**JavaScript JSON**

**What is JSON?**  
**JSON** or **J**ava**S**cript **O**bject **N**otation is a format for structuring data.

**What is it used for?**  
Like XML, it is one of the way of formatting the data. Such format of data is used by web applications to communicate with each other.

**Why JSON?**

The fact that whenever we declare a variable and assign a value to it, it’s not the variable that holds the value but rather the variablejust holds an address in the memory where the initialized value is stored. Further explaining, take for example:

let age=21;

when we use age, it gets replaced with 21, but that does not mean that age contains 21, rather what it means is that the variable age contains the address of the memory location where 21 is stored.

you might think what is the problem, how is JSON helpful?

well, yes, you are right! it is fine here till now but imagine you have to transfer the data and use it somewhere else (like an API maybe), so how will we share this? One way could be to send your computers entire memory along with the address of the locations that is required, as you might have understood now that this is not at all a good way to do it, also it is risky to send your entire computer memory. Here comes JSON to the rescue, JSON serializes the data and converts it into human-readable and understandable format, which also makes it transferal and to be able to communicate.

**Characteristics of JSON**

* It is **Human-readable and writable**.
* It is **light weight text based data interchange format** which means, it is simpler to read and write when compared to XML.
* It is widely used as **data storage and communication format** on the web.
* Though it is derived from a subset of JavaScript, yet it is **Language independent**. Thus, the code for generating and parsing JSON data can be written in any other programming language.

**JSON Syntax Rules**  
JSON syntax is derived from JavaScript object notation syntax:

* Data is in name/value pairs  
  Example:

*{ “name”:”Thanos” }*

*Types of Values:  
Array: An associative array of values.  
Boolean: True or false.  
Number: An integer.  
Object: An associative array of key/value pairs.  
String: Several plain text characters which usually form a word.*

* Data is separated by commas  
  Example:

*{ “name”:”Thanos”, “Occupation”:”Destroying half of humanity” }*

* Curly braces hold objects  
  Example:

*var person={ “name”:”Thanos”, “Occupation”:”Destroying half of humanity” }*

Here person is the object.

* Square brackets hold arrays  
  Example:

*var person={ “name”:”Thanos”, “Occupation”:”Destroying half of humanity”,  
“powers”:  
[“Can destroy anything with snap of his fingers”,  
“Damage resistance”, “Superhuman reflexes”] }*

Here person is the object and powers is an array.

Examples:

|  |
| --- |
| {      "Avengers": [            {            "Name" : "Tony stark",            "also known as" : "Iron man",            "Abilities" : [ "Genius", "Billionaire",                          "Playboy", "Philanthropist" ]          },            {            "Name" : "Peter parker",            "also known as" : "Spider man",            "Abilities" : [ "Spider web", "Spidy sense" ]          }      ]  } |

**JSON** (JavaScript Object Notation) is most widely used data format for data interchange on the web. **JSON** is a lightweight text based, data-interchange format and it completely language independent. It is based on a subset of the JavaScript programming language and it is easy to understand and generate.   
**JSON supports mainly 6 data types:** 

1. string
2. number
3. boolean
4. null
5. object
6. array

**Note:** string, number, boolean, null are simple data types or primitives data types whereas object and array are referred as complex data types.

1. **String:** JSON strings must be written in double quotes like C-language there are various special characters(Escape Characters) in JSON that you can use in strings such as \ (backslash), / (forward slash), b (backspace), n (new line), r (carriage return), t (horizontal tab) etc.   
   Example:

{ "name":"Vivek" }

{ "city":"Delhi\/India" }

here \/ is used for Escape Character / (forward slash).

1. **Number:** Represented in base 10 and octal and hexadecimal formats are not used.   
   Example:

{ "age": 20 }

{ "percentage": 82.44}

1. **Boolean:** This data type can be either true or false.   
   Example:

{ "result" : true }

1. **Null:** It is just a define nullable value.   
   Example:

{

"result" : true,

"grade" : null,

"rollno" : 210

}

1. **Object:** It is a set of name or value pairs inserted between {} (curly braces). The keys must be strings and should be unique and multiple key and value pairs are separated by a, (comma).   
   Syntax:

{ key : value, .......}

1. Example:

{

"Geek":{ "name":"Peter", "age":20, "score": 50.05}

}

1. **Array:** It is an ordered collection of values and begins with [ (left bracket) and ends with ] (right bracket). The values of array are separated by ,(comma).   
   Syntax:

[ value, .......]

1. Example:

{

"geek":[ "Sahil", "Vivek", "Rahul" ]

}

{

"collection" : [

{"id" : 101},

{"id" : 102},

{"id" : 103}

]

}

**Example of JSON document:** 

{

"Geeks" : [

{

"Geekname" : "Sahil kumar",

"subject" : "Data structures",

"Articles" : 10

},

{

"Geekname" : "Pawan singh",

"subject" : "Algorithms",

"Articles" : 16

},

{

"Geekname" : "Ayush Goel",

"subject" : "Networking",

"Articles" : 7

}

]

}

**Python GUI – tkinter**

* Difficulty Level : [Medium](https://www.geeksforgeeks.org/medium/)
* Last Updated : 07 Jan, 2020

 Read

 Discuss

Python offers multiple options for developing GUI (Graphical User Interface). Out of all the GUI methods, tkinter is the most commonly used method. It is a standard Python interface to the Tk GUI toolkit shipped with Python. Python with tkinter is the fastest and easiest way to create the GUI applications. Creating a GUI using tkinter is an easy task.  
**To create a tkinter app:**

1. Importing the module – tkinter
2. Create the main window (container)
3. Add any number of widgets to the main window
4. Apply the event Trigger on the widgets.

