



Secure Approach for Message Communication

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Abstract: Recent years have witnessed the rapid development of the telecommunication techniques the use of text messaging purposes has grown significantly in the recent days. In the process of sending messages, security of the message is an important challenge as the messages are more vital or secret and protecting data stored in and transferred between distributed components from unauthorized access is very important. The contents of common SMS messages are known to the network operator's systems and personnel, or if the user is in the public then there is more chance of information getting leaked there by confidentiality of information has increased at phenomenal rate. Therefore to safeguard the information from attacks, number of data/information hiding methods have evolved various techniques can be used to in sending messages in a secure manner. This paper highlights the problem and provides some possible approach to solve this problem.

Keywords: Telecommunication techniques, SMS messages, Decimal numbers.

I. INTRODUCTION

Every language got alphabets and numbers. But it is easy to learn numbers because the basic character set of numbers are just 10 i.e. (0 to 9). So by using this method we thought why we can't interpret characters using numbers. If number is entered it is interpreted as a character. How? That is, if user says 2 it is interpreted as 'a' same way if 22 → b, 222 → c, 3 → d, 33 → e. and so on.

Why this concept? Because, messaging has become one of the primary ways we communicate, both in our personal and professional lives. Message is a medium by which sender and receiver communicates to each other. But sometime it is essential to hide their own message from third party in such a way that only they two (Sender and Receiver) can understand the message, as contents of common SMS messages are known to the network operator's systems and personnel, or if the user is in the public then there is more chance of information getting leaked.

For this reason sender should encode the data and then he can send the data to the receiver. The encoded form cannot be understood by third party. When receiver gets it, he/she convert it in to original message i.e. he/she decodes it.

Hence we come with a method inputting the message in a secure manner, only thing is the user need to practice the interpretation of entering numbers based on characters. At the initial a user might feel difficulty as it is a difficult task. But to achieve security, some sacrifice is needed.

II. PROBLEM DEFINITION

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1	2 a b c	3 d e f
4 g h i	5 j k l	6 m n o
7 p q r s	8 t u v	9 w x y z
*	0 —	#

When receiver gets it, he/she convert it in to original message i.e he/she decodes it. Here we also develop a C program to encode a data and we also develop a code to decode the data.



III. PROCESS

User will input a string in the encoded format and the message will be processed and displayed in the decoded format.

Ex: if the message to be sent is “job done” then the input is “56662206668833777”

Input details:

j	o	b	space	d	o		n	e
↓	↓	↓	↓	↓	↓	↓	↓	↓
5	666	22	0	3	666	#	66	33

Space → 0 (zero)

→ delimiter for repetition (ex: if you want to type “abc” then we need to type 2 22 222) as input string will take this as 222222 then the input will be ambiguous hence to avoid this problem we put # symbol between repeated numbers like 2#22#222.

IV. CONVERSION PROCESS

We know that English alphabet contains 26 characters. And decimal numbers are from 0 to 9. In order to maintain security with every decimal number we associate few alphabets as shown in the fig. like 2 → a b c, 3 → d e f and so on. Number 0 is used for space. Symbol # is used for avoiding repetition. ex: if you want to type “abc” then we need to type 2 22 222) as input string will take this as 222222 then the input will be ambiguous hence to avoid this problem we put # symbol between repeated numbers like 2#22#222

1	2 a b c	3 d e f
4 g h i	5 j k l	6 m n o
7 p q r s	8 t u v	9 w x y z
*	0 —	#

V. METHODOLOGY

Let us take the input string as

Array a → 56662203666#6633

Array b → 5*666*22*0*3*666*#*66*33

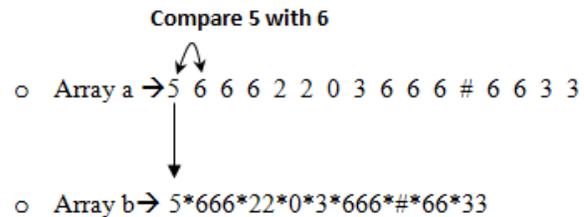
Insert a delimiter with every different number in the input string.

To do that we have to copy every single character from the input string to another string with delimiter. The delimiter can be anything.

