Format Checking of FYP Reports (Word files)

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ABSTRACT

This project is a web application which will take a FYP report file in word format as an input and will compare it with the already defined actual format of the "National University of Modern Languages FYP report" and will Highlight the mistakes in the uploaded file. Logging file will also be generated which states the validation result of each and every validation such as heading's size and font, logos, chapter and paragraph headings, minimum word counts, table of contents and figures etc. The main purpose of the project is to save the time of both, the students, and the supervision panel as they won't have to check the report manually. It will surely be effective as there is no such system introduced before and will be efficient as the mistakes will be marked out after reading the file.

User will interact with the web application, where he/she will enter their names, email and upload their FYP report and after validation they will get autogenerated email (SMTP Services are used to do so) which contains Validated log text file (which contains each and every validation) and Final Year Project Report's FILE CONTAINING RED HIGHLIGHTED ERRORS. He can also download them directly from portal. Spire.doc library is used that will automatically extract the elements from the word file and will compare them with the already defined format which will be stored in the form of tables in the database. Asp.net is used for the frontend development, where there is a portal for Students and also for Administration. When user validates his FYP REPORT, he also gets a automatically generated TOKEN. This token can be used in administration portal where administration just searches the provided token and he can see which students have validated final year project report and which do not.

CERTFICATE

Dated: 30th June. 2023

Final Approval

It is certified that the project report titled **'Format Checking of FYP Reports (Word files)'** submitted by **Muhammad Ali Tahir**, **Farhan Bashir** and **Syed M. Sami Hassan** for the partial fulfilment of the requirement of **"Bachelor's/Master's Degree in Computer"** is approved.

COMMITTEE

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DECLARATION

We here by declare that our dissertation is entirely our work and genuine/original. We understand that in case of discovery of any PLAGIARISM at any stage, our group will be assigned an F(FAIL) grade and it may result in withdrawal of our bachelor's degree.

Group members:

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TABLE OF CONTENT

Chapter 1:

INTRODUCTION

This web application will help the users to check the format of their FYP reports. It will help them to check whether their report is according to the defined format provided by the university or not. Before, the students had to provide a hard copy of the report and the panel had to check the FYP reports manually for the mistakes. But this web application will help save time for both the panel and the students.

1.1. Project Domain:

As mentioned above, our system can check the content format of a FYP Word file. We will use web application to check the format through defined validations (which will be dynamic). The validations and the format on which the FYP word file's content will be checked will be provided. The system will run a complete scan of the file and will inform the user that whether the inserted file is according to the right format or not.

1.2 Problem Identification:

As we are aware that every FYP report is consisted of 6 chapters and is checked manually by the panel which is very time consuming as they have to check the format of the entire report according to the format provided by the university. Rather than consuming time on the actual content, most of the time is spent on checking the content formatting. The panel have to tell again and again about the mistakes identified in the report.

1.2.1. Proposed Solution:

Through our system, there is no need for checking format of FYP report manually. Students will just upload their FYP reports on a web portal and if there is any error in report formatting the updated result will be sent to the user where all of the mistakes will be highlighted. So, teachers time will not be wasted, and Student will be informed automatically without interference of the teacher itself.

1.2.2. Objectives:

To design a system that will save teachers time by checking the format by itself.

To design a system that will inform the students automatically by sending them an email

of validation results.

1.2.3. Scope of the Project:

Our project is web-based application. It contains the validations for every string whether it is for fonts, headings, title page, alignment of every string. It also provides the module for sending resultant report to Students themselves.

1.3. Effectiveness / Usefulness of the System:

The application will help us save the time of the panel as they won't have to check the report word by word and telly it with the provided format. Moreover, this app can be used for the report checking of the entire department as there are report checking twice or thrice a year.

1.4. Resource Requirement:

Basic PC/Laptop with suitable internet connection.

1.4.1. Hardware Requirement:

Hard

1.4.2. Software Requirement:

1.4.2. Software Requirement:

Visual Studio is required. For C# (NET Framework) development.

A Database software is required (i.e., SSMS)

1.4.3 Data Requirement:

No dataset is required as we have defined each validation with respect to FYP report format given to us.

1.5 Report Organization:

The report consists of six chapters. The first chapter is about the introduction of the project which consists of detailed discussion of project domain, effectiveness, and resource requirement. The second chapter of this report contains the information of background and existing system.

The third chapter includes system requirements and specifications which are discussed thoroughly. The fourth chapter is about system modeling and design which includearchitecture, use case, data flow and a system diagram of purposed system.

The fifth chapter is based on system testing and validation. This chapter includes discussionof system testing along with result which is require. And last chapter includes the conclusion of whole project which summarize the whole purposed application and future usage and goals.