Importing tkinter is same as importing any other module in the Python code. Note that the name of the module in Python 2.x is ‘Tkinter’ and in Python 3.x it is ‘tkinter’.

import tkinter

There are two main methods used which the user needs to remember while creating the Python application with GUI.

1. **Tk(screenName=None,  baseName=None,  className=’Tk’,  useTk=1):** To create a main window, tkinter offers a method ‘Tk(screenName=None,  baseName=None,  className=’Tk’,  useTk=1)’. To change the name of the window, you can change the className to the desired one. The basic code used to create the main window of the application is:

m=tkinter.Tk() where m is the name of the main window object

1. **mainloop():** There is a method known by the name mainloop() is used when your application is ready to run. mainloop() is an infinite loop used to run the application, wait for an event to occur and process the event as long as the window is not closed.

m.mainloop()

|  |
| --- |
| **import** tkinter  m **=** tkinter.Tk()  '''  widgets are added here  '''  m.mainloop() |

tkinter also offers access to the geometric configuration of the widgets which can organize the widgets in the parent windows. There are mainly three geometry manager classes class.

1. **pack() method:**It organizes the widgets in blocks before placing in the parent widget.
2. **grid() method:**It organizes the widgets in grid (table-like structure) before placing in the parent widget.
3. **place() method:**It organizes the widgets by placing them on specific positions directed by the programmer.

There are a number of widgets which you can put in your tkinter application. Some of the major widgets are explained below:

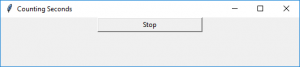
1. **Button**:To add a button in your application, this widget is used.  
   The general syntax is:

w=Button(master, option=value)

master is the parameter used to represent the parent window.  
There are number of options which are used to change the format of the Buttons. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **activebackground**: to set the background color when button is under the cursor.
  + **activeforeground**: to set the foreground color when button is under the cursor.
  + **bg**: to set he normal background color.
  + **command**: to call a function.
  + **font**: to set the font on the button label.
  + **image**: to set the image on the button.
  + **width**: to set the width of the button.
  + **height**: to set the height of the button.

|  |
| --- |
| **import** tkinter as tk  r **=** tk.Tk()  r.title('Counting Seconds')  button **=** tk.Button(r, text**=**'Stop', width**=**25, command**=**r.destroy)  button.pack()  r.mainloop() |

Output:  


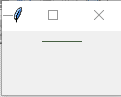
1. **Canvas:**It is used to draw pictures and other complex layout like graphics, text and widgets.  
   The general syntax is:
2. w = Canvas(master, option=value)

master is the parameter used to represent the parent window.

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **bd**: to set the border width in pixels.
  + **bg**: to set the normal background color.
  + **cursor**: to set the cursor used in the canvas.
  + **highlightcolor**: to set the color shown in the focus highlight.
  + **width**: to set the width of the widget.
  + **height**: to set the height of the widget.

|  |
| --- |
| **from** tkinter **import** **\***  master **=** Tk()  w **=** Canvas(master, width**=**40, height**=**60)  w.pack()  canvas\_height**=**20  canvas\_width**=**200  y **=** int(canvas\_height **/** 2)  w.create\_line(0, y, canvas\_width, y )  mainloop() |

Output:  


1. **CheckButton:**To select any number of options by displaying a number of options to a user as toggle buttons. The general syntax is:

w = CheckButton(master, option=value)

There are number of options which are used to change the format of this widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **Title**: To set the title of the widget.
  + **activebackground**: to set the background color when widget is under the cursor.
  + **activeforeground**: to set the foreground color when widget is under the cursor.
  + **bg**: to set he normal backgrouSteganography

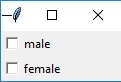
Break

Secret Code:

Attach a File:nd color.

* + **command**: to call a function.
  + **font**: to set the font on the button label.
  + **image**: to set the image on the widget.

|  |
| --- |
| **from** tkinter **import** **\***  master **=** Tk()  var1 **=** IntVar()  Checkbutton(master, text**=**'male', variable**=**var1).grid(row**=**0, sticky**=**W)  var2 **=** IntVar()  Checkbutton(master, text**=**'female', variable**=**var2).grid(row**=**1, sticky**=**W)  mainloop() |

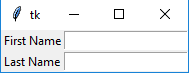
Output:  


1. **Entry:**It is used to input the single line text entry from the user.. For multi-line text input, Text widget is used.  
   The general syntax is:
2. w=Entry(master, option=value)

master is the parameter used to represent the parent window.  
There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **bd**: to set the border width in pixels.
  + **bg**: to set the normal background color.
  + **cursor**: to set the cursor used.
  + **command**: to call a function.
  + **highlightcolor**: to set the color shown in the focus highlight.
  + **width**: to set the width of the button.
  + **height**: to set the height of the button.

|  |
| --- |
| **from** tkinter **import** **\***  master **=** Tk()  Label(master, text**=**'First Name').grid(row**=**0)  Label(master, text**=**'Last Name').grid(row**=**1)  e1 **=** Entry(master)  e2 **=** Entry(master)  e1.grid(row**=**0, column**=**1)  e2.grid(row**=**1, column**=**1)  mainloop() |

Output:  


**Frame:** It acts as a container to hold the widgets. It is used for grouping and organizing the widgets. The general syntax is: w = Frame(master, option=value)

master is the parameter used to represent the parent window.

