



# Secure Approach for Message Communication

Syed Khutubuddin Ahmed Khadri<sup>1</sup>, Debabrata Samanta<sup>2</sup>, Mousumi Paul<sup>3</sup>

Dept of MCA, REVA Institute of Technology & Management, India<sup>1</sup>

Dept of MCA, Acharya Institute of Technology, India<sup>2</sup>

Dept of CSE, National Institute of Technology, India<sup>3</sup>

**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

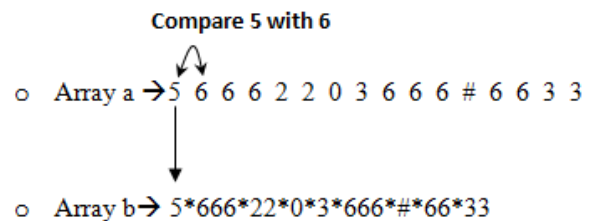
Insert a delimiