Now to **upload** our changes from our working project folder to GitHub.

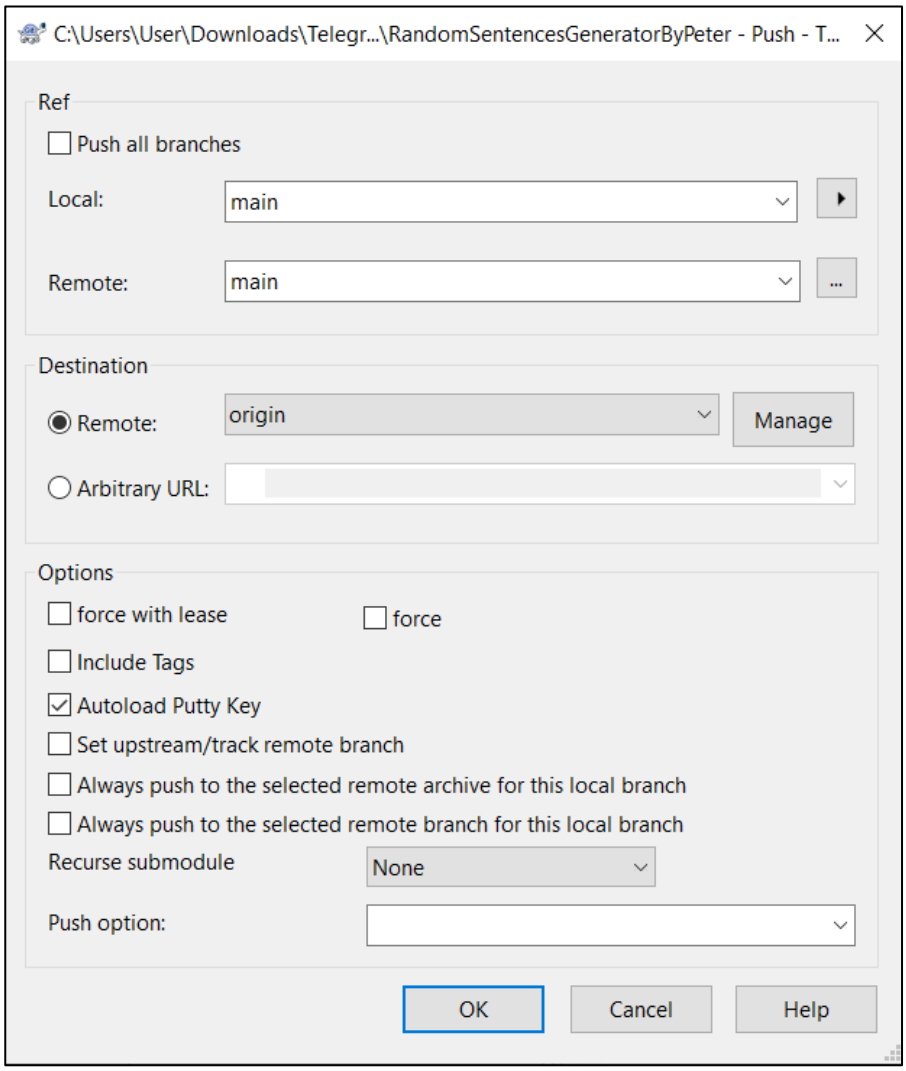
We can use TortoiseGit's **`[Git Commit…]`**. Go to your project's folder, **right-click** on blank space anywhere in the folder and click **`[Git Commit -> "main"…]`**.

Add an **appropriate** message and click **`[Add]`** so you don't miss any files, finally click **`[Commit]`**.




After that click **[Push]** and then **[OK]**:






This is all you need to **upload your project source code** to your **GitHub repository** using **`TortoiseGit`**.

