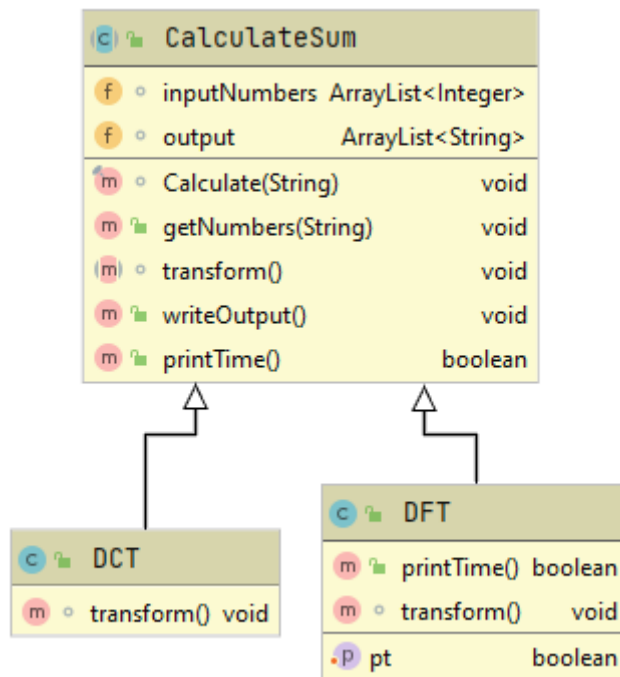


I used template method on this part. Because only the calculation type is in a variable structure , all the remaining stages are the same. The Calculate Sum class has an abstract transform method. Thus, classes derived from this class only need to fill in this method. I also helped classes that wanted to print execution time using a hook.

DCT and DFT classes have been extended from the CalculateSum class. DFT class can print the runtime according to user demand.

Class Diagram:



Powered by yFiles

Output:

```

Administrator: Windows PowerShell
PS C:\Users\FERHAT\Desktop\OOA\Midterm\PART4> java -jar .\midterm_part4.jar test.txt
1 for DCT
2 for DFT
Choose:
1
PS C:\Users\FERHAT\Desktop\OOA\Midterm\PART4>
  
```

```

output.txt - Not Defteri
Dosya Düzen Biçim Görünüm Yardım
17,39
-9,02
-0
-0,97
-0
-0,32
-0
-0,13
0
-0,04
  
```

```
PS C:\Users\FERHAT\Desktop\00A\Midterm\PART4> java -jar .\midterm_part4.jar test.txt
1 for DCT
2 for DFT
Choose:
2
Would you like to see time of execution ?
1 for Yes
2 for No
Choose:
1
Execution Time : 22596200
PS C:\Users\FERHAT\Desktop\00A\Midterm\PART4>
```

output.txt - Not Defteri

Dosya Düzen Biçim Görünüm Yardım

```
55+(0)j
-5+(15,39)j
-5+(6,88)j
-5+(3,63)j
-5+(1,62)j
-5+(-0)j
-5+(-1,62)j
-5+(-3,63)j
-5+(-6,88)j
-5+(-15,39)j
```