

Exercise 1

```
"""
ex1.py
Converts temperature between Fahrenheit and Celsius
"""

from breezypythongui import EasyFrame
#Imports EasyFrame

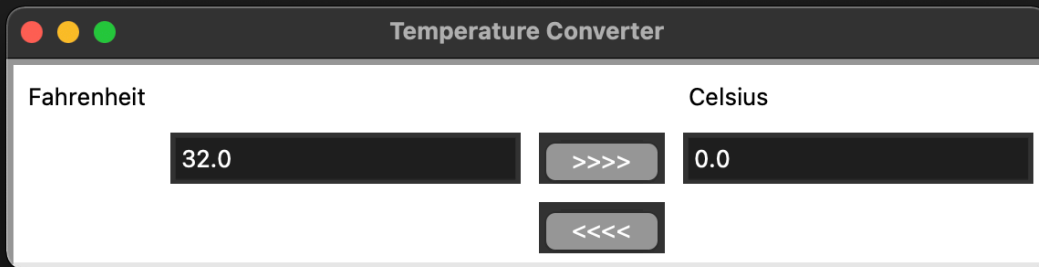
class tempConverter(EasyFrame):
    """Initialzie Window for conversion"""
    def __init__(self):
        """Initializes GUI Elements"""
        EasyFrame.__init__(self, title="Temperature Converter")
        self.addLabel(text="Fahrenheit",row=0,column=0)
        self.addLabel(text="Celsius",row=0,column=3)
        self.addButton(text=">>>",row=1,column=2,command=self.Celsius)
        self.addButton(text="<<<",row=2,column=2,command=self.Fahrenheit)
        self.Fahrenheit=self.addFloatField(32.0,row=1,column=1,precision=1)
        self.Celsius=self.addFloatField(0.0,row=1,column=3,precision=1)
        #Creates two text fields, two labels for the text field, and two buttons for conversion.

    def Celsius(self):
        """Converts to Celsius"""
        f=self.Fahrenheit.getNumber()
        c=(f-32) * .5556
        self.Celsius.setNumber(c)
    def Fahrenheit(self):
        """Converts to Fahrenheit"""
        c=self.Celsius.getNumber()
        f=c*9/5+32
        self.Fahrenheit.setNumber(f)
def main():
    """The main function of the program"""
    tempConverter().mainloop()

if __name__=="__main__":
    main()
```

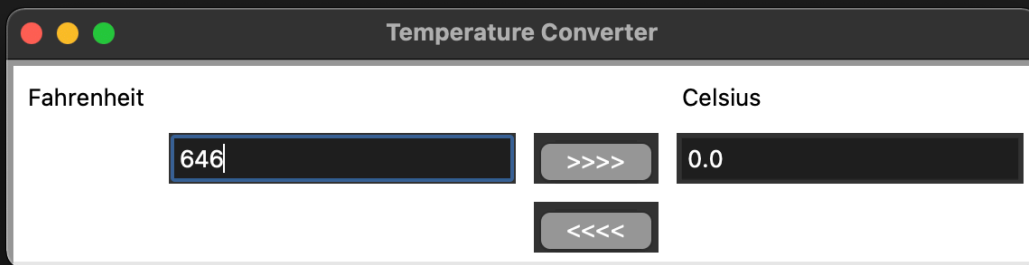
1.

Program starts as:



