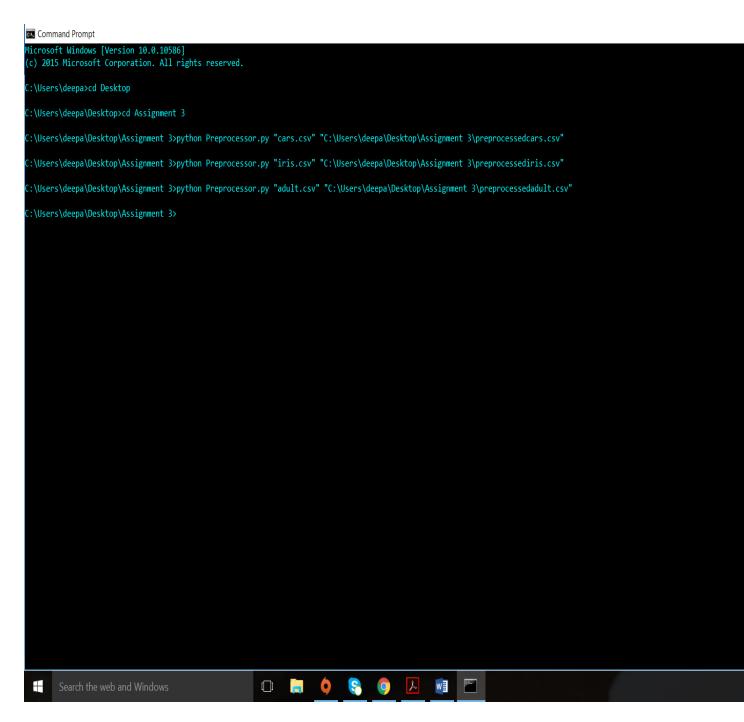
CS 6375	
ASSIGNMENT3	
Names of students in your group: 2	
Deepan Verma(dxv160430) Mansi Kukreja(mxk174330)	
Number of free late days used:	0
Note: You are allowed a <u>total</u> of 4 free late days for the <u>entire semester</u> . Y for each assignment. After that, there will be a penalty of 10% for each late	

Please list clearly all the sources/references that you have used in this assignment.

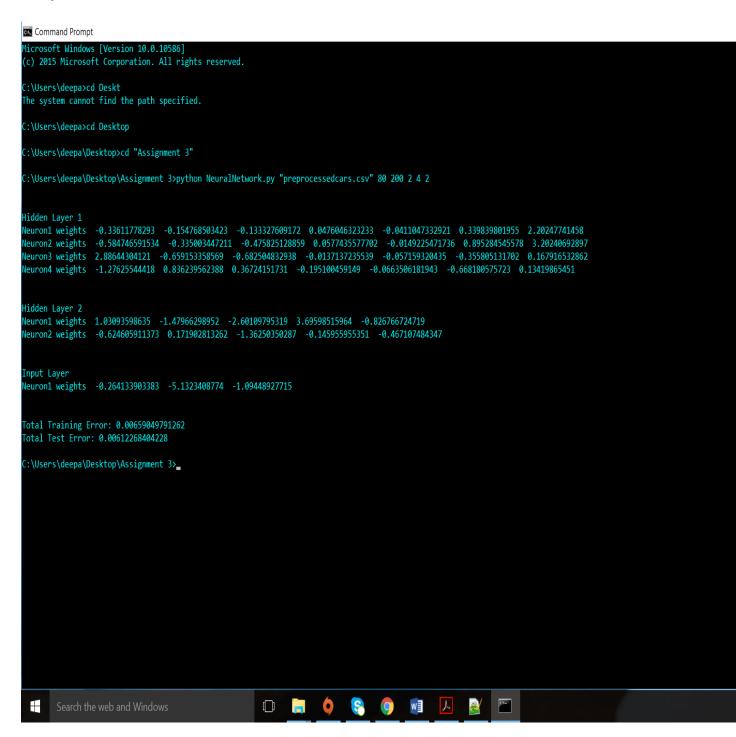
The screenshots have been attached below:

Step 1: Preprocessing Step



Step 2: Neural Network Algorithm

Preprocessedcars.csv:



Preprocessediris.csv

```
Command Prompt
Microsoft Windows [Version 10.0.10586]
(c) 2015 Microsoft Corporation. All rights reserved.
 ::\Users\deepa>cd Desktop
 :\Users\deepa\Desktop>cd "Assignment 3"
 ::\Users\deepa\Desktop\Assignment 3>python NeuralNetwork.py "preprocessediris.csv" 80 200 2 4 2
Hidden Layer 1
Neuron1 weights -0.0808553836684 0.0819474243323 0.927173209565 -0.895671034043 -1.40383742491
Neuron2 weights -0.14396293521 0.0317355443024 0.134086474247 0.501214831254 1.13845366953
Neuron3 weights -0.66381026662 0.0460021789617 -0.624173592889 -0.164618395556 -0.564863505295
Hidden Layer 2
Neuron1 weights 0.396380444989 1.97110668102 -2.1688295446 0.139505671996 0.305818328036
Neuron2 weights -0.0538244007582 -2.4614381773 0.570319674496 -0.435998720407 1.25840564119
Input Layer
Neuron1 weights -0.667099137625 -3.35209646437 2.88043077793
Total Training Error: 0.00225132262197
Total Test Error: 0.00200168608249
 :\Users\deepa\Desktop\Assignment 3>
```

Preprocessedadult.csv

```
:\Users\deepa\Desktop\Assignment 3>python NeuralNetwork.py "preprocessedadult.csv" 80 20 2 4 2
euron1 weights -2.28043346267 -1.57822979329 -0.0881340574655 -0.154032807456 -0.0050729343619 -1.10177904871 1.61786278561 -0.0891550923447 0.511759539684 0.150441834096 -0.113232507251 -2.587656
9022 -0.0969076987144 -0.832463842752 0.0193397608182
euron2 weights -1.15323861724 0.173206763249 -0.137612568924 -0.0997514922928 -0.0485411829163 -0.709771443378 0.525733961856 0.259851255169 0.358357625615 0.266210531612 0.160071463709 -2.01076357
47 -0.459075148425 0.295679954201 0.0398793412822
euron3 weights 0.106429667948 -1.1300052432 0.0644061330263 -0.0184610664912 0.00794952660891 -0.553448305877 -4.75819384546 -0.0627341303575 0.235851060801 -0.0283730680981 0.227036601183 -1.68129
521545 -0.0488856220696 -0.131937656569 0.0214277764905
leuron4 weights 0.487017040484 -1.18460665653 0.0346684545393 -0.0210483623405 0.0255724568159 0.516419985558 -0.386674416277 0.0816776799294 2.78169959894 0.0205336595894 -0.352106503301 1.8943696
0.00612756930073 0.768459047601 0.0787710918225
lidden Layer 2
euron1 weights -0.948144238689 1.60857270261 1.61495444381 3.55795682339 -1.54303502626
euron2 weights -0.27529323465 1.4360410614 -0.0270463211863 0.621032546766 -0.654329476551
 otal Training Error: 0.0138081953482
otal Test Error: 0.0136806862149
:\Users\deepa\Desktop\Assignment 3>
                                                                                                                                                               ^ = € Ф) = 11.3611.
```

References:

1. https://visualstudiomagazine.com/articles/2014/01/01/how-to-standardize-data-for-neuralnetworks.

aspx

- 2. https://mattmazur.com/2015/03/17/a-step-by-step-backpropagation-example/
- 3. Data pre-processing

https://www.mimuw.edu.pl/~son/datamining/DM/4-preprocess.pdf

4. http://neuralnetworksanddeeplearning.com/chap2.html