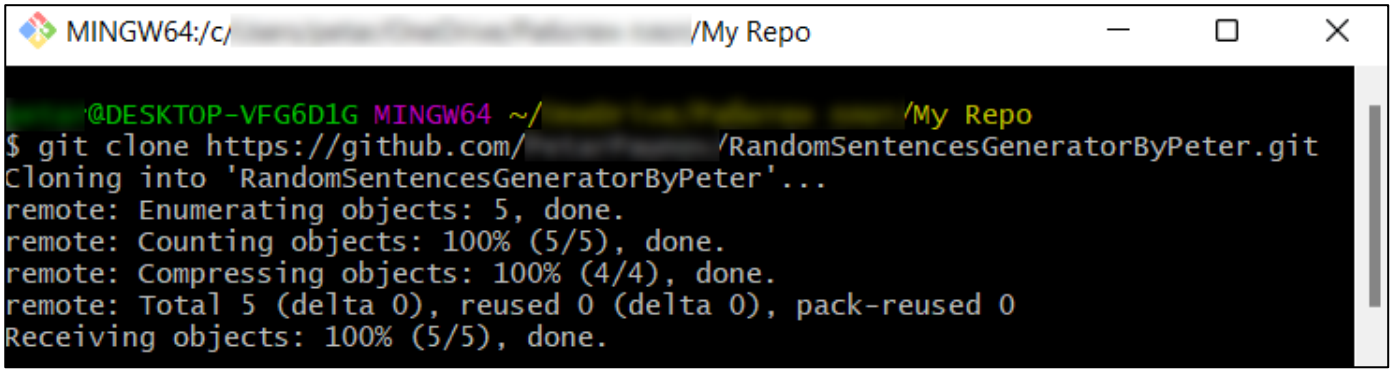
## Use Git Bash (Option 2)

**Alternatively**, use **Git Bash** to **commit** and **push** your local changes to the **repo**.

Go to the desired **directory**, right click on blank space **anywhere** in the folder, 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 **"`git clone`"** command followed by the link of your **repository**:

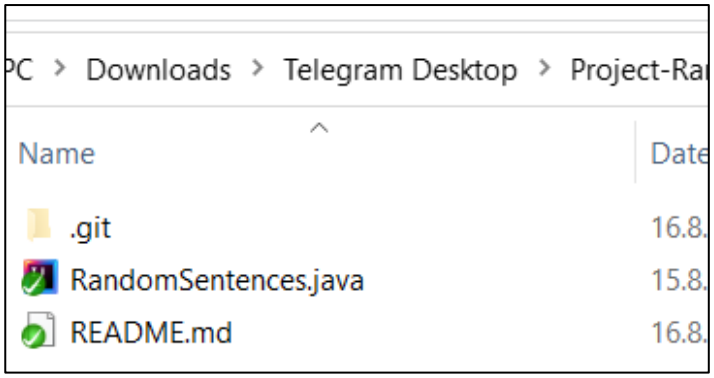
```
git clone
```

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



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

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




Now we are ready to upload our changes from "**Git Bash clone**". Go to the desired **folder**, right click on 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**.

```
User@DESKTOP-N8V98H0 MINGW64 ~/Downloads/Telegram Desktop/Project-Random-Sentenc
es-Generator/RandomSentencesGeneratorByPeter (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)
        RandomSentences.java

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**.

```
User@DESKTOP-N8V98H0 MINGW64 ~/Downloads/Telegram Desktop/Project-Random-Sentenc
es-Generator/RandomSentencesGeneratorByPeter (main)
$ git pull
git pAlready up to date.

