

HACETTEPE UNIVERSITY  
COMPUTER ENGINEERING DEPARTMENT  
BBM104



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Programming Language:Java

# 1.Aim

This programming assignment's aim is improve ourself on java, practising on java and learning new things about java with writing codes. The codes which are written by me aim is takes input file which file type is txt file and calculates riemann sum for three different function , finds armstrong numbers and calculates maclaurin series for approximation of  $\text{arcsinh}(x)$ .

# 2.Software Usage

I use eclipse for this assignment. Software takes a input file and the results print out the console.

# 3.Sample Input and Output

## Input.txt

```
IntegrateReimann Func1 -5 5 40
IntegrateReimann Func1 6 10 100
IntegrateReimann Func2 4 9 10
IntegrateReimann Func2 2 7 100
IntegrateReimann Func3 0.4 0.7 10
Arcsinh 0.6
Armstrong 4
```

## Output Window

```
IntegrateReimann Func1 -5.0 5.0 40 Result: 113.28125
IntegrateReimann Func1 6.0 10.0 100 Result: 241.33279999999994
IntegrateReimann Func2 4.0 9.0 10 Result: 100.33929871181917
IntegrateReimann Func2 2.0 7.0 100 Result: 126.6507926779776
IntegrateReimann Func3 0.4 0.7 10 Result: 0.1572339653364492
Arcsinh 0.6 Result: 0.5688248987322475
Armstrong 4 Result: [1, 2, 3, 4, 5, 6, 7, 8, 9, 153, 370, 371, 407, 1634, 8208, 9474]
```

## 4. Personal Comments

### 4.1 Difficulties I Have Faced

First difficulty I have faced is I couldn't read the input.txt file. I try lots of codes but everytime I take an error. Then I find my mistake and I solve the problem. After a few days I write lines of codes, one day when I open my laptop all of my codes was deleted. Also I copy my codes in another txt file but it was also empty. I still don't know how this happen. I start over and when I want to read input file, I faced the same problem again but I forgot how to solve this problem in first time. After a few time I solve this problem again. Except those problems it is difficult to writing codes with java because I get used to write codes with python.

### 4.2 What I Have Learned From This Assignment?

I learned how to read input files in java, how to write methods and I learned java syntax. I also learned java is harder than python. At the same time I learned reimann sum and arcsinh function. In summary I learned lots of things about java.