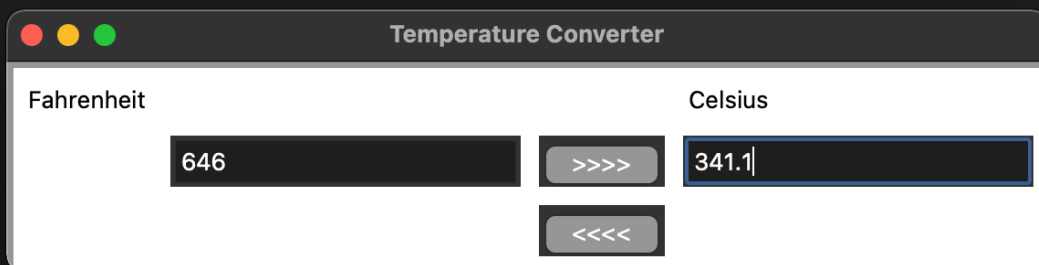
A screenshot of a macOS-style window titled "Temperature Converter". The window has a white background and a dark gray title bar with three colored window control buttons (red, yellow, green) on the left. The interface is divided into two columns. The left column is labeled "Fahrenheit" and contains a text input field with the value "32.0". The right column is labeled "Celsius" and contains a text input field with the value "0.0". Between the two columns, there are two buttons: a top button with four right-pointing chevrons (">>>>>") and a bottom button with four left-pointing chevrons ("<<<<").

Entered 646 into the Fahrenheit field.



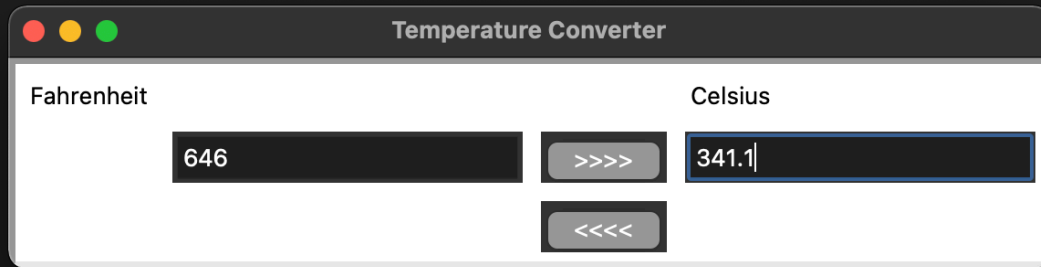
A screenshot of the "Temperature Converter" window. The "Fahrenheit" input field now contains the value "646" and has a blue selection border around it. The "Celsius" input field still contains "0.0". The buttons between the fields remain the same.

Pressed the >>>> button



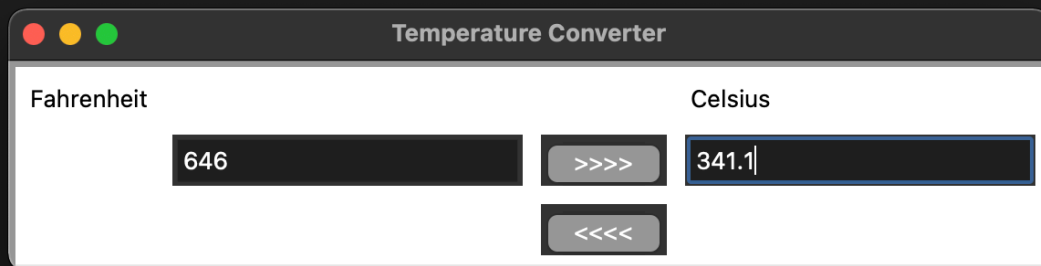
A screenshot of the "Temperature Converter" window after the conversion. The "Fahrenheit" input field contains "646". The "Celsius" input field now contains "341.1" and has a blue selection border around it. The buttons between the fields remain the same.

2.



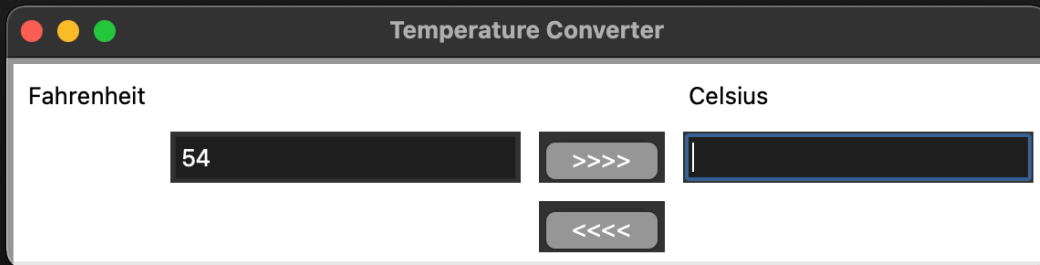
A screenshot of a macOS-style window titled "Temperature Converter". The window has a dark gray title bar with three colored window control buttons (red, yellow, green) on the left. The main content area is white and divided into two columns. The left column is labeled "Fahrenheit" and contains a text input field with the value "646". The right column is labeled "Celsius" and contains a text input field with the value "341.1". Between the two input fields are two buttons: a top button with four right-pointing chevrons (">>>>>") and a bottom button with four left-pointing chevrons ("<<<<").

Pressed the <<<< button.



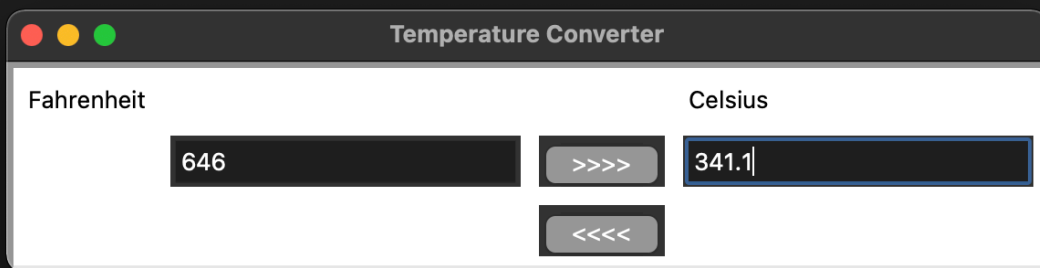
A second screenshot of the "Temperature Converter" window, identical to the first one. It shows the "Fahrenheit" input field with "646" and the "Celsius" input field with "341.1", with the "<<<<" button positioned below the other controls.

3.



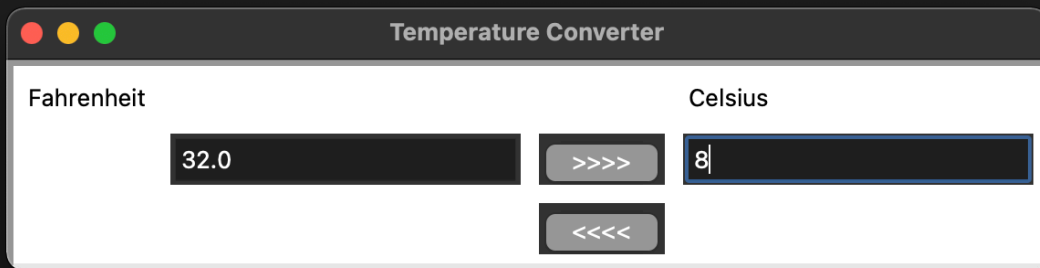
A screenshot of a macOS-style window titled "Temperature Converter". The window has a dark title bar with three colored window control buttons (red, yellow, green) on the left. The main content area is white and divided into two columns. The left column is labeled "Fahrenheit" and contains a text input field with the value "54". The right column is labeled "Celsius" and contains an empty text input field. Between the two columns are two buttons: the top one is labeled "====>" and the bottom one is labeled "<====".