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* **highlightcolor**: To set the color of the focus highlight when widget has to be focused.
* **bd**: to set the border width in pixels.
* **bg**: to set the normal background color.
* **cursor**: to set the cursor used.
* **width**: to set the width of the widget.
* **height**: to set the height of the widget.

|  |
| --- |
| **from** tkinter **import** **\*** |

root **=** Tk()

frame **=** Frame(root)

frame.pack()

bottomframe **=** Frame(root)

bottomframe.pack( side **=** BOTTOM )

redbutton **=** Button(frame, text **=** 'Red', fg **=**'red')

redbutton.pack( side **=** LEFT)

greenbutton **=** Button(frame, text **=** 'Brown', fg**=**'brown')

greenbutton.pack( side **=** LEFT )

bluebutton **=** Button(frame, text **=**'Blue', fg **=**'blue')

bluebutton.pack( side **=** LEFT )

blackbutton **=** Button(bottomframe, text **=**'Black', fg **=**'black')

blackbutton.pack( side **=** BOTTOM)

root.mainloop()

1. **Label**: It refers to the display box where you can put any text or image which can be updated any time as per the code.  
   The general syntax is:
2. w=Label(master, option=value)

master is the parameter used to represent the parent window.

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **bg**: to set he normal background color.
  + **bg** to set he normal background color.
  + **command**: to call a function.
  + **font**: to set the font on the button label.
  + **image**: to set the image on the button.
  + **width**: to set the width of the button.
  + **height**” to set the height of the button.

|  |
| --- |
| **from** tkinter **import** **\***  root **=** Tk()  w **=** Label(root, text**=**'GeeksForGeeks.org!')  w.pack()  root.mainloop() |

Output:  

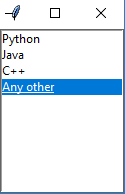

1. **Listbox**: It offers a list to the user from which the user can accept any number of options.  
   The general syntax is:
2. w = Listbox(master, option=value)

master is the parameter used to represent the parent window.

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **highlightcolor**: To set the color of the focus highlight when widget has to be focused.
  + **bg**: to set he normal background color.
  + **bd**: to set the border width in pixels.
  + **font**: to set the font on the button label.
  + **image**: to set the image on the widget.
  + **width**: to set the width of the widget.
  + **height**: to set the height of the widget.

|  |
| --- |
| **from** tkinter **import** **\***    top **=** Tk()  Lb **=** Listbox(top)  Lb.insert(1, 'Python')  Lb.insert(2, 'Java')  Lb.insert(3, 'C++')  Lb.insert(4, 'Any other')  Lb.pack()  top.mainloop() |

Output:  


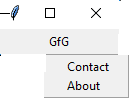
1. **MenuButton**: It is a part of top-down menu which stays on the window all the time. Every menubutton has its own functionality. The general syntax is:
2. w = MenuButton(master, option=value)

master is the parameter used to represent the parent window.

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **activebackground**: To set the background when mouse is over the widget.
  + **activeforeground**: To set the foreground when mouse is over the widget.
  + **bg**: to set he normal background color.
  + **bd**: to set the size of border around the indicator.
  + **cursor**: To appear the cursor when the mouse over the menubutton.
  + **image**: to set the image on the widget.
  + **width**: to set the width of the widget.
  + **height**: to set the height of the widget.
  + **highlightcolor**: To set the color of the focus highlight when widget has to be focused.

|  |
| --- |
| **from** tkinter **import** **\***    top **=** Tk()  mb **=**  Menubutton ( top, text **=** &quot;GfG&quot;)  mb.grid()  mb.menu  **=**  Menu ( mb, tearoff **=** 0 )  mb[&quot;menu&quot;]  **=**  mb.menu  cVar  **=** IntVar()  aVar **=** IntVar()  mb.menu.add\_checkbutton ( label **=**'Contact', variable **=** cVar )  mb.menu.add\_checkbutton ( label **=** 'About', variable **=** aVar )  mb.pack()  top.mainloop() |

Output:  


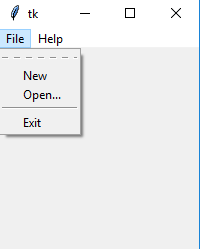
1. **Menu**: It is used to create all kinds of menus used by the application.  
   The general syntax is:
2. w = Menu(master, option=value)

master is the parameter used to represent the parent window.

There are number of options which are used to change the format of this widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **title**: To set the title of the widget.
  + **activebackground**: to set the background color when widget is under the cursor.
  + **activeforeground**: to set the foreground color when widget is under the cursor.
  + **bg**: to set he normal background color.
  + **command**: to call a function.
  + **font**: to set the font on the button label.
  + **image**: to set the image on the widget.

|  |
| --- |
| **from** tkinter **import** **\***    root **=** Tk()  menu **=** Menu(root)  root.config(menu**=**menu)  filemenu **=** Menu(menu)  menu.add\_cascade(label**=**'File', menu**=**filemenu)  filemenu.add\_command(label**=**'New')  filemenu.add\_command(label**=**'Open...')  filemenu.add\_separator()  filemenu.add\_command(label**=**'Exit', command**=**root.quit)  helpmenu **=** Menu(menu)  menu.add\_cascade(label**=**'Help', menu**=**helpmenu)  helpmenu.add\_command(label**=**'About')  mainloop() |

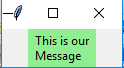
Output:  


1. **Message**: It refers to the multi-line and non-editable text. It works same as that of Label.  
   The general syntax is:
2. w = Message(master, option=value)
3. master is the parameter used to represent the parent window.

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **bd**: to set the border around the indicator.
  + **bg**: to set he normal background color.
  + **font**: to set the font on the button label.
  + **image**: to set the image on the widget.
  + **width**: to set the width of the widget.
  + **height**: to set the height of the widget.

|  |
| --- |
| **from** tkinter **import** **\***  main **=** Tk()  ourMessage **=**'This is our Message'  messageVar **=** Message(main, text **=** ourMessage)  messageVar.config(bg**=**'lightgreen')  messageVar.pack( )  main.mainloop( ) |

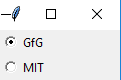
Output:  


1. **RadioButton:**It is used to offer multi-choice option to the user. It offers several options to the user and the user has to choose one option.  
   The general syntax is:
2. w = RadioButton(master, option=value)

There are number of options which are used to change the format of this widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **activebackground**: to set the background color when widget is under the cursor.
  + **activeforeground**: to set the foreground color when widget is under the cursor.
  + **bg**: to set he normal background color.
  + **command**: to call a function.
  + **font**: to set the font on the button label.
  + **image**: to set the image on the widget.
  + **width**: to set the width of the label in characters.
  + **height**: to set the height of the label in characters.

|  |
| --- |
| **from** tkinter **import** **\***  root **=** Tk()  v **=** IntVar()  Radiobutton(root, text**=**'GfG', variable**=**v, value**=**1).pack(anchor**=**W)  Radiobutton(root, text**=**'MIT', variable**=**v, value**=**2).pack(anchor**=**W)  mainloop() |

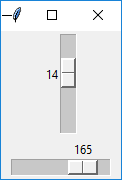
Output:  


1. **Scale:**It is used to provide a graphical slider that allows to select any value from that scale. The general syntax is:
2. w = Scale(master, option=value)
3. master is the parameter used to represent the parent window.

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **cursor**: To change the cursor pattern when the mouse is over the widget.
  + **activebackground**: To set the background of the widget when mouse is over the widget.
  + **bg**: to set he normal background color.
  + **orient**: Set it to HORIZONTAL or VERTICAL according to the requirement.
  + **from\_**: To set the value of one end of the scale range.
  + **to**: To set the value of the other end of the scale range.
  + **image**: to set the image on the widget.
  + **width**: to set the width of the widget.

|  |
| --- |
| **from** tkinter **import** **\***  master **=** Tk()  w **=** Scale(master, from\_**=**0, to**=**42)  w.pack()  w **=** Scale(master, from\_**=**0, to**=**200, orient**=**HORIZONTAL)  w.pack()  mainloop() |

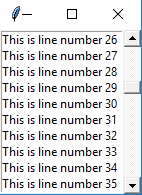
Output:  


1. **Scrollbar**: It refers to the slide controller which will be used to implement listed widgets.  
   The general syntax is:
2. w = Scrollbar(master, option=value)
3. master is the parameter used to represent the parent window.

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **width**: to set the width of the widget.
  + **activebackground**: To set the background when mouse is over the widget.
  + **bg**: to set he normal background color.
  + **bd**: to set the size of border around the indicator.
  + **cursor**: To appear the cursor when the mouse over the menubutton.

|  |
| --- |
| **from** tkinter **import** **\***  root **=** Tk()  scrollbar **=** Scrollbar(root)  scrollbar.pack( side **=** RIGHT, fill **=** Y )  mylist **=** Listbox(root, yscrollcommand **=** scrollbar.set )  **for** line **in** range(100):     mylist.insert(END, 'This is line number' **+** str(line))  mylist.pack( side **=** LEFT, fill **=** BOTH )  scrollbar.config( command **=** mylist.yview )  mainloop() |

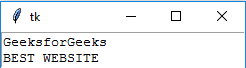
Output:  


1. **Text:**To edit a multi-line text and format the way it has to be displayed.  
   The general syntax is:
2. w =Text(master, option=value)

There are number of options which are used to change the format of the text. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **highlightcolor**: To set the color of the focus highlight when widget has to be focused.
  + **insertbackground**: To set the background of the widget.
  + **bg**: to set he normal background color.
  + **font**: to set the font on the button label.
  + **image**: to set the image on the widget.
  + **width**: to set the width of the widget.
  + **height**: to set the height of the widget.

|  |
| --- |
| **from** tkinter **import** **\***  root **=** Tk()  T **=** Text(root, height**=**2, width**=**30)  T.pack()  T.insert(END, 'GeeksforGeeks\nBEST WEBSITE\n')  mainloop() |

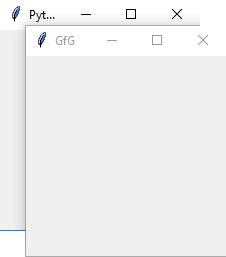
Output:  


1. **TopLevel:**This widget is directly controlled by the window manager. It don’t need any parent window to work on.The general syntax is:
2. w = TopLevel(master, option=value)

