

# REPORT

NED UNIVERSITY

NAME: AYESHA FAROOQ

ROLL: CS-071

COURSE CODE: CS-116

SUBJECT: OBJECT ORIENTED PROGRAMMING

DEPARTMENT: COMPUTER SYSTEM  
ENGINEERING

CEP PROJECT: GUI BASED CALCULATOR

SUBMITTED TO DR.MARIA WAQAS



## 1: PROBLEM DESCRIPTION:

Build the application of GUI based calculator which perform common operation such as addition, subtraction, multiplication and division and along with it convert binary number to decimal number and vice versa.

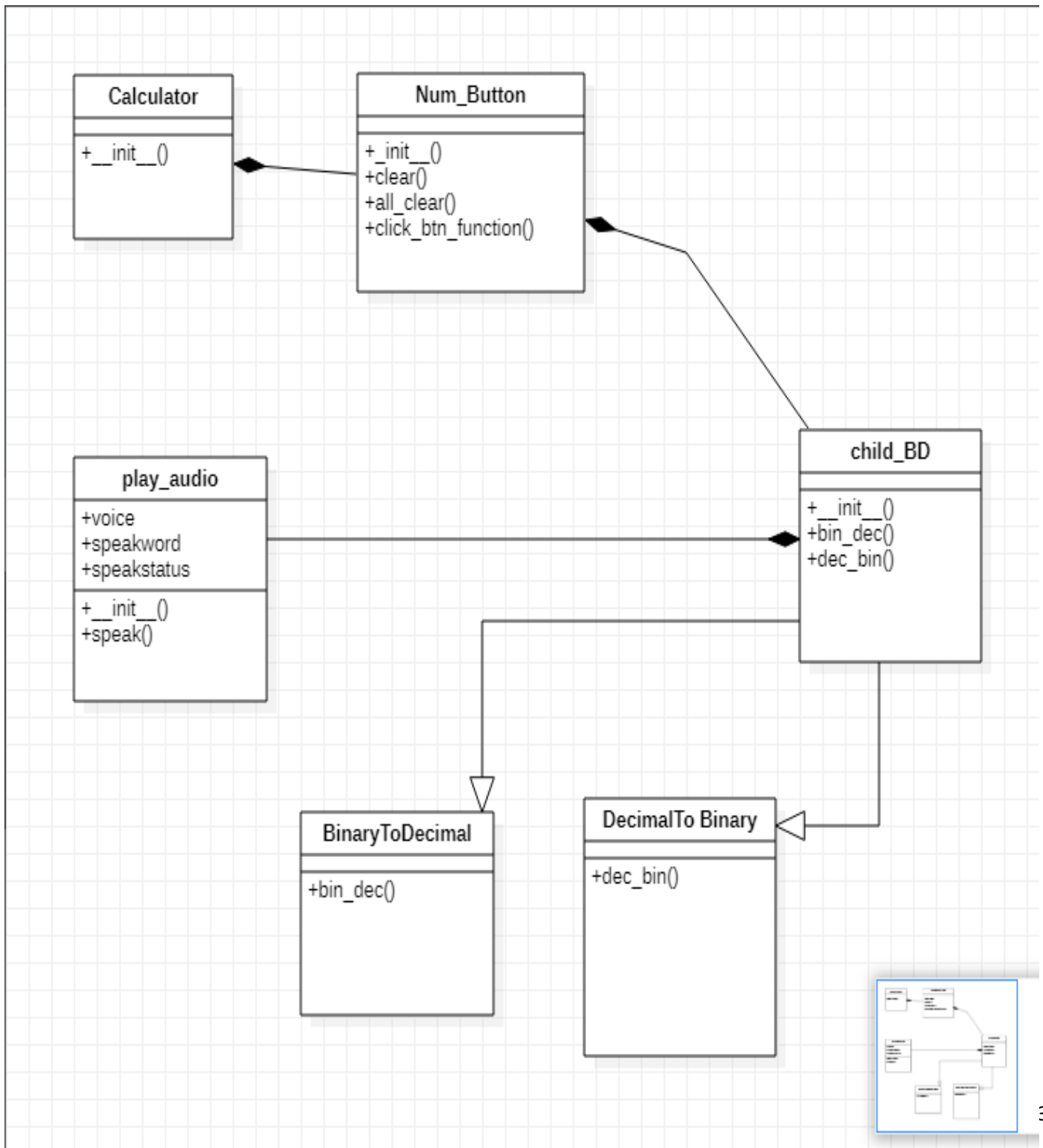
## 2: DISTINGUISHING FEATURE OF YOUR PROJECT:

In my project when user enter a wrong operation such as enter (\*8+9/) so in this case my application shows a small message box that tell user some thing happens wrong because user directly interact with GUI not the shell. So, it helps user to easily know the problem and enjoy the application easily. And my application also speaks the word that written in button when user press the button.

