



# CS-A113 Basics in Programming Y1

7th Lecture  
2.11.2021



# The Lecture

- **Join with Video** – Makes my life nicer!
- Feel free to open your microphone and ask questions
- Feel free to write questions into the chat
- We will record the sessions and put it unlisted on youtube.



# Interactions Today:

Go to:

<http://presemo.aalto.fi/csa1113>

# Course Information



# Course Information

Points min	Points max	%	Grade
0	2829	< 45.2%	0
2830	3940	45.2%	1
3941	4565	63 %	2
4566	5191	73 %	3
5192	5816	83 %	4
5817	6255	93 %	5





# Topics Today

Read Files



Exception Handling



# Reading a File



## How to Open and Close a File

Open the file

```
sourceFile = open("text.txt","r")
```

```
sourceLine = sourceFile.readline()
```

```
while sourceLine != "":  
    print(sourceLine)  
    sourceLine = sourceFile.readline()
```

Do some reading

```
sourceFile.close()
```

Close the file





# How to Read a File

```
sourceFile = open("text.txt","r")
```

```
# read line by line  
sourceLine = sourceFile.readline()
```

```
while sourceLine != "":  
    print(sourceLine)  
    sourceLine = sourceFile.readline()
```

```
sourceFile.close()
```

```
sourceFile = open("text.txt","r")
```

```
# read through all lines  
for sourceLine in sourceFile:  
    print(sourceLine)
```

```
sourceFile.close()
```

```
sourceFile = open("text.txt","r")
```

```
# store all the lines in a list  
lineList = sourceFile.readlines()
```

```
sourceFile.close()
```

```
for sourceLine in lineList:  
    print(sourceLine)
```



# How to Read a File

How to give the responsibility to close the file to python:  
Python will open the file at the start of the code block and close it  
once the code block is over-

```
with open("text.txt","r") as sourceFile:  
    sourceLines = sourceFile.readlines()
```

## Good to Know

---

- `line.rstrip()`  
(removes whitespace characters at the end of the line, like newline, tab etc.)  
example: `"Hi, how are you? \n"` → `"Hi, how are you?"`
- `parts = line.split(",")`  
splits the string into several parts with `,` as delimiter  
example: `"Barbara, Keller,123, ,52"` → `("Barbara" , " Keller" , "123" , "" , "52")`
- `myFile.readline()` returns the empty string, once its finished  
example: `""` keep in mind, an empty line is not the same: `"\n"`





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# Example 1

```
def main1():  
  
    myFile = open("lines.txt","r")  
    myLine = myFile.readLine()  
    print(myLine)  
    i = 0  
  
    for theLine in myFile:  
        print(theLine)  
        if i==1:  
            test=myFile.readline()  
  
        i += 1  
    myFile.close()
```

Content of lines.txt

Line0  
Line1  
Line2  
Line3  
Line4

Output

A: Line0, Line0, Line1, Line2, Line3, Line4

B: Line0, Line2, Line3, Line4

C: Line0, Line1, Line3, Line4

D: Line0, Line1, Line2, Line4

# Example 2

```
def main1():  
  
    myFile = open("lines.txt","r")  
    myLine = myFile.readLine()  
    print(myLine)  
    i = 0  
  
    for theLine in myFile:  
        print(theLine)  
        if i==1:  
            test=myFile.readlines()  
  
        i += 1  
    myFile.close()
```