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **bg**: to set he normal background color.
  + **bd**: to set the size of border around the indicator.
  + **cursor**: To appear the cursor when the mouse over the menubutton.
  + **width**: to set the width of the widget.
  + **height**: to set the height of the widget.

|  |
| --- |
| **from** tkinter **import** **\***  root **=** Tk()  root.title('GfG')  top **=** Toplevel()  top.title('Python')  top.mainloop() |

Output:  


1. **SpinBox:**It is an entry of ‘Entry’ widget. Here, value can be input by selecting a fixed value of numbers.The general syntax is:
2. w = SpinBox(master, option=value)

There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **bg**: to set he normal background color.
  + **bd**: to set the size of border around the indicator.
  + **cursor**: To appear the cursor when the mouse over the menubutton.
  + **command**: To call a function.
  + **width**: to set the width of the widget.
  + **activebackground**: To set the background when mouse is over the widget.
  + **disabledbackground**: To disable the background when mouse is over the widget.
  + **from\_**: To set the value of one end of the range.
  + **to**: To set the value of the other end of the range.

|  |
| --- |
| **from** tkinter **import** **\***  master **=** Tk()  w **=** Spinbox(master, from\_ **=** 0, to **=** 10)  w.pack()  mainloop() |

Output:  


1. **PannedWindow**It is a container widget which is used to handle number of panes arranged in it. The general syntax is:
2. w = PannedWindow(master, option=value)

master is the parameter used to represent the parent window.  
There are number of options which are used to change the format of the widget. Number of options can be passed as parameters separated by commas. Some of them are listed below.

* + **bg**: to set he normal background color.
  + **bd**: to set the size of border around the indicator.
  + **cursor**: To appear the cursor when the mouse over the menubutton.
  + **width**: to set the width of the widget.
  + **height**: to set the height of the widget.

|  |
| --- |
| **from** tkinter **import** **\***  m1 **=** PanedWindow()  m1.pack(fill **=** BOTH, expand **=** 1)  left **=** Entry(m1, bd **=** 5)  m1.add(left)  m2 **=** PanedWindow(m1, orient **=** VERTICAL)  m1.add(m2)  top **=** Scale( m2, orient **=** HORIZONTAL)  m2.add(top)  mainloop() |

Output:  


This article is contributed by [Rishabh Bansal](https://www.linkedin.com/in/rishabh-bansal-9b4b71108/). If you like GeeksforGeeks and would like to contribute, you can also write an article using [contribute.geeksforgeeks.org](http://www.contribute.geeksforgeeks.org/) or mail your article to contribute@geeksforgeeks.org. See your article appearing on the GeeksforGeeks main page and help other Geeks.

Please write comments if you find anything incorrect, or you want to share more information about the topic discussed above.

**[](https://practice.geeksforgeeks.org/contest/job-a-thon-13-hiring-challenge?utm_source=gfg&utm_medium=in-article&utm_campaign=jobathon13)**

**Like**161

[Next](https://www.geeksforgeeks.org/python-simple-gui-calculator-using-tkinter/)

[**Python | Simple GUI calculator using Tkinter**](https://www.geeksforgeeks.org/python-simple-gui-calculator-using-tkinter/)

RECOMMENDED ARTICLES

**Page :**

**1**

2

3

4

5

6

[Python | Simple GUI calculator using Tkinter](https://www.geeksforgeeks.org/python-simple-gui-calculator-using-tkinter/?ref=rp" \o "Permalink to Python | Simple GUI calculator using Tkinter)

[14, Jun 18](https://www.geeksforgeeks.org/python-simple-gui-calculator-using-tkinter/?ref=rp" \o "Permalink to Python | Simple GUI calculator using Tkinter)

[Python | Distance-time GUI calculator using Tkinter](https://www.geeksforgeeks.org/python-distance-time-gui-calculator-using-tkinter/?ref=rp" \o "Permalink to Python | Distance-time GUI calculator using Tkinter)

[28, Jun 18](https://www.geeksforgeeks.org/python-distance-time-gui-calculator-using-tkinter/?ref=rp" \o "Permalink to Python | Distance-time GUI calculator using Tkinter)

[Python - Compound Interest GUI Calculator using Tkinter](https://www.geeksforgeeks.org/python-compound-interest-gui-calculator-using-tkinter/?ref=rp" \o "Permalink to Python - Compound Interest GUI Calculator using Tkinter)

[15, Jun 20](https://www.geeksforgeeks.org/python-compound-interest-gui-calculator-using-tkinter/?ref=rp" \o "Permalink to Python - Compound Interest GUI Calculator using Tkinter)

[Python | Create a GUI Marksheet using Tkinter](https://www.geeksforgeeks.org/python-create-a-gui-marksheet-using-tkinter/?ref=rp" \o "Permalink to Python | Create a GUI Marksheet using Tkinter)

[11, Dec 19](https://www.geeksforgeeks.org/python-create-a-gui-marksheet-using-tkinter/?ref=rp" \o "Permalink to Python | Create a GUI Marksheet using Tkinter)

[Python: Weight Conversion GUI using Tkinter](https://www.geeksforgeeks.org/python-weight-conversion-gui-using-tkinter/?ref=rp" \o "Permalink to Python: Weight Conversion GUI using Tkinter)