Pressed the >>>> button



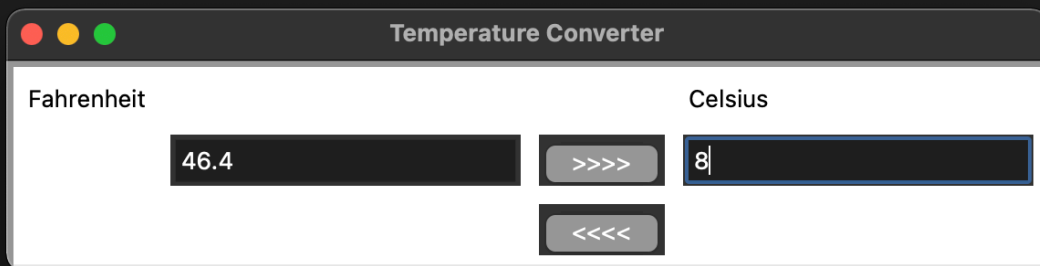
A screenshot of the same "Temperature Converter" window after a button click. The "Fahrenheit" input field now contains the value "646". The "Celsius" input field now contains the value "341.1". The "====>" button is still visible between the columns, and the "<====" button is still visible below it.

4.



A screenshot of a "Temperature Converter" application window. The window has a title bar with three colored buttons (red, yellow, green) and the text "Temperature Converter". Inside the window, there are two columns: "Fahrenheit" on the left and "Celsius" on the right. The "Fahrenheit" column has a text input field containing "32.0". The "Celsius" column has a text input field containing "8". Between the two columns, there are two buttons: the top one is labeled "====>" and the bottom one is labeled "<====".

Pressed the <<<< button



A screenshot of the "Temperature Converter" application window after the "<<<<" button was pressed. The "Fahrenheit" column now shows "46.4" in the text input field, while the "Celsius" column still shows "8". The buttons between the columns remain the same.

Exercise 2

```
"""
```

```
ex2.py
```

```
Plays a game where the computer tries to guess the user's number
```

```
"""
```

```
from breezypythongui import EasyFrame
```

```
#Imports
```

```
class compGuess(EasyFrame):
```

```
    """Guesses numbers between 1-100 given ranges by the user"""
```

```
    def __init__(self):
```

```
        """Initializes the game"""
```

```
        greeting="Click New Game to Start"
```

```
        EasyFrame.__init__(self, title="Guessing Game")
```

```
        self.Small=self.addButton(text="Too Small",row=2,column=1,command=self.Small,state="disabled")
```

```
        self.Large=self.addButton(text="Too Large",row=2,column=2, command=self.Large,state="disabled")
```

```
        self.Correct=self.addButton(text="Correct",row=2,column=3, command=self.Correct,state="disabled")
```

```
        self.New=self.addButton(text="New Game",row=3,column=2, command=self.NewGame)
```

```
        self.guessLabel = self.addLabel(text = greeting,row=0,column=2,sticky="N")
```

```
        #Adds widgets for 4 buttons(New Game, Too Large, Too Small, and Correct), and a label which shows the  
guesses.
```

```
    def NewGame(self):
```

```
        """Resets all values and chooses 50 as its first guess"""
```

```
        self.count=50
```

```
        self.upper=101
```

```
        self.lower=0
```

```
        self.guessCount=1
```

```
        self.guessLabel["text"] = "My guess is " + str(self.count)
```

```
        self.Small["state"]="normal"
```

```
        self.Correct["state"]="normal"
```

```
        self.Large["state"]="normal"
```

```
    def Large(self):
```

```
        """Uses upper and lower ranges to decrease the value of the next guess"""
```

```
        self.guessCount+=1
```

```
        self.upper=self.count
```

```
        avg=self.upper+self.lower
```

```
        self.count=avg//2
```

```
        self.guessLabel["text"] = "My next guess is " + str(self.count)
```

```
    def Small(self):
```

```
        """Uses upper and lower ranges to increase the value of the next guess"""
```

```
        self.guessCount+=1
```

```
        self.lower=self.count
```

```

avg=self.upper+self.lower
self.count=avg//2
self.guessLabel["text"] = "My next guess is " + str(self.count)

def Correct(self):
    """Disables all buttons and tells the user how many tries the computer took"""
    if self.guessCount==1:
        self.guessLabel["text"] = "I guessed your number in " + str(self.guessCount) + " Try"
    else:
        self.guessLabel["text"] = "I guessed your number in " + str(self.guessCount) + " Tries"
    self.Small["state"]="disabled"
    self.Correct["state"]="disabled"
    self.Large["state"]="disabled"

def main():
    """The main function of the program"""
    compGuess().mainloop()

if __name__=="__main__":
    main()

```

1.