Chapter 2:

BACKGROUND AND EXXISTING SYSTEMS

There is no need for checking format of FYP report manually. Students will just upload their FYP reports on a web portal and if there is any error in report formatting the updated result will be sent to the user where all of the mistakes will be highlighted.

2.1. Related Literature Review:

2.1.1 Spiral Doc Program Guide:

From a website ice blue, we were able to get the separate functions of spiral doc library such as paragraph, section, and document etc.

2.3. Identified Problem from Existing Work:

As we are aware that checking the FYP report manually is time consuming and is very hard to check it word by word. But for saving the time and checking the report digitally, there is no proper solution that was proposed. The checking of the report is maintained manually, so there is a chance of mistake in it. So, it is direly need of a good system to achieve the goal of proper checking of the report and mark the mistakes in it.

Chapter 3

SYSTEM REQUIREMENT AND SPECIFICATIONS

This chapter is about the module/software requirements and non-functional requirements of the developed system.

3.1. System Specification:

Our system is based on a web application that'll help the supervisor's panel or the students to identify the mistakes in the inserted FYP report. It will save the time of the supervisors as they won't have to check the format of the file manually.

The frontend of the application is built on **asp .net**. Backend of the application is built using **.net framework** with **Spire doc** package. The system is using code first approach.

3.2. System Modules

This section contains the modules of the system.

3.2.1. Web Application

The web application will provide a web interface for the end user to interact with the application. The user will provide input word file to the file content checking model and will get the result with marked mistakes by interaction with the web application.

3.2.1.1. File Upload:

A portal will be created where the user can upload his FYP report in word format.

3.2.1.2. Logging:

After the file is uploaded, user's document content will be compared with the format which we have defined in database. Certain Validations will be applied on that format which will be compared with user's document. After Validation is done each and every log will be generated which will contain the information of whether or not the

format is right or need changing. An updated file will be generated via spire.doc which will highlight the wrong format.

3.2.1.3. Email:

In this module, a portal will be designed at the front end where the user can add multiple email addresses. After the checking of the document format is done, an email will be sent to the added emails where the file with the errors will be attached. Simple Mail Transfer Protocol (SMTP) will be used for this service.

3.3. Functional Requirement/Software Features

3.3.1 Web Application:

The web application will consist of the following modules:

3.3.1.1. File Upload

A portal will be created where the user can upload his FYP report in word format.

Sr no	Description	Type
RQ-1.1	Integrate the validation model with web application	Evident
RQ-1.2	Get results from the web application	Evident

3.3.1.2. Logging

After the file is uploaded, user's document content will be compared with the format which we have defined in database. Certain Validations will be applied on that format which will be compared with user's document. After Validation is done each and every log will be generated which will contain the information of whether or not the format is right or need changing. An updated file will be generated via spire.doc which will highlight the wrong format.

Sr no	Description	Type
RQ-1.3	Format will be defined in the database	Evident
RQ-1.4	Validations will be applied in the business layer.	Evident
RQ-1.5	Obtain the output from the model and display it to the user	Evident

3.3.1.3. Email

In this module, a portal will be designed at the front end where the user can add multiple email addresses. After the checking of the document format is done, an email will be sent to the added emails where the file with the errors will be attached. Simple Mail Transfer Protocol (SMTP) will be used for this service.

Sr no	Description	Type
RQ-1.3	Email will be entered at the web portal	Evident
RQ-1.4	Obtain the output from the model and sent it to the user	Evident
RQ-1.5	Simple Mail Transfer Protocol will be used.	Evident

3.4. Non-Functional Requirements

This application can work without these requirements, but the application may not meet the expectation. The non-functional requirements for our application are:

3.4.1. Usability:

This application will be accessible by every student and faculty in the department. But it can also be accessed by the students of other departments as the code used for this application is dynamic.

3.4.2. Reliability:

This application will be developed using best practices, clean and efficient code.

3.4.3. Performance:

The system will ensure that the response time is as low as possible as we are using latest approach i.e.: dependency injection and code first approach.

3.4.4. Scalability:

Thia application will be scalable for future updates.