Content of lines.txt

Line0  
Line1  
Line2  
Line3  
Line4

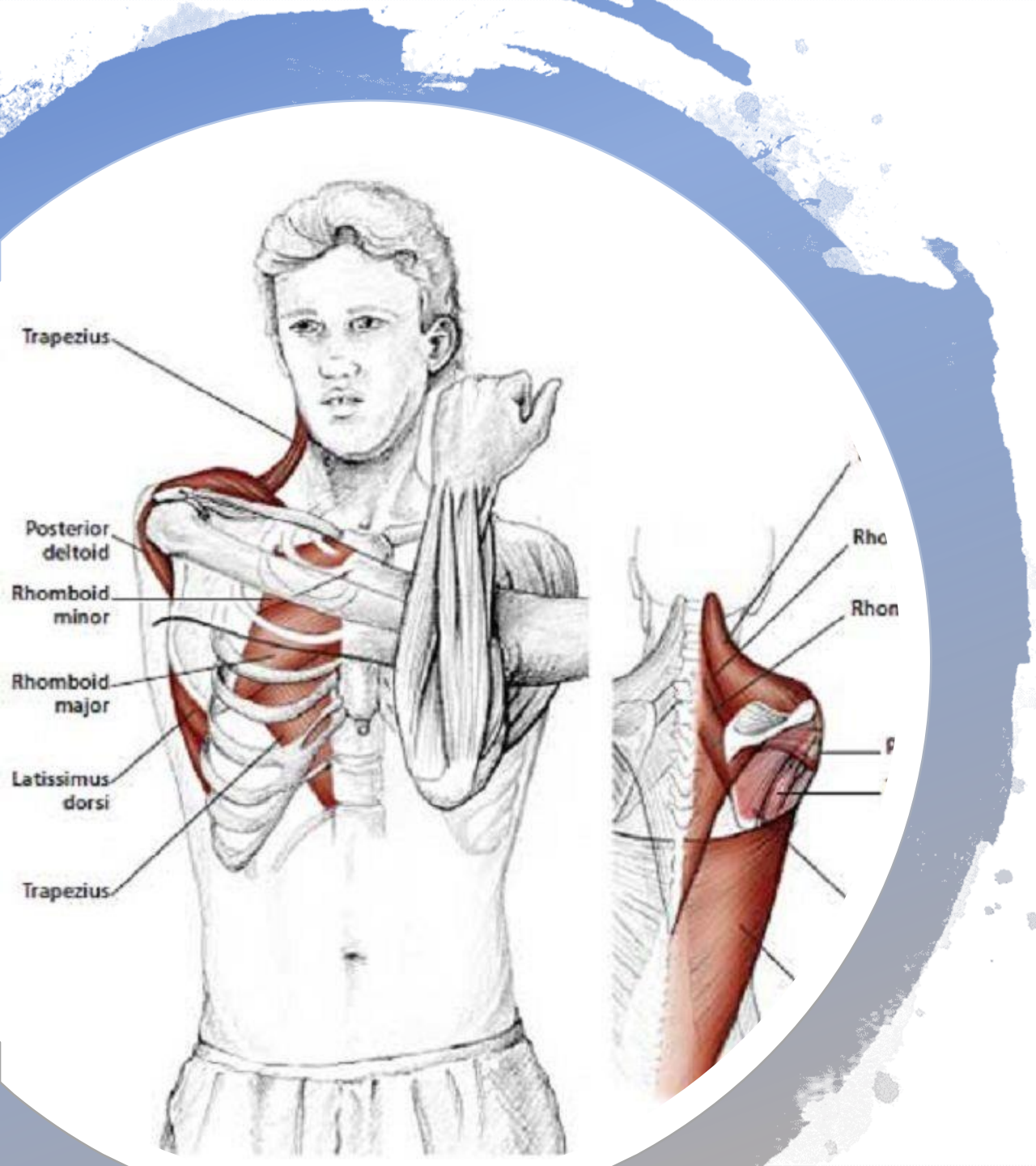
Output

A: Line0, Line0, Line1, Line2, Line3, Line4

B: Line0, Line1, Line2, Line3, Line4

C: Line0, Line1, Line2

D: Line0, Line1



Break: Move your  
Shoulders



## Site Not Found

Well, this is awkward. The site you're looking for is not here.

Is this your site? [Get more info](#) or [contact support](#).



What if the File you want to read does not exist in this directory?





Exception Handling



# Exception Handling

try:

```
#Here comes the code that maybe leads to an error
```

except ERROR:

```
# What should you do in case of such an error
```

try:

```
#Here comes the code that maybe leads to an error
```

```
sourceFile = open("text.txt","r")
```

```
sourceLine = sourceFile.readline()
```

except OSError:

```
# What should you do in case of such an error
```

```
print("Error in reading the file. Maybe the file is in another directory")
```



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# Example

```
def main1():  
    name=input("Enter file name:")  
    sum = 0  
    count = 0  
  
    try:  
        tempfile = open(name, "r")  
        for line in tempfile:  
            parts = line.split(",")  
            temperature = float(parts[1])  
            sum += temperature  
            count += 1  
        tempfile.close()  
  
    except OSError:  
        print("Error in reading file ", name)  
    except ValueError:  
        print("Incorrect temperature in file ", name)
```

```
def main2():  
    name=input("Enter file name:")  
    sum = 0  
    count = 0  
  
    try:  
        tempfile = open(name, "r")  
        sum = 0  
        count = 0  
        for line in tempfile:  
            parts = line.split(",")  
  
            try:  
                temperature = float(parts[1])  
                sum += temperature  
                count += 1  
            except ValueError:  
                print("Incorrect temperature in file ", name)  
  
        tempfile.close()  
  
    except OSError:  
        print("Error in reading file ", name)
```

*“That’s Kahoot! Folks!”*



l s b e r g