

Assignment -6

1. Create a new file in a directory and check whether the file exists already or not.

```
shankar@shankar-sb:~/Desktop$ cd modules/
shankar@shankar-sb:~/Desktop/modules$ ls
shankar@shankar-sb:~/Desktop/modules$ mkdir ex1_directory
shankar@shankar-sb:~/Desktop/modules$ cd ex1_directory/
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ ls file.txt
ls: cannot access 'file.txt': No such file or directory
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ vi file.txt
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ ls file.txt
file.txt
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ cat file.txt

Deep learning is a subset of machine learning, which is essentially a neural network with three or more layers. These neural network
s attempt to simulate the behavior of the human brain—albeit far from matching its ability—allowing it to “learn” from large amounts
of data. While a neural network with a single layer can still make approximate predictions, additional hidden layers can help to op
timize and refine for accuracy.

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physical tasks without human intervention. Deep learning technology lies behind everyday products and services (such as digital assi
stants, voice-enabled TV remotes, and credit card fraud detection) as well as emerging technologies (such as self-driving cars).

C
C
C

shankar@shankar-sb:~/Desktop/modules/ex1_directory$ ^C
```

2. Absolute path : /home/shankar/Desktop/modules/ex1_directory/file.txt

```
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ pwd
/home/shankar/Desktop/modules/ex1_directory
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ ls
file.txt
```

Relative path: ../ex1_directory/file.txt

```
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ realpath file.txt
/home/shankar/Desktop/modules/ex1_directory/file.txt
shankar@shankar-sb:~/Desktop/modules/ex1_directory$
```

3. Select a random file and do the following: a) Count the number of lines, words in the file
b) Display the list 10 files of a file c) Display the entire file d) Search a word 'X' in the entire file and display the lines with it.

i)

```
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ wc file1.txt
17  408 2792 file1.txt
```

ii)

```
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ head file1.txt
Machine learning algorithms leverage structured, labeled data to make predictions—meaning that specific features are defined from the input data for the model and organized into tables. This doesn't necessarily mean that it doesn't use unstructured data; it just means that if it does, it generally goes through some pre-processing to organize it into a structured format.

Deep learning eliminates some of data pre-processing that is typically involved with machine learning. These algorithms can ingest and process unstructured data, like text and images, and it automates feature extraction, removing some of the dependency on human experts. For example, let's say that we had a set of photos of different pets, and we wanted to categorize by "cat", "dog", "hamster", et cetera. Deep learning algorithms can determine which features (e.g. ears) are most important to distinguish each animal from another. In machine learning, this hierarchy of features is established manually by a human expert.

Then, through the processes of gradient descent and backpropagation, the deep learning algorithm adjusts and fits itself for accuracy, allowing it to make predictions about a new photo of an animal with increased precision.

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The above describes the simplest type of deep neural network in the simplest terms. However, deep learning algorithms are incredibly complex, and there are different types of neural networks to address specific problems or datasets. For example,

Convolutional neural networks (CNNs), used primarily in computer vision and image classification applications, can detect features and patterns within an image, enabling tasks, like object detection or recognition. In 2015, a CNN bested a human in an object recognition challenge for the first time.

Recurrent neural network (RNNs) are typically used in natural language and speech recognition applications as it leverages sequential or times series data.
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iv)

```
shankar@shankar-sb:~/Desktop/modules/ex1_directory$ grep "learning" file1.txt
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