User@DESKTOP-N8V98H0 MINGW64 ~/Downloads/Telegram Desktop/Project-Random-Sentenc
es-Generator/RandomSentencesGeneratorByPeter (main)
$ git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 846 bytes | 846.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/jjonkova/RandomSentencesGeneratorByPeter
   4f0e14c..f650bb4  main -> main
```

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

# 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!<br>• Implement your **own features**.<br>• **Implement the code yourself**, using your own coding style, code formatting, comments, etc.<br>• 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** on the right places or **change the place of the current ones**.
- You can think of more ways to change your sentence.

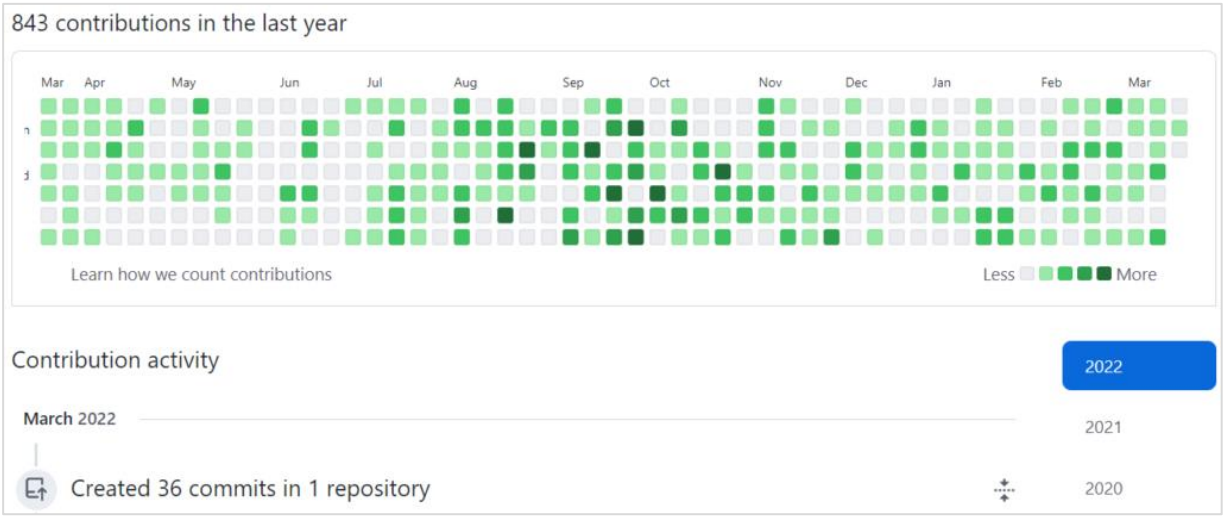
## Additional Ideas

- 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

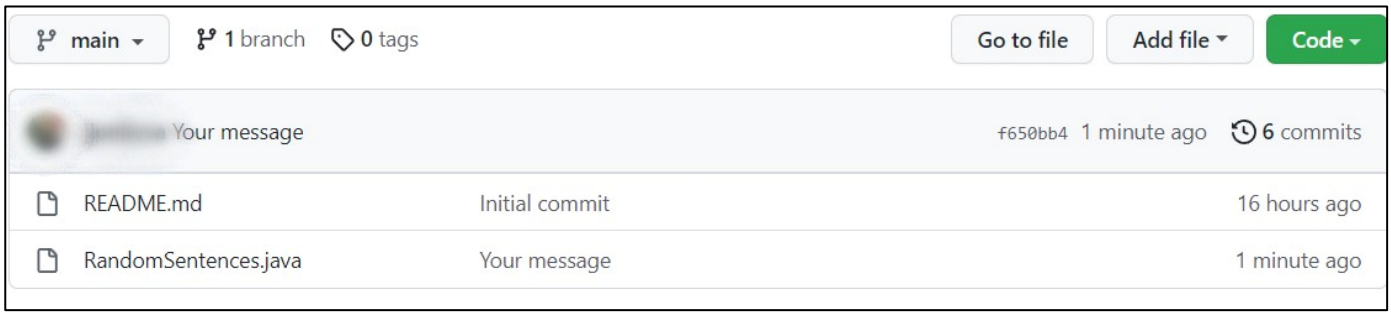
Now **commit and push your code changes** to your GitHub repo!

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:




## 5. Write a README.md File

It's highly recommended to provide **documentation as part of your project in 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 at GitHub:




### 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

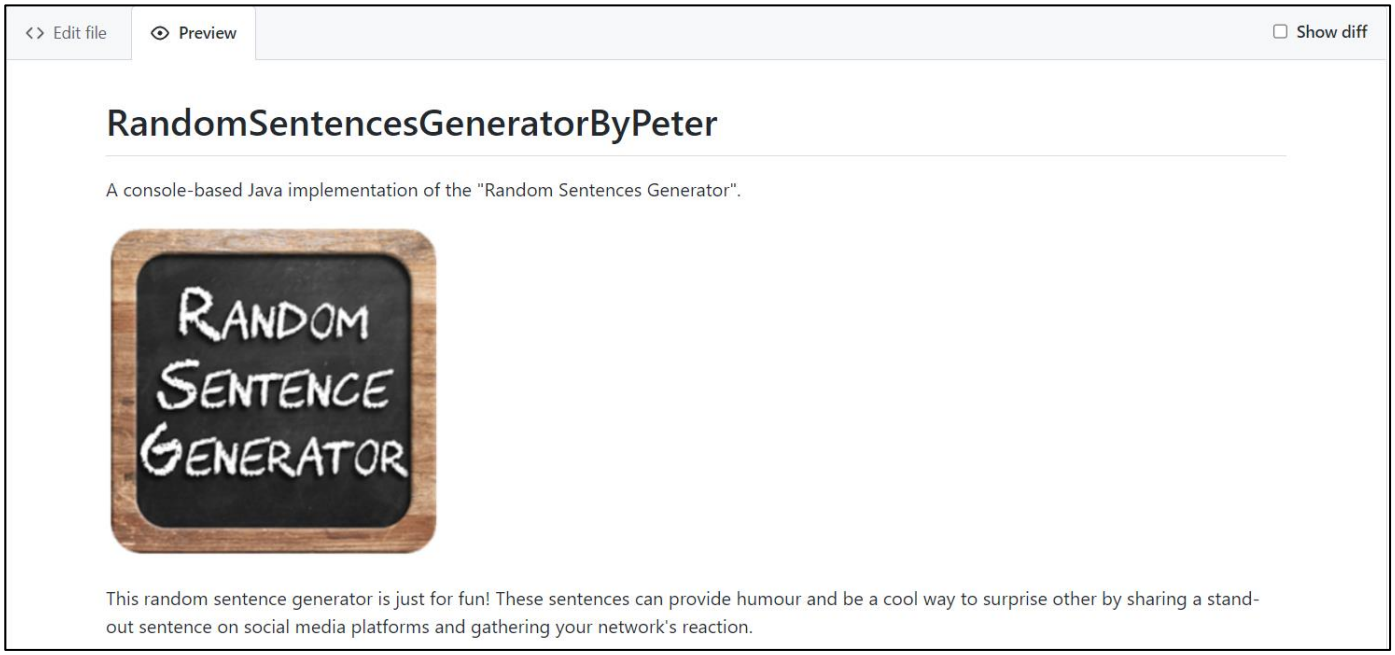
Note that the GitHub **`README.md`** file is written in the **Markdown language**. Markdown combines text and special formatting tags to describe formatted text documents.

### 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!




| | |
|---|---|
| ⚠ | **Write the project documentation yourself**. Don't copy/paste it!<br>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="[illegible]" />
```