## 3: FLOW OF YOUR PROJECT:

In my project main class is calculator class which is inherited from tkinter class and in this class, I defined some local variables such as heading label, picture label, text field and some attribute from tkinter class such as title, geometry. And object of class Num\_Button instantiated in the init method of calculator class. Second class Num\_Button which is inherited from frame class and in this class I defend child class (child\_BD) of Binary To Decimal and Decimal To Binary ( (these two class defined in separate python file with one method bin\_dec and bin\_dec respectively) through multiple inheritance and this class contain three method that is bin\_dec and dec\_bin basically these two method are overrided the parent method and one init method and I also instantiate the object of class play audio in child\_BD class in init method of Num\_Button class. After then instantiate the object of this child\_BD class in the same init method of Num\_Button class. After then I defined three function clear , all clear and click\_btn\_function in Num\_Button class and after then I adding and binding button and then pack it and instantiate the object of main class calculator class.

## CLASS DIAGRAM



## 4: MOST CHALLENGING PART FOR YOU WHILE WORKING ON THE PROJECT:

In my project when I install pyttsx3 module from pip installer through command prompt it is very difficult part for me because it always shows syntax error and I install this package to speak the word when I press any button. And handling any incorrect operation that the user enters in the textfield. I handled this problem by exception handling and import message box from tkinter.

## 5: ANY NEW THING LEARNT IN PYTHON WHILE WORKING ON THE PROJECT:

Yes, I learnt new things in python how I install packages in idle python because in idle I can't write the command directly in shell; it shows syntax error and the same happens as in the command prompt of idle python but in pycharm you write the command directly in the terminal and easily installed the package. So installing a package in idle python I go to the python file location where I see the pip file and copy the location and paste it in a normal command prompt with some essential command (pip install pyttsx3) and the concept of threading in python because when I speak directly through the playaudio class in which the pyttsx3 module is used means in which I instantiate the object of pyttsx3. The application is hanging and slow so I use threading to make it faster.

## 6: FUTURE EXPANSION, IF ANY:

I do not know about the future expansion of this project.

## SCREENSHOTS OF TEST CASE RUNS

Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit (Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
==== RESTART: C:\Users\shaheen computer\Desktop\CEP\Main\_Calculator\_File.py ====  
btn clicked  
3  
btn clicked  
5  
btn clicked  
.  
btn clicked  
8  
Exception in thread Thread-4:  
Traceback (most recent call last):  
File "C:\Users\shaheen computer\AppData\Local\Programs\Python\Python38-32\lib\threading.py", line 932, in \_bootstrap\_inner  
self.run()  
File "C:\Users\shaheen computer\AppData\Local\Programs\Python\Python38-32\lib\threading.py", line 870, in run  
self.\_target(\*self.\_args, \*\*self.\_kwargs)  
File "C:\Users\shaheen computer\Desktop\CEP\audio\_file.py", line 35, in speak  
self.engine.runAndWait()  
File "C:\Users\shaheen computer\AppData\Local\Programs\Python\Python38-32\lib\site-packages\pytttsx3\engine.py", line 177, in runAndWait  
raise RuntimeError('run loop already started')  
RuntimeError: run loop already started  
btn clicked  
x  
btn clicked  
6  
btn clicked  
8

MY CALCULATOR



### My Calculator

35.8\*68

1	2	3	+
4	5	6	-
7	8	9	x
0	.	=	/
<--		AC	
Bin To Dec		Dec To Bin	

Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit (Intel)] on win32  
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RuntimeError: run loop already started  
btn clicked  
x  
btn clicked  
6  
btn clicked  
8  
=