[14, Jan 20](https://www.geeksforgeeks.org/python-weight-conversion-gui-using-tkinter/?ref=rp" \o "Permalink to Python: Weight Conversion GUI using Tkinter)

[Python | ToDo GUI Application using Tkinter](https://www.geeksforgeeks.org/python-todo-gui-application-using-tkinter/?ref=rp" \o "Permalink to Python | ToDo GUI Application using Tkinter)

[03, Feb 20](https://www.geeksforgeeks.org/python-todo-gui-application-using-tkinter/?ref=rp" \o "Permalink to Python | ToDo GUI Application using Tkinter)

[Python | GUI Calendar using Tkinter](https://www.geeksforgeeks.org/python-gui-calendar-using-tkinter/?ref=rp" \o "Permalink to Python | GUI Calendar using Tkinter)

[03, Feb 20](https://www.geeksforgeeks.org/python-gui-calendar-using-tkinter/?ref=rp" \o "Permalink to Python | GUI Calendar using Tkinter)

[Sentiment Detector GUI using Tkinter - Python](https://www.geeksforgeeks.org/sentiment-detector-gui-using-tkinter-python/?ref=rp" \o "Permalink to Sentiment Detector GUI using Tkinter -  Python)

[21, May 20](https://www.geeksforgeeks.org/sentiment-detector-gui-using-tkinter-python/?ref=rp" \o "Permalink to Sentiment Detector GUI using Tkinter -  Python)

[Python - Morse Code Translator GUI using Tkinter](https://www.geeksforgeeks.org/python-morse-code-translator-gui-using-tkinter/?ref=rp" \o "Permalink to Python - Morse Code Translator GUI using Tkinter)

[21, May 20](https://www.geeksforgeeks.org/python-morse-code-translator-gui-using-tkinter/?ref=rp" \o "Permalink to Python - Morse Code Translator GUI using Tkinter)

[Create First GUI Application using Python-Tkinter](https://www.geeksforgeeks.org/create-first-gui-application-using-python-tkinter/?ref=rp" \o "Permalink to Create First GUI Application using Python-Tkinter)

[15, May 20](https://www.geeksforgeeks.org/create-first-gui-application-using-python-tkinter/?ref=rp" \o "Permalink to Create First GUI Application using Python-Tkinter)

[Python - SpongeBob Mocking Text Generator GUI using Tkinter](https://www.geeksforgeeks.org/python-spongebob-mocking-text-generator-gui-using-tkinter/?ref=rp" \o "Permalink to Python - SpongeBob Mocking Text Generator GUI using Tkinter)

[31, May 20](https://www.geeksforgeeks.org/python-spongebob-mocking-text-generator-gui-using-tkinter/?ref=rp" \o "Permalink to Python - SpongeBob Mocking Text Generator GUI using Tkinter)

[Python - Spell Corrector GUI using Tkinter](https://www.geeksforgeeks.org/python-spell-corrector-gui-using-tkinter/?ref=rp" \o "Permalink to Python - Spell Corrector GUI using Tkinter)

[31, May 20](https://www.geeksforgeeks.org/python-spell-corrector-gui-using-tkinter/?ref=rp" \o "Permalink to Python - Spell Corrector GUI using Tkinter)

[Python - UwU text convertor GUI using Tkinter](https://www.geeksforgeeks.org/python-uwu-text-convertor-gui-using-tkinter/?ref=rp" \o "Permalink to Python - UwU text convertor GUI using Tkinter)

[31, May 20](https://www.geeksforgeeks.org/python-uwu-text-convertor-gui-using-tkinter/?ref=rp" \o "Permalink to Python - UwU text convertor GUI using Tkinter)

[GST Rate Finder GUI using Python-Tkinter](https://www.geeksforgeeks.org/gst-rate-finder-gui-using-python-tkinter/?ref=rp" \o "Permalink to GST Rate Finder GUI using Python-Tkinter)

[28, May 20](https://www.geeksforgeeks.org/gst-rate-finder-gui-using-python-tkinter/?ref=rp" \o "Permalink to GST Rate Finder GUI using Python-Tkinter)

[Create Copy-Move GUI using Tkinter in Python](https://www.geeksforgeeks.org/create-copy-move-gui-using-tkinter-in-python/?ref=rp" \o "Permalink to Create Copy-Move GUI using Tkinter in Python)

[04, Jun 20](https://www.geeksforgeeks.org/create-copy-move-gui-using-tkinter-in-python/?ref=rp" \o "Permalink to Create Copy-Move GUI using Tkinter in Python)

[Python - English (Latin) to Hindi (Devanagiri) text convertor GUI using Tkinter](https://www.geeksforgeeks.org/python-english-latin-to-hindi-devanagiri-text-convertor-gui-using-tkinter/?ref=rp" \o "Permalink to Python - English (Latin) to Hindi (Devanagiri) text convertor GUI using Tkinter)

[10, Jun 20](https://www.geeksforgeeks.org/python-english-latin-to-hindi-devanagiri-text-convertor-gui-using-tkinter/?ref=rp" \o "Permalink to Python - English (Latin) to Hindi (Devanagiri) text convertor GUI using Tkinter)

[Text to speech GUI convertor using Tkinter in Python](https://www.geeksforgeeks.org/text-to-speech-gui-convertor-using-tkinter-in-python/?ref=rp" \o "Permalink to Text to speech GUI convertor using Tkinter in Python)