Chapter 4

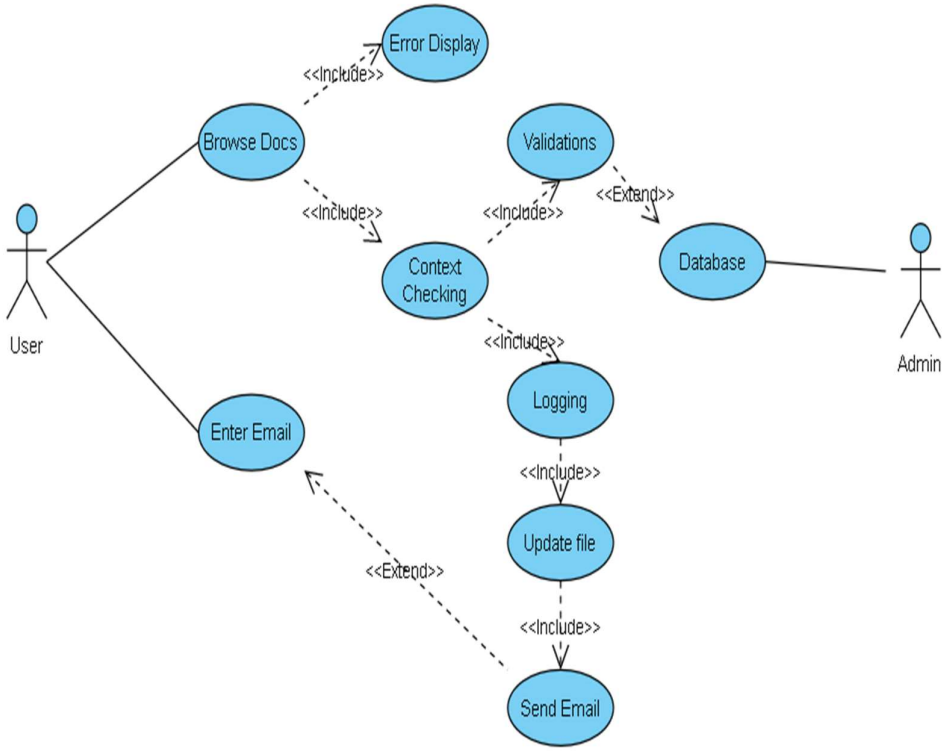
SYSTEM MODELING AND DESIGN

In this chapter we will discuss the system model and design. The whole structure of the application will be explained by the architecture diagram, the sequence of operations will be explained by the sequence diagram, the flow of data across modules is explained bythe data flow diagram and the possible interactions of the user with the system is explainedby the use case diagram.

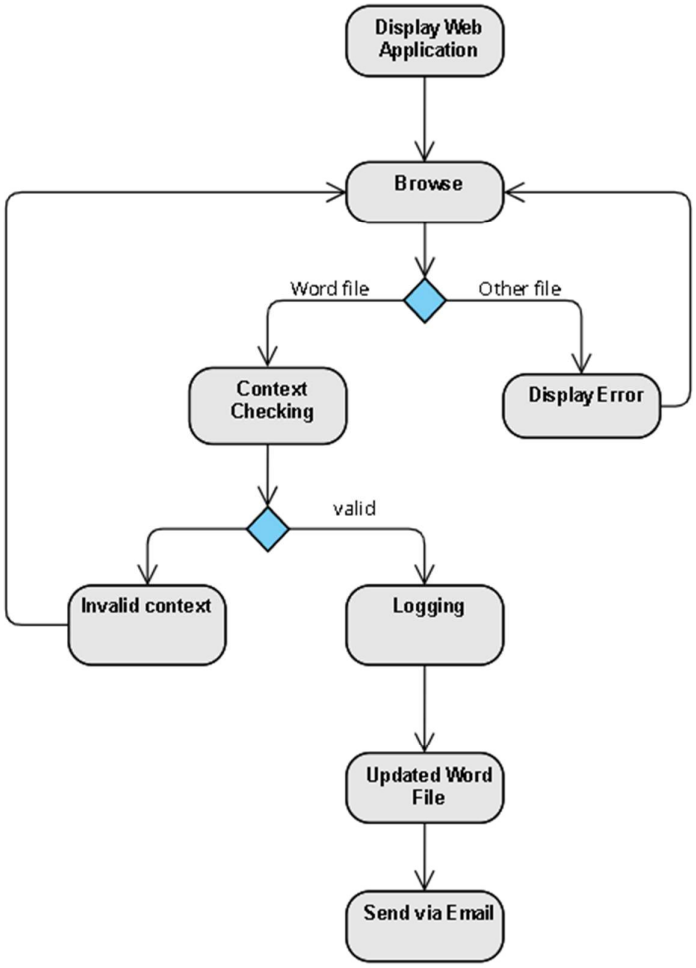
4.1. System Design and Analysis:

Our system is based on code first approach. Where we don't need to create database first. It also provides handles some of the functionality dynamically. It also contains dependencies so classes are loosely coupled.