MY CALCULATOR

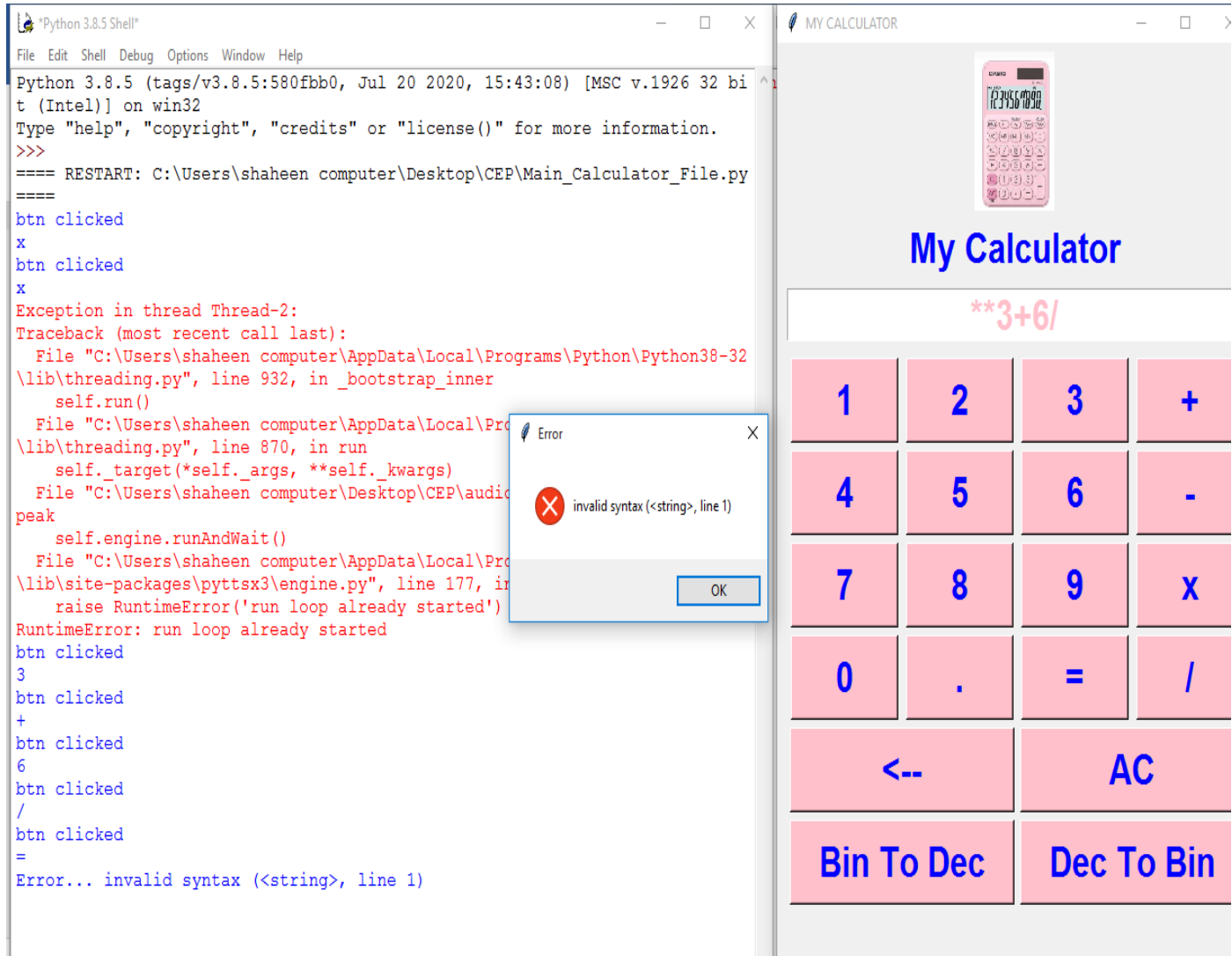


### My Calculator

2434.3999999999996

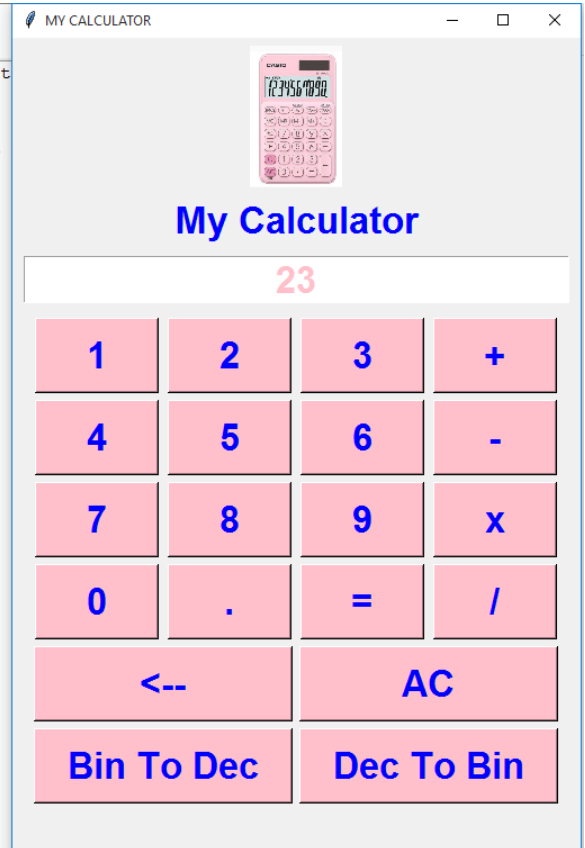
1	2	3	+
4	5	6	-
7	8	9	x
0	.	=	/
<--		AC	
Bin To Dec		Dec To Bin	

## Incorrect operation it show error message box



REPORT: GUI BASED CALCULATOR  
AYESHA FAROOQ (CS-071)

```
Python 3.8.5 Shell
File Edit Shell Debug Options Window Help
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit
(Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: C:\Users\shaheen computer\Desktop\CEP\Main_Calculator_File.py
====
btn clicked
2
btn clicked
3
```



```
Python 3.8.5 Shell
File Edit Shell Debug Options Window Help
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit
(Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: C:\Users\shaheen computer\Desktop\CEP\Main_Calculator_File.py
====
btn clicked
2
btn clicked
3
decimal to binary
10111
```