[17, Aug 20](https://www.geeksforgeeks.org/text-to-speech-gui-convertor-using-tkinter-in-python/?ref=rp" \o "Permalink to Text to speech GUI convertor using Tkinter in Python)

[Python - Dynamic GUI Calculator using Tkinter module](https://www.geeksforgeeks.org/python-dynamic-gui-calculator-using-tkinter-module/?ref=rp" \o "Permalink to Python -  Dynamic GUI Calculator using Tkinter module)

[24, Nov 20](https://www.geeksforgeeks.org/python-dynamic-gui-calculator-using-tkinter-module/?ref=rp" \o "Permalink to Python -  Dynamic GUI Calculator using Tkinter module)

[Python GUI - PyQt VS TKinter](https://www.geeksforgeeks.org/python-gui-pyqt-vs-tkinter/?ref=rp" \o "Permalink to Python GUI - PyQt VS TKinter)

[09, Dec 20](https://www.geeksforgeeks.org/python-gui-pyqt-vs-tkinter/?ref=rp" \o "Permalink to Python GUI - PyQt VS TKinter)

[How to add PDF in Tkinter GUI Python ?](https://www.geeksforgeeks.org/how-to-add-pdf-in-tkinter-gui-python/?ref=rp" \o "Permalink to How to add PDF in Tkinter GUI Python ?)

[13, Jan 21](https://www.geeksforgeeks.org/how-to-add-pdf-in-tkinter-gui-python/?ref=rp" \o "Permalink to How to add PDF in Tkinter GUI Python ?)

[Scientific GUI Calculator using Tkinter in Python](https://www.geeksforgeeks.org/scientific-gui-calculator-using-tkinter-in-python/?ref=rp" \o "Permalink to Scientific GUI Calculator using Tkinter in Python)

[23, Aug 21](https://www.geeksforgeeks.org/scientific-gui-calculator-using-tkinter-in-python/?ref=rp" \o "Permalink to Scientific GUI Calculator using Tkinter in Python)

[Standard GUI Unit Converter using Tkinter in Python](https://www.geeksforgeeks.org/standard-gui-unit-converter-using-tkinter-in-python/?ref=rp" \o "Permalink to Standard GUI Unit Converter using Tkinter in Python)

[05, Jul 20](https://www.geeksforgeeks.org/standard-gui-unit-converter-using-tkinter-in-python/?ref=rp" \o "Permalink to Standard GUI Unit Converter using Tkinter in Python)

[Build GUI Application for Guess Indian State using Tkinter Python](https://www.geeksforgeeks.org/build-gui-application-for-guess-indian-state-using-tkinter-python/?ref=rp" \o "Permalink to Build  GUI Application  for Guess Indian State using Tkinter Python)

[01, Jun 22](https://www.geeksforgeeks.org/build-gui-application-for-guess-indian-state-using-tkinter-python/?ref=rp" \o "Permalink to Build  GUI Application  for Guess Indian State using Tkinter Python)

[Tic Tac Toe game with GUI using tkinter in Python](https://www.geeksforgeeks.org/tic-tac-toe-game-with-gui-using-tkinter-in-python/?ref=rp" \o "Permalink to Tic Tac Toe game with GUI using tkinter in Python)

[06, Jan 21](https://www.geeksforgeeks.org/tic-tac-toe-game-with-gui-using-tkinter-in-python/?ref=rp" \o "Permalink to Tic Tac Toe game with GUI using tkinter in Python)

**Article Contributed By :**



[**GeeksforGeeks**](javascript:void(0))

**Vote for difficulty**

Current difficulty : [Medium](https://www.geeksforgeeks.org/medium/)

EasyNormalMediumHardExpert

**Improved By :**

* [abdurrahmaanjanhangeer](https://auth.geeksforgeeks.org/user/abdurrahmaanjanhangeer)

**Article Tags :**

* [Python](https://www.geeksforgeeks.org/category/programming-language/python/)

**Practice Tags :**

* [python](https://practice.geeksforgeeks.org/explore?category%5b%5d=python)

Improve Article

[Report Issue](mailto:review-team@geeksforgeeks.org)

Writing code in comment? Please use [ide.geeksforgeeks.org](https://ide.geeksforgeeks.org/), generate link and share the link here.

Load Comments

WHAT'S NEW

[[](https://practice.geeksforgeeks.org/courses/Python-Foundation?utm_source=gfg&utm_medium=right-bar&utm_campaign=python_found)](https://practice.geeksforgeeks.org/courses/Python-Foundation?utm_source=gfg&utm_medium=right-bar&utm_campaign=python_found)

**[Python Programming Foundation -Self Paced Course](https://practice.geeksforgeeks.org/courses/Python-Foundation?utm_source=gfg&utm_medium=right-bar&utm_campaign=python_found)**

[View Details](https://practice.geeksforgeeks.org/courses/Python-Foundation?utm_source=gfg&utm_medium=right-bar&utm_campaign=python_found)

[[](https://practice.geeksforgeeks.org/courses/dsa-self-paced?utm_source=right-bar&utm_medium=gfg&utm_campaign=dsa&utm_term=dsa)](https://practice.geeksforgeeks.org/courses/dsa-self-paced?utm_source=right-bar&utm_medium=gfg&utm_campaign=dsa&utm_term=dsa)

**[Data Structures & Algorithms- Self Paced Course](https://practice.geeksforgeeks.org/courses/dsa-self-paced?utm_source=right-bar&utm_medium=gfg&utm_campaign=dsa&utm_term=dsa)**

