**GRAPHIC ERA HILL UNVERSITY, DEHRADUN**

**PROJECT REPORT**

**SPELL CORRECTOR AND SUGGESTIONS GENERATOR**

**(CSE III Semester Mini project)**

**2020-2021**

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**Submitted to: Submitted by:**

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(CC-CSE-K-III-Sem) **Student id**.:200111110

**Guided by:**

Mr. Ashok Sahoo **Session**: 2020-2021

**CERTIFICATE**

### Certified that Mr. ABC (Roll No.- 1223456) has developed mini project on “Library Management System” for the CS VI Semester Mini Project Lab (PCS-604) in Graphic Era Hill University, Dehradun. The project carried out by Students is their own work as best of my knowledge.

Date:

(Mr. Akash Chauhan)

**Class Co-ordinator**

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(CSE Department)

GEHU Dehradun

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**Project Guide**

Resource Person

(CSE Department)

GEHU Dehradun

MINI PROJECT: SPELL CORRECTOR AND SUGGESTIONS GENERATOR

MADE BY: ADITYA JOHN

LANGUAGE USED: C++

PROBLEM STATEMENT: -

SPELL CORRECTOR IS A MINI PROJECT THAT NEEDS TO HAVE A STRING INPUT AND PROVIDE OUTPUT THAT SHOULD BE THE CORRECT WORD ITSELF OR SUGGESTIONS IF THERE CAN BE MORE THAN ONE POSSIBLE CORRECT WORDS THAT CAN BE DEDUCED BY LOOKING AT THE INPUT STRING.

MOTIVATION FOR DOING THIS PROJECT: -

THIS PROJECT IS VERY INTERESTING AS SPELL CORRECTOR IS THE MOST BASIC TOOL USED IN ANY DIGITAL KEYBOARD AND WITHOUT THIS TOOL ANY DIGITAL KEYBOARD IS USELESS THESE DAYS AND THIS PROJECT IS MORE CONCENTRATED ON BACK-END WORK WHICH I AM AT THE TIME MORE FLUENT IN, SO I CHOSE THIS PROJECT.

TOOLS AND METHODOLOGY:-

BASIC TOOLS THAT I HAVE USED TO ACHIEVE THE WORKING OF THIS PROJECT ARE:

1. WORKING ENVIRONMENT: CODEBLOCKS

2. APPROACH : DIVIDE AND CONQUERE

3. LANGUAGE : C++

METHODOLOGY FOLLOWED:

IN THE PROJECT I HAVE USED SOME LIBRAIRE’S (STRING.H, ALGORITHMS.H, CTYPE.H) TO HANDLE STRINGS IN A BETTER NON-COMPLEX WAY

AND I HAVE DIVIDE MY PROBLEMS AND MADE A FUNCTION FOR EACH TYPE. MOSTLY AN ALGORITHM IS USED TO ACHIEVE THE WORKING OF THE PROJECT COMBINED WITH SOME PRE-DEFINED FUNCTIONS TO MAKE WORKING ON STRINGS EASIER AND USE OF SOME FILE HANDLING.

ABOUT THE PROJECT:-

THIS PROJECT IS BASED UPON THE MISTAKES MADE WHILE TYPING ANY WORD. AND WITH THE HELP OF PREDEFINED DICTIONARY OF WORDS AND WITH THE COMBINATION OF SOME SMALL AND EASY ALGORITHM WE CAN DETECT AND PREDICT THE MISTAKE AND SUGGESTIONS RESPECTIVELY.

BRIEF INTRO ABOUT WHAT IT WORKS UPON:-

THERE ARE DIFFERENT CATEGORIES IN WHICH A MISTAKE DONE WHILE TYPING CAN BE CLASSIFIED, THESE ARE:-

1. MISSING CHARACTER : A WORD CAN HAVE A MISSING CHARACTER WHEN THE USER TYPES IT.

2. EXTRA CHARACTER : A WORD CAN HAVE AN EXTRA CHARACTER WHEN THE USER TYPES IT.

3. EXCHANGED CHARACTER : A WORD CAN HAVE A CHARACTER THAT WHEN EXCHANGED WITH SOME OTHER CHARACTER CAN GIVE YOU THE CORRECT WORD WHEN THE USER TYPES IT.

