

Computer Programming Paradigm Lab
Lab Experiment No. 4

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Aim:

Study the basic concepts of Haskell

Problem Statement & Output:

1. Converts temperatures in ° C to ° F.

C:\Windows\System32\cmd.exe - ghci

```
Microsoft Windows [Version 10.0.19044.2006]
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C:\Users\shweta\Documents\Shashwat\Notepad++\HaskellPracs>ghci
GHCi, version 8.10.7: https://www.haskell.org/ghc/  :? for help
Prelude> "D10A 60 Shashwat Tripathi"
"D10A 60 Shashwat Tripathi"
Prelude> "Temperature Conversion: Degree Celcius to Fahrenheit"
"Temperature Conversion: Degree Celcius to Fahrenheit"
Prelude> temperature t =( t*9/5.0 )+ 32
Prelude> temperature 36
96.8
Prelude> "Temperature Conversion: Degree Fahrenheit to Celcius"
"Temperature Conversion: Degree Fahrenheit to Celcius"
Prelude> temperature t =( t-32 )/1.8
Prelude> temperature 96.8
36.0
Prelude>
```

2. Use map to convert a string into a list of Booleans, each element in the new list representing whether or not the original element was a lower-case character. That is, it should take the string "aBCde" and return [True,False,False,True,True].

C:\Windows\System32\cmd.exe

```
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C:\Users\shweta\Documents\Shashwat\Notepad++\HaskellPracs>ghci
GHCi, version 8.10.7: https://www.haskell.org/ghc/  :? for help
Prelude> "D10A 60 Shashwat Tripathi"
"D10A 60 Shashwat Tripathi"
Prelude> import Data.Char
Prelude Data.Char> convert x = map(\x -> isLower x) x
Prelude Data.Char> convert "aBCde"
[True,False,False,True,True]
Prelude Data.Char> convert "sHaShWaT"
[True,False,True,False,True,False,True,False]
Prelude Data.Char> convert "AbCde"
[False,True,False,True,True]
Prelude Data.Char> :q
Leaving GHCi.

C:\Users\shweta\Documents\Shashwat\Notepad++\HaskellPracs>
```

3. Find factorial of number.

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19044.2006]
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C:\Users\shweta\Documents\Shashwat\Notepad++\HaskellPracs>ghci
GHCi, version 8.10.7: https://www.haskell.org/ghc/  :? for help
Prelude> "D10A 60 Shashwat Tripathi"
"D10A 60 Shashwat Tripathi"
Prelude> factorial x = product[1..x]
Prelude> factorial 6
720
Prelude> factorial 10
3628800
Prelude> factorial 4
24
Prelude> :q
Leaving GHCi.

C:\Users\shweta\Documents\Shashwat\Notepad++\HaskellPracs>
```

4. Display square of numbers given in list.

C:\Windows\System32\cmd.exe

Microsoft Windows [Version 10.0.19044.2006]

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C:\Users\shweta\Documents\Shashwat\Notepad++\HaskellPracs>ghci
GHCi, version 8.10.7: <https://www.haskell.org/ghc/> :? for help

Prelude> "D10A 60 Shashwat Tripathi"

"D10A 60 Shashwat Tripathi"

Prelude> square n = map(^2) n

Prelude> square [1,2,3,4]

[1,4,9,16]

Prelude> square [5,12,13]

[25,144,169]

Prelude> square [6,8,10]

[36,64,100]

Prelude> :q

Leaving GHCi.

C:\Users\shweta\Documents\Shashwat\Notepad++\HaskellPracs>