[View Details](https://practice.geeksforgeeks.org/courses/dsa-self-paced?utm_source=right-bar&utm_medium=gfg&utm_campaign=dsa&utm_term=dsa)

[[](https://practice.geeksforgeeks.org/courses/complete-interview-preparation?utm_source=right-bar&utm_medium=gfg&utm_campaign=dsa&utm_term=dsa)](https://practice.geeksforgeeks.org/courses/complete-interview-preparation?utm_source=right-bar&utm_medium=gfg&utm_campaign=dsa&utm_term=dsa)

**[Complete Interview Preparation- Self Paced Course](https://practice.geeksforgeeks.org/courses/complete-interview-preparation?utm_source=right-bar&utm_medium=gfg&utm_campaign=dsa&utm_term=dsa)**

[View Details](https://practice.geeksforgeeks.org/courses/complete-interview-preparation?utm_source=right-bar&utm_medium=gfg&utm_campaign=dsa&utm_term=dsa)

A-143, 9th Floor, Sovereign Corporate Tower,  
Sector-136, Noida, Uttar Pradesh - 201305

[feedback@geeksforgeeks.org](mailto:feedback@geeksforgeeks.org)

* **Company**
* [About Us](https://www.geeksforgeeks.org/about/?ref=footer)
* [Careers](https://geeksforgeeks.zohorecruit.in/careers)
* [In Media](https://www.geeksforgeeks.org/press-release/?ref=footer)
* [Contact Us](https://www.geeksforgeeks.org/about/contact-us/?ref=footer)
* [Privacy Policy](https://www.geeksforgeeks.org/privacy-policy/?ref=footer)
* [Copyright Policy](https://www.geeksforgeeks.org/copyright-information/?ref=footer)
* **Learn**
* [Algorithms](https://www.geeksforgeeks.org/fundamentals-of-algorithms/?ref=footer)
* [Data Structures](https://www.geeksforgeeks.org/data-structures/?ref=footer)
* [SDE Cheat Sheet](https://www.geeksforgeeks.org/gfg-sde-sheet-a-complete-guide-for-sde-preparation/?ref=footer)
* [Machine learning](https://www.geeksforgeeks.org/machine-learning/?ref=footer)
* [CS Subjects](https://www.geeksforgeeks.org/articles-on-computer-science-subjects-gq/?ref=footer)
* [Video Tutorials](https://www.geeksforgeeks.org/videos/?ref=footer)
* [Courses](https://practice.geeksforgeeks.org/courses/?ref=footer)
* [**News**](https://news.geeksforgeeks.org/?ref=footer)
* [Top News](https://news.geeksforgeeks.org/top?ref=footer)
* [Technology](https://news.geeksforgeeks.org/technology?ref=footer)
* [Work & Career](https://news.geeksforgeeks.org/work-career?ref=footer)
* [Business](https://news.geeksforgeeks.org/business?ref=footer)
* [Finance](https://news.geeksforgeeks.org/finance?ref=footer)
* [Lifestyle](https://news.geeksforgeeks.org/lifestyle?ref=footer)
* [Knowledge](https://news.geeksforgeeks.org/knowledge?ref=footer)
* **Languages**
* [Python](https://www.geeksforgeeks.org/python-programming-language/?ref=footer)
* [Java](https://www.geeksforgeeks.org/java/?ref=footer)
* [CPP](https://www.geeksforgeeks.org/c-plus-plus/?ref=footer)
* [Golang](https://www.geeksforgeeks.org/golang/?ref=footer)
* [C#](https://www.geeksforgeeks.org/csharp-programming-language/?ref=footer)
* [SQL](https://www.geeksforgeeks.org/sql-tutorial/?ref=footer)
* [Kotlin](https://www.geeksforgeeks.org/kotlin-programming-language/?ref=footer)
* **Web Development**
* [Web Tutorials](https://www.geeksforgeeks.org/web-development/?ref=footer)
* [Django Tutorial](https://www.geeksforgeeks.org/django-tutorial/?ref=footer)
* [HTML](https://www.geeksforgeeks.org/html-tutorials/?ref=footer)
* [JavaScript](https://www.geeksforgeeks.org/javascript-tutorial/?ref=footer)
* [Bootstrap](https://www.geeksforgeeks.org/bootstrap-tutorials/?ref=footer)
* [ReactJS](https://www.geeksforgeeks.org/reactjs-tutorials/?ref=footer)
* [NodeJS](https://www.geeksforgeeks.org/nodejs/?ref=footer)
* **Contribute**
* [Write an Article](https://www.geeksforgeeks.org/contribute/?ref=footer)
* [Improve an Article](https://www.geeksforgeeks.org/how-to-improve-an-article/?ref=footer)
* [Pick Topics to Write](https://write.geeksforgeeks.org/pick-article?ref=footer)
* [Write Interview Experience](https://www.geeksforgeeks.org/write-interview-experience/?ref=footer)
* [Internships](https://www.geeksforgeeks.org/careers/?job_type=1&ref=footer)
* [Video Internship](https://script.geeksforgeeks.org/on-boarding/youtube?ref=footer)

[@geeksforgeeks](https://www.geeksforgeeks.org/) , [Some rights reserved](https://www.geeksforgeeks.org/copyright-information/)

**Start Your Coding Journey N**