## 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](RandomSentencesGenerator.java)
```

## Screenshots

Add **screenshots** of your project:

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

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

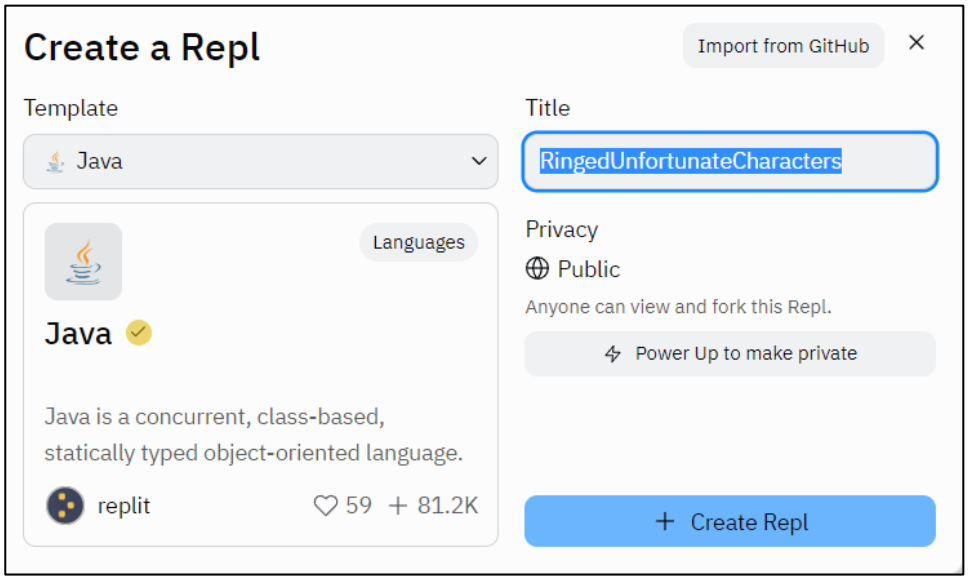
```
Hello, this is your first random-generated sentence:
Jane from Sofia sadly eats cake at home
Click [Enter] to generate a new one.

Peter from Plovdiv warmly plays with bikes in the park
Click [Enter] to generate a new one.

