Question 1

FASTLISH (A New Language)

Fastlish is a modified form of English Language developed by the developers of FAST NU. The

main purpose of this language is to communicate with a fellow fastian in an encrypted form. So

in this language basically the letters of English language are replaced by some other letters. And

this is a one to one mapping. So for example every english letter has mapped letter. So for

example ‘a’ might be mapped to ‘y’ and ‘o’ is mapped to ‘e’.

So basically there is an underlying scheme of every letter mapped to some other letter. The

secret recipe to generate a word in this language lies in the roll no. of a student. So for example

one student has a Roll no. 18F-WXYZ. Now there are 2 secret codes for the encoded characters

one code is W+X+1 for the capital Letters and second code is Y+Z+1 for the small letters.

Part 1:

Now write a Program in which you declare 2 integers a=W+X+1 and b=Y+Z+1. Now create 2

Pointers, P1 will point to ‘a’ and P2 will point to ‘b’. Then write a function void

GenerateCode(int\* P1,int\* P2,char\* line). This function takes a line by reference and changes it

into the encrypted line.

Example scenario:

My Roll no is 18F-0805. So Code 1 is 0+8+1 = 9 and Code 2 is 0+5+1 = 6.

Now For Capital letters Code is 9 and For Small letters Code is 6.

Input: Hello World!

Output: Qkrru Fuxrj!

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Computer Programming Lab 1(b)

Pointers

So every capital letter is replaced by (W+X+1)th character ahead and every small letter is

replaced by (Y+Z+1)th character ahead. Hint: W is replaced by F. So assume after ‘z’ there

comes an ‘a’ again and after ‘Z’ there comes an ‘A’.

Part 2:

After Encoding the characters you need to decode the character and do everything above

exactly in the opposite manner. So your Decode function will be like void Decode(int\* P1, int\*

P2, char\* line).

Main function:

your main fucntion shoule be something like this:

...

Print Original Line

GenerateCode(....)

Print Encoded Line

Decode(...)

Print Decoded Line

...

Console Output:

Console Screen of your output should be exactly like this:

Original Line: Hello World!

Encoded Line: Qkrru Fuxrj! (You might have a different encoded line)

Decoded Line: Hello World! (Must be same as original line)

**Code:**

#include<iostream>

#include<string>

using namespace std;

void GenerateCode(int\* (P1), int\*(P2), char\* (line));

void Decoder(int\* (P1), int\*(P2), char\* (line));

int main()

{

int a = 4, b = 10;

int \*P1 = &a;

int \*P2 = &b;

char ch[] = "Hello World!";

char \*line = ch;

cout << "Orignal line: " << line << endl;

GenerateCode(P1, P2, line);

cout << "Encoded line: " << line << endl;

Decoder(P1, P2, line);

cout << "Decoded line: " << line << endl;

system("pause>0");

return 0;

}

void GenerateCode(int\* (P1), int\*(P2), char\* (line))

{

for (int i = 0; line[i] != '\0'; i++)

{

if ((\*(line + i) > 96) && (\*(line + i) < 123))

{

if (\*(line + i) < 114)

{

\*(line + i) = \*(line + i) + \*P2;

}

else

{

\*(line + i) = ((\*(line + i) + \*P2) - 122) + 96;

}

}

else if ((\*(line + i) > 64) && (\*(line + i) < 91))

{

if (\*(line + i) < 86)

{

\*(line + i) = \*(line + i) + \*P1;

}

else

{

\*(line + i) = ((\*(line + i) + \*P1) - 90) + 64;

}

}

else

{

\*(line + i) = \*(line + i);

}

}

}

void Decoder(int\* P1, int\*P2, char\* line)

{

for (int i = 0; line[i] != '\0'; i++)

{

if ((\*(line + i) > 96) && (\*(line + i) < 123))

{

if (\*(line + i) > 106)

{

\*(line + i) = \*(line + i) - \*P2;

}

else

{

\*(line + i) = 123 - (\*P2 - (\*(line + i) - 97));

}

}

else if ((\*(line + i) > 64) && (\*(line + i) < 91))

{

if (\*(line + i) > 68)

{

\*(line + i) = \*(line + i) - \*P1;

}

else

{

\*(line + i) = 91 - (\*P1 - (\*(line + i) - 65));

}

}

else

{

\*(line + i) = \*(line + i);

}

}

}

