

# COL341: Assignment 2

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## Neural Network

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### Name

neural - Run the executable program for linear regression

### Synopsis

```
./neural <part> <tr> <ts> <out> <other_options>
```

### Description

This program will train neural network model using given code on train data, make predictions on test data and write final predictions in given output file.

Note: You should be able to find the input\_size and num\_output\_classes from training data.

### Options

- **part:** Part as per question i.e. a/b/c.
- **tr:** File containing training data in csv format where 1st entry is the target
- **ts:** File containing test data in csv format where 1st entry is the target
- **out:** Output file for predictions. One value in each line.
- **other\_options:** Only for part a
  - batch\_size
  - activation\_function: relu, tanh, sigmoid
  - space seperated list of hidden layer sizes

### Example

1. Suppose
  - batch\_size: 100
  - activation\_function: relu
  - three hidden layers containing 50, 10 and 5 perceptrons each

```
./neural a train.csv test.csv output 100 relu 50 10 5
```
2. 

```
./neural b train.csv test.csv output
```
3. 

```
./neural c train.csv test.csv output
```

### Data

- devnagri.csv: Train data

## Marking scheme

Marks will be given based on following categories:

- For code, you can get 0 (error), half (code runs fine but predictions are incorrect within some predefined threshold) and full (works as expected).
- For part-b and part-c, marks will be given based on training time and accuracy on test data-set. There will be relative marking for this part.
- For part-b and part-c marking will be done in two parts: code (75%) and report(25%).

## Checking Program

Fraction of correct test samples and training time will be used as evaluation criterion.

## Submission

1. Your submission should be "ENTRY\_NO.zip".
2. Make sure you clean up extra files/directories such as "\_\_MACOSX"
3. Command "unzip ENTRY\_NO.zip", should result in a single directory "ENTRY\_NO".

# Naive Bayes

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## Name

naive - Run the executable program for Naive Bayes

## Synopsis

```
./naive <part> <tr> <ts> <output>
```

## Description

This program will train naive bayes model using given code on train data, make predictions on test data and write final predictions in given output file.

## Options

- part  
Part as per question i.e. a,b or c.
- tr  
File containing training data in csv format where 1st entry is the target
- ts  
File containing test data in csv format where 1st entry is the target

- out

Output file (write your predictions in this file)

## Example

```
./naive a train.csv test.csv output
```

## Data

- amazon\_train.csv: Train data
- amazon\_test.csv: Test data

## Marking scheme

Marks will be given based on following categories:

- For code: you can get 0 (error), half (code runs fine but predictions are incorrect within some predefined threshold) and full (works as expected).
- For part-c, marks will be given based on training time and accuracy on test data-set. There will be relative marking for this part.
- For part-c marking will be done in two parts: code (10) and report(5).

## Checking Program

Fraction of correct test samples and training time will be used as evaluation criterion.

## Submission

1. Your submission should be "ENTRY\_NO.zip".
2. Make sure you clean up extra files/directories such as "\_\_MACOSX"
3. Command "unzip ENTRY\_NO.zip", should result in a single directory "ENTRY\_NO".