A. How to insert delimiter?

Here we can compare every character with its next character like:

If (a[i] == a[i+1]) → if yes then copy a[i] to b[i]
 → If no then copy a a[i] to b[i] then copy * to b[i] like the way it is mentioned below



B. How to compute the delimiter array:

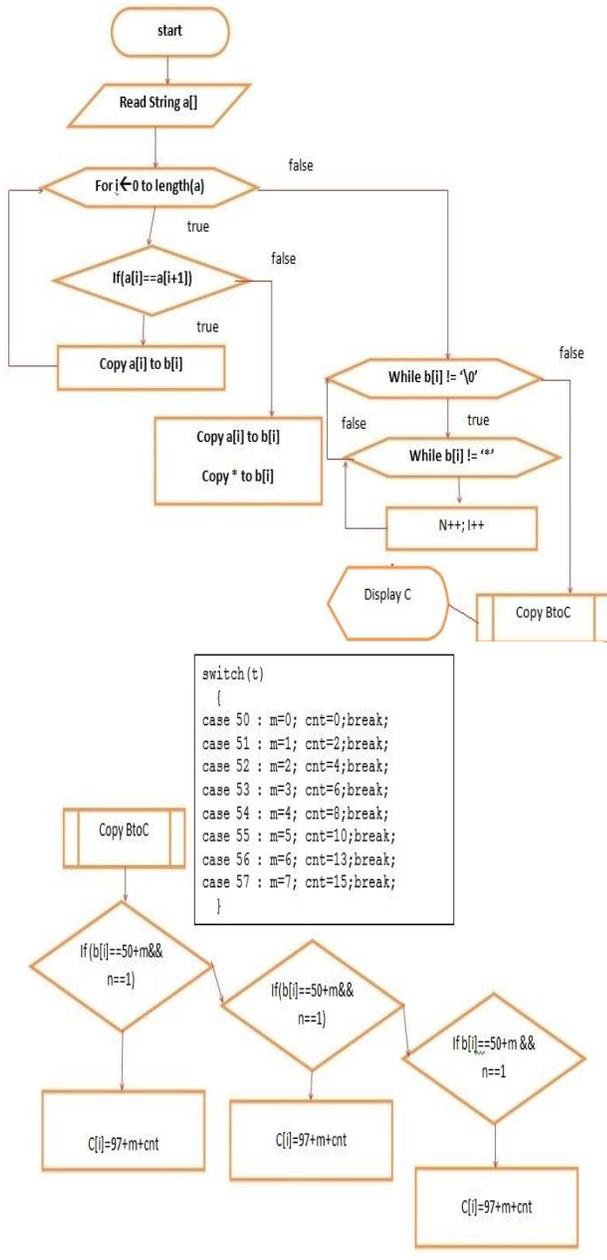
Increment the value of a **count** variable until **b[i] != ***. And identify the number to be inserted in destination array “C”.

Ex: let say input is

- 2 → count = 1 → the value to be inserted is “a”
- 22 → count = 2 → the value to be inserted is “b”
- 222 → count = 3 → the value to be inserted is “c”



VI. WORK FLOW DIAGRAM

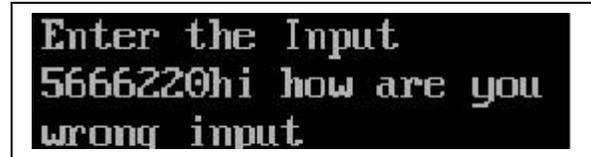


VII. OUTPUT

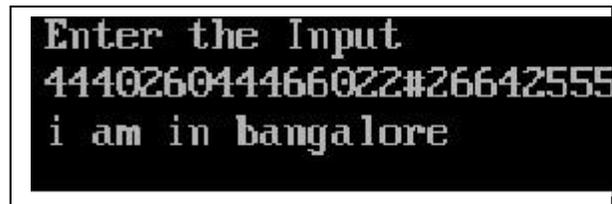
Output-1



Output-2



Output-3



VIII. CONCLUSION

The problem highlighted is discussed in details with examples. Some possible measures to overcome this problem are also proposed in above writing. Hope this may help in further research on this topic and finally solve the Message communication.

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BIOGRAPHY



Prof. Syed Khutubuddin Ahmed Khadri had received his MCA Degree from PES Institute of Technology, Bangalore under VTU (visvesvaraya technological university, Belgaum) in the year 2008. He has 4 year 9 months of



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