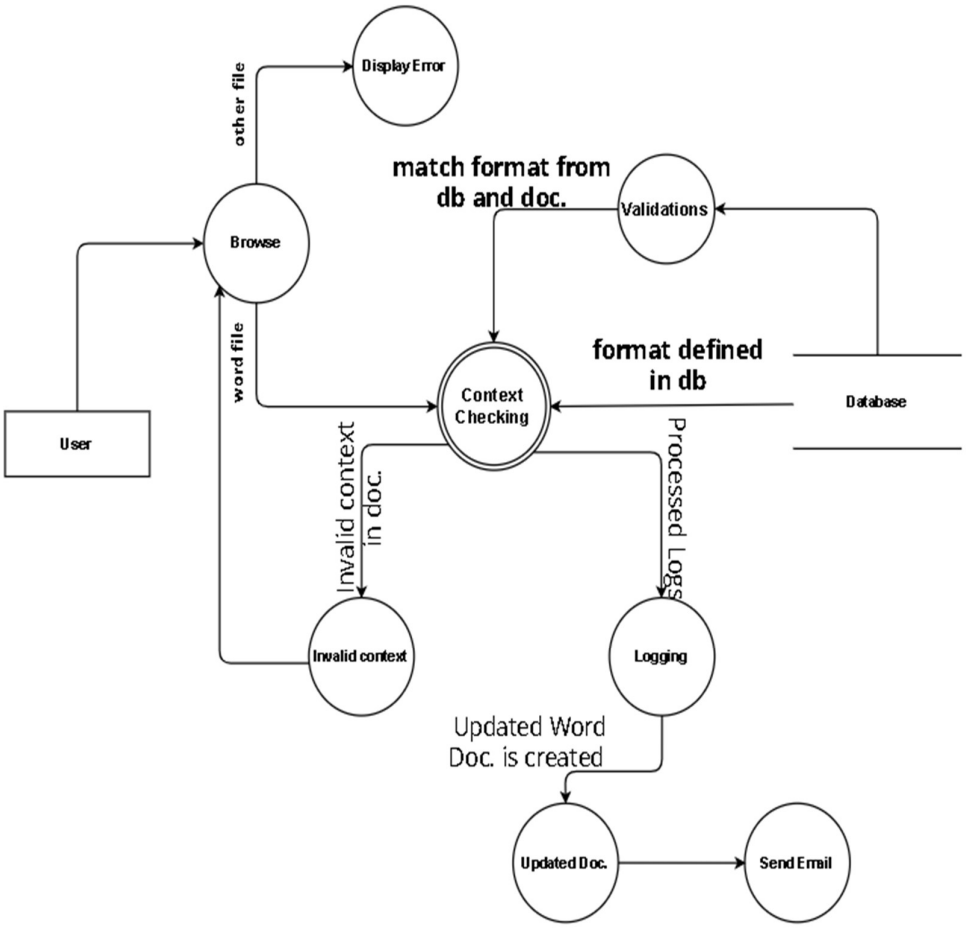
4.2. Use Case Diagram:



4.3. Activity Diagram:



4.4. Dataflow Diagram:



FUNCTIONAL DETAILS AND MINOR CHANGES IN WORK:

- As this project will be evaluated in JUNE, 2023. So, till then minor changes are being applied on weekly basis. Only remaining part to work on is the frontend where we have to create a portal for NUML students and its administrations, this part is also in final stages.
- To perform this functionality .NET development is used both console and ASP.NET development. To fetch the data from Word file (.doc) I have used library named "SpireDoc".
- For the validation of student's first 7 pages of FYP REPORT, I defined the rules in database by "Regular Expression" in some cases and by static words(like font, bold, unbold, alignment) in some case because there are so many static keywords in first 7 pages of FYP REPORTS like dates, names, specific format etc. Code of

these can be found in Business Layer, So there is separate file for every page as every page has its own name like certificate page, abstract page and so on

- After 7 pages, there is a check whether TABLE OF CONTENT, LIST OF FIGURES and LIST OF TABLES are AUTOGENERATED or not.

- Then comes the main part which is CHAPTERS. In chapters, chapters name, chapters headings and sub-headings are directly compared with corresponding chapters name, headings, sub-headings which are present in TABLE OF CONTENT in SEQUENCE. Also, more details are checked like: bold/unbold, fort size, font style, alignment, word count of main paragraph and its sub-paragraphs, availability of diagrams and tables as they are mentioned in "List of Figures" & "List of Tables". Code of this can be found in ManagementLayer.cs file inside Business Layer. At the end References are validated.

- As, I'm in my last semester only minor changes are being implemented here and there after every while so FINALIZED AND SIGNED (from FYP committee) report will be available in JUNE 2023. Only remaining part to work on is the frontend where we have to create a portal for NUML students and its administrations, this part is also in final stages.