Peter from Burgas rapidly eats stones in the park
Click [Enter] to generate a new one.

Jane from Varna sadly holds stones near the river
Click [Enter] to generate a new one.

Peter from Varna slowly brings bikes at home
Click [Enter] to generate a new one.
```

```
Steve from Plovdiv diligently sees stones near the river
Click [Enter] to generate a new one.

Peter from Burgas diligently sees stones at home
Click [Enter] to generate a new one.

Jane from Varna slowly sees apple in the park
Click [Enter] to generate a new one.

Peter from Sofia sadly brings cake in the park
Click [Enter] to generate a new one.
```

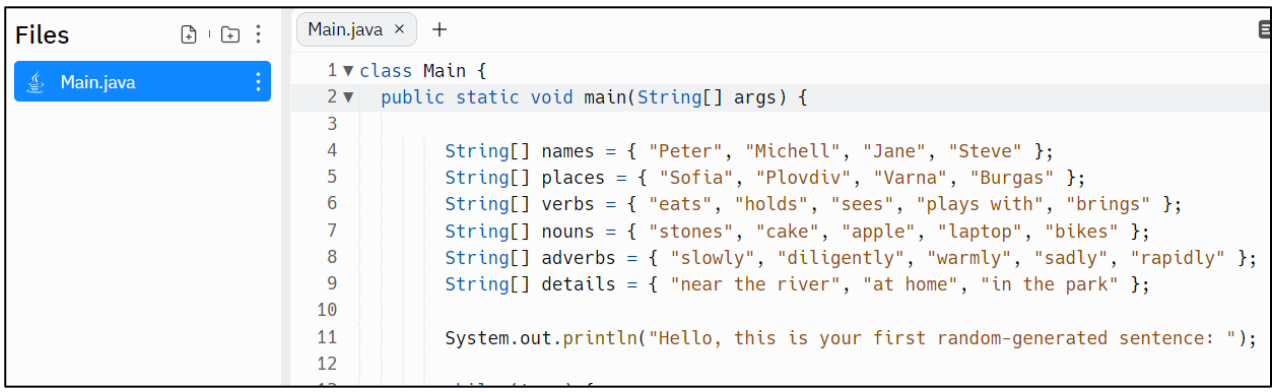
## 6. Upload Your App to Replit

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.

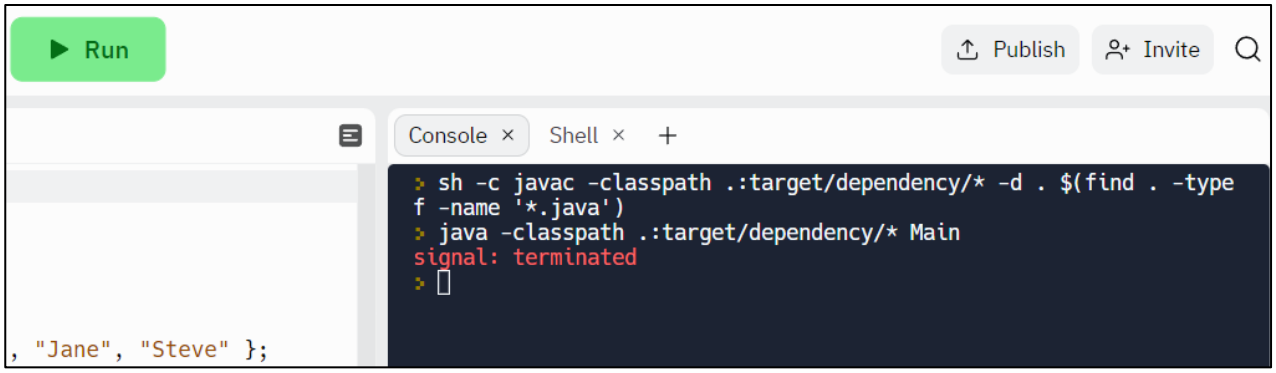
Open the **menu** in the upper **left corner**. Click **[Create]**, then select the **language** in which your project is **written**, select a name, and **create** the project. If your project is in Java, choose "**Java**":




Add your code in "**Main.java**" file.




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




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/[illegible]/Random-Sentences-Generator[illegible])
```

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

This is what it should look like after the changes in your **`README.md`** documentation:


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