

Lecture 7 : Temperature program Symbol table

```
6 def convertFtoC(temp):
7     convertedTemp = (5/9)*(temp - 32)
8     print(temp, 'degrees in F is', convertedTemp, 'degrees in C.')
9
10
11 # Main code
12 tempInF1 = 32
13 convertFtoC(tempInF1)
14
15 tempInF2 = 212
16 convertFtoC(tempInF2)
```

main

<u>Name</u>	<u>Type</u>	<u>Value</u>
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convertFtoC	fun	→
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tempInF1	int	32
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[Done in Step b]

Convert F to C

<u>Name</u>	<u>Type</u>	<u>Value</u>
temp	int	32

13: 4 step process

a) Replace parameters with actual values

Convert F to C (~~tempInF1~~)
32

→ Convert F to C (32)

b) Make new Symbol table for function
Convert F to C

c) Add entries to function Symbol table
for all parameters

d) Copy types/values for function parameter
Symbol table entries from values passed
in function.

```
6 def convertFtoC(temp):  
7     convertedTemp = (5/9)*(temp - 32) = 0.0  
8     print(temp, 'degrees in F is', convertedTemp, 'degrees in C.')  
9  
10  
11 # Main code  
12 tempInF1 = 32  
13 convertFtoC(tempInF1)  
14  
15 tempInF2 = 212  
16 convertFtoC(tempInF2)
```

Convert F to C

<u>Name</u>	<u>Type</u>	<u>Value</u>
temp	int	32
convertedTemp	float	0.0

8: print out result.

next python goes back to line 13.

Main

<u>Name</u>	<u>Type</u>	<u>Value</u>
convertFtoC	fun	→
tempInF1	int	32

Once we are back to
main code (line 13)
function symbol table
goes away

<u>Convert F to C</u>		
<u>Name</u>	<u>Type</u>	<u>Value</u>
temp	int	32
convertedTemp	float	0.0

14: We could not access
printed converted temp
now

```
6 def convertFtoC(temp):
7     convertedTemp = (5/9)*(temp - 32)
8     print(temp, 'degrees in F is', convertedTemp, 'degrees in C.')
9
10
11 # Main code
12 tempInF1 = 32
13 convertFtoC(tempInF1)
14
15 tempInF2 = 212
16 convertFtoC(tempInF2)
```

main

<u>Name</u>	<u>Type</u>	<u>Value</u>
Convert F to C	fun	→
tempIn F1	int	32
tempIn F2	int	212

<u>Convert F to C</u>		
<u>Name</u>	<u>Type</u>	<u>Value</u>
temp	int	212

16: Function call. 4 step process:

- a) Convert F to C (212)
- b) New symbol table
- c) Create param entries
- d) Copy values passed in

⋮

```

6 def convertFtoC(temp):
7     convertedTemp = (5/9)*(temp - 32)
8     print(temp, 'degrees in F is', convertedTemp, 'degrees in C.')
9
10
11 # Main code
12 tempInF1 = 32
13 convertFtoC(tempInF1)
14
15 tempInF2 = 212
16 convertFtoC(tempInF2)

```

17 tempInF1 = 100

main

<u>Name</u>	<u>Type</u>	<u>Value</u>
convertFtoC	fun	→
tempInF1	int	32 100
tempInF2	int	212

Main.py

1 input turtle

Main		
<u>Name</u>	<u>Type</u>	<u>Value</u>
turtle	module	→

• = Connection between tables

turtle		
<u>Name</u>	<u>Type</u>	<u>Value</u>
Forward	fun	→
Right	fun	→
:	:	:

10 turtle.forward(10)

11

12 turtle.forward(20)

