Automatic Slide Generation System

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outline

Why Presentation is Important..?

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In most of the fields for sharing information, slide presentation plays an important role. Presentation is the practice of showing and explaining the content of a topic to the audience or learner. In recent years, great emphasis has been laid on presentation and documentation skills. However, a logical composition is important for writing documentation and giving presentations than report-writing. Presenting well is all about achieving great levels of impact in front of groups of people.

The slides for presentation are traditionally prepared using various tools. However, this traditional way of presenting slides is labor-intensive. Labor-intensive nature leaves scope for human-errors. Also, for lengthy documents there is a chance of some vital information being missed out. Preparing slides manually may consume more time. The traditional tools thus require a lot of investment, both in terms of time and efforts In this work. **Though there exist an Automatic tools for slide generation but these existing automatic tools fail to fetch the graphical elements from a given input.**

These drawbacks of the traditional way lead to need for intelligent system. For that here is proposed an Automatic Slide Generation System. The proposed system fetches the graphical elements as well as text from a document. The proposed system focuses on developing a data-mining technique, which will help in scoring the sentences as well as in generating slides with graphical elements.

This system is designed by applying:

- Natural Language Processing (NLP)
- Integer Linear Programming (ILP)

The proposed system is more reliable than the existing system.

- Processor: Intel(R)Core(TM)2 Duo and Intel Core(TM) i5
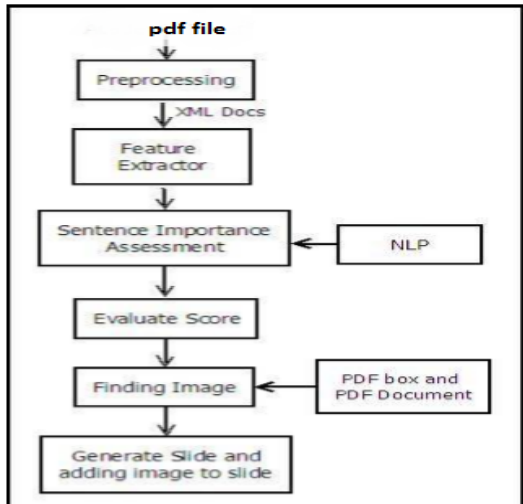- Hard-disk: 40GB
- RAM: 2GB (2048MB)
- Monitor : 15 VGA color

- **JDK 1.6 or Above**: JDK stands for Java Development Kit. This is a collection of software that allows a developer to create and deploy an application written in Java.
- **OS- Open System(Linux)**

The following figure shows the architectural view of the proposed system.
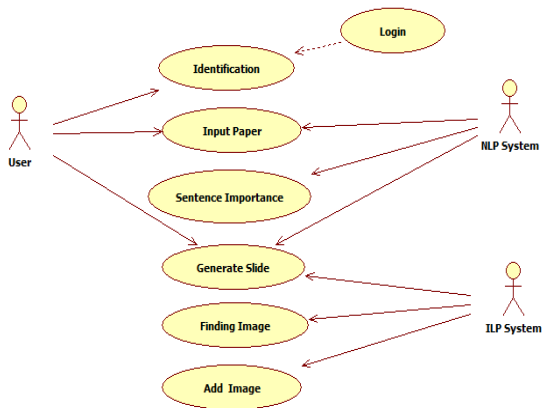
Use Case Diagram For Automatic Slide Generation System

The proposed system implements following algorithm for automatic slide generation along with graphical elements.

Algorithm 1: Proposed System Algorithm

Input: PDF file

Output: Slide Generated with graphical element and text.

Process:

- Read PDF File.
- Apply Parscit to detect their physical structures of paragraphs, sections and sections
- Token generation and apply stemmer.
- Remove Stop words and apply post tagging.
- Calculate sentence scoring using NLP.
- Add Image into Slide (See detail in Algorithm 2)
- Add scoring sentences and image using ILP method
- Generate the slide.

Algorithm 2:Algorithm for including graphical data into slide

Input: PDF file

Output: Adds Graphical element in slide

Process:

- Read PDF File.
- Load PDF file into PDF document.
- List of all pages in the document.
- Find image of each single page and store into map data.
- Repeat Step 4 for all pages.
- Check label of image and add image according to label.

Advantages

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- Not much labor-intensive
- Chance of some vital information being missed out is very less.
- Saves time
- No scope for human-errors

The proposed automatically generates the slides from the academic pdf. The system generates the slides which includes text and graphical element. The graphical elements along with the text data make the generated slides look more comprehensible and vivid. The system is time saving so the one can concentrate more efforts on his presentation preparation. Presently, the system generate slides on the basis of only one given pdf, but in future extra information like additional relevant pdf and information of citation can be utilized for improving the slides generation.

- Yue Hu and Xiaojun Wan, "PPSGen: Learning-Based Presentation Slides Generation for Academic Papers, in IEEE transactions on knowledge and data engineering, vol. 27, no. 4, april 2015.

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- M.-Y. Kan, Slideseer: A digital library of aligned document and presentation pairs, in Proceedings of the 7th ACM/IEEE-CS joint conference on Digital libraries, pp. 81 90, ACM, 2007.

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