4. INCORRECT ARRANGEMENT : A WORD CAN HAVE AN IMPROPPER ARRANGEMENT OF LETTERS WHEN THE USER TYPES IT.

HOW IT WORKS:-

THE PROJECT BASICALLY COMBINES SOME SKILLS WE HAVE ALREADY LEARNT IN COMPUTER SCIENCE ENGG. SUCH AS ALGORITHMS STL (STANDARD TEMPLATE LIBRARIES, LISTS, CONTAINERS, FILE HANDLING, FUNCTIONS, AND USE OF ALGORITHMIC APPROACH) ALL OF THIS IS DONE USING C++ AS THE PRIME LANGUAGE.

NOW THAT WE KNOW WHAT WE ARE USING LETS TALK ABOUT HOW IT WORKS:-

FIRST AN INPUT IS TAKEN BY THE USER AND THIS INPUT IS A STRING THAT HAS TO BE EVALUATED FOR EVERY TYPE OF TYPING MISTAKES THAT WE DISCUSSED ABOUT.THEN EVERY FUNTIONS GENERATES A SUGGESTION OF ITS OWN THAT IS DISPLAYED.

ABOUT EVERY FUNCTION IN DETAIL:-

MAIN() :- ITS A LOOP THAT NEVER ENDS YOU CAN GIVE AS MANY OUTPUT AS ONE WANTS THIS IS MADE NON PRACTICAL ONLY FOR DISPLAY PURPOSE.

What it does: - IT TAKES AN INPUT FROM USER THEN THERE IS A LOOP THAT CONVERTS ALL INPUT TO LOWER CASE FIRST.

THEN A TEXT FILE IS OPENED USING FILE HANDLING

THEN EVERY WORD THAT MATCHES THE LENGTH OF INPUT IS COMPRED AND IF It’s A PERFECT MATCH THEN THE INPUT IS CORRECT.

ELSE NOW WE KNOW THAT THE INPUT IS NOT CORRECT AND HENCE WE WILL CALL ALL THE FUNCTIONS THAT WILL FIND THE CORRECT WORD FOR US.

MISSING CHAR ():- WE HAVE A COUNTER VAIABLE THAT GIVES US A RESULT IF THE METHODS WORKS AND WE ARE ABLE TO FIND THE CORRECTED WORD IN THE TEXT FILE.

WE INSERT A CHARACTER(from 'a' to 'z' one after another) AT THE END OF THE WORD AND THEN WE SORT IT IN ASCENDING ORDER AND WE FIND WORDS THAT MATCHES THE NEW LENGTH OF THE WORD AND WE SORT THE WORD FROM TEXT FILE TOO AND MATCH IT WITH THE WORD IF WE FIND THEN WE HAVE CORRECTED THE MISSING CHARACTER TYPE OF ERROR IN TYPING.

EXTRA ():- WE TAKE THE INPUT AND FIND EVERY WORD WITH LENGTH-1 AND THEN WE ERASE ONE CHARCHTER AND TRY TO MATCH IT WITH THE WORDS FROM TEXT FILE AND HENCE WE HAVE CORRECTED THE EXTRA CHARACTER MISTAKE.

EXCHANGED CHARACTER ():- WE WILL EXCHANGE EVERY LETTER OF THE WORD AND TRY TO FIND IT IN THE WORD FILE AS FOLLOWS:-

WE WILL EXCHANGE THE LAST LETTER WITH EVERY ALPHABET AND TRY TO MAKE A CORRECT WORD IF IT FAILS THEN WILL SHIFT TO SECOND LAST AND DO THE SAME AND JUST LIKE THIS WE WILL MOVE ON TILL WE CORRECT THE EXCHANGED CHARACTER MISTAKE.