Start screen of the program.



Pressed "New Game"



My number is 4, so it is too large.



Too large.



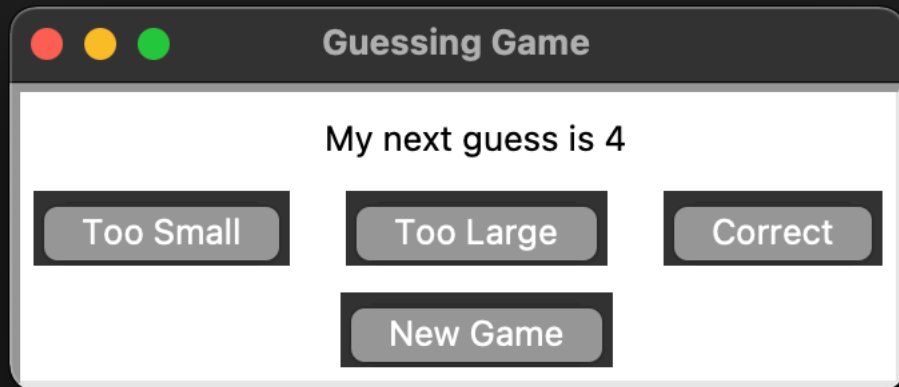
Too large.



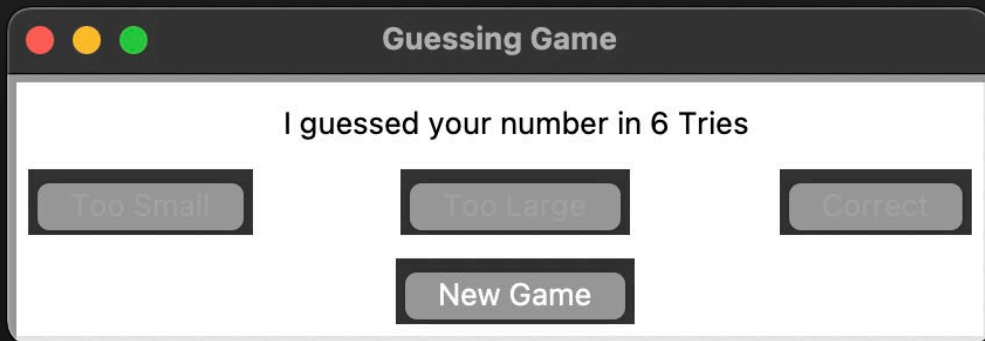
Too large



Too small



Correct



2.

Start screen of the program.



Pressed "New Game"



My number was 50. Correct.



3.

Start screen of the program.



Pressed "New Game"



My number is 73, so it is too small.



Too large.



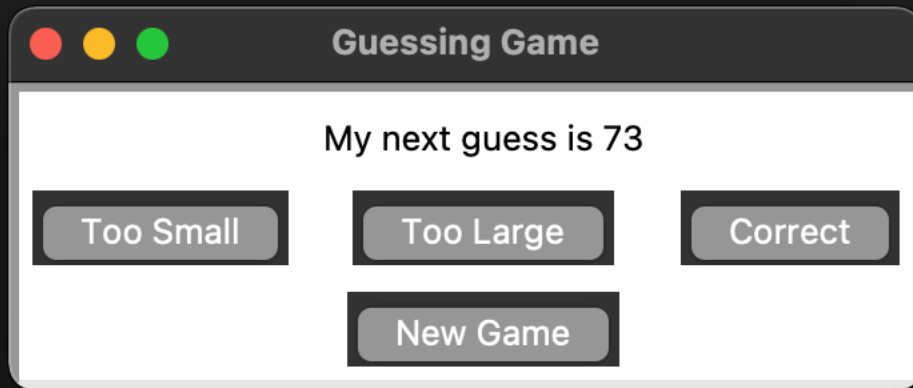
Too small.



