# Automatic Essay Evaluation

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# Aim

To implement a framework for automatic essay evaluation using

- Feature Based (Statistical methods)
- Vector Models (Latent Semantic Analysis)
- Linguistic Structure Analysis (Model mental representations)

# Results of Previous Semester

- Gathered knowledge of ensemble modelling, NLP techniques.
- Measured relevance of search results using basic NLP techniques and statistical features.

# Timeline

28 Jan ● Completed Literature Survey
28 Feb ● Finish implementing Statistical and LSA Models
10 Apr ● Finish linguistic structure model

# Dataset and Evaluation Metric

- Fields
  - `Essay_Id`
  - `Essay_set`
  - `Essay`
  - `Rater1 score`
  - `Rater2 score`
- Evaluation metric: Quadratic weighing Kappa
- The square of the error difference between the human score and the predicted score is penalised.

# Statistical and LSA Models

Statistical

- Word count
- Sentence count
- Ratios
- Spelling accuracy
- Punctuation

LSA

- Words given weight based on frequency (TFIDF features)
- Dimensionality reduction using Singular Value Decomposition

# Linguistic Model

- Parts of Speech tags
- Label each sentence Ex: Support, Oppose, Cite, Claim, Hypothesis etc
- Based on these a rule based output decides a score