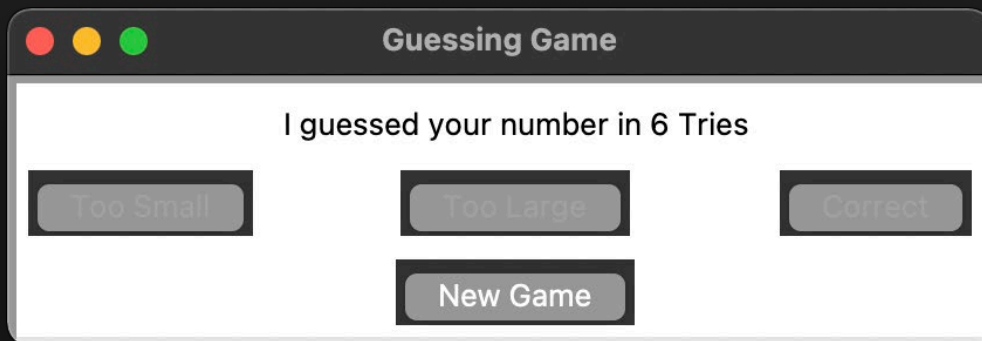
Too small.



Too small.

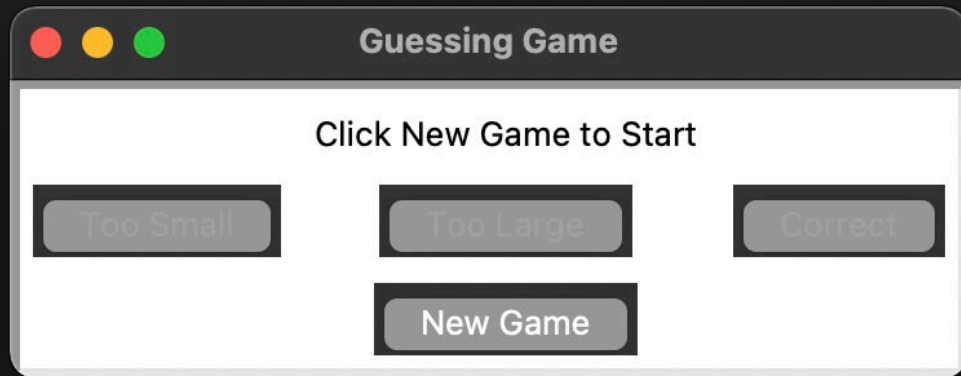


Correct



4.

Start screen of the program.



Pressed "New Game"



My number is 100. Too small.



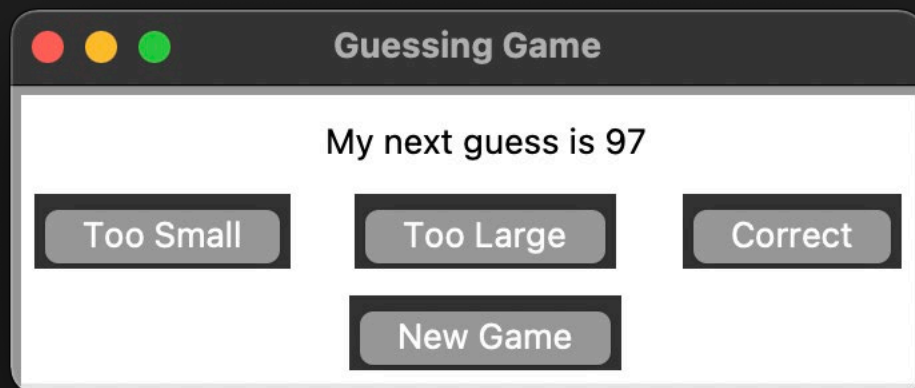
Too small



Too small.



Too small.



Too small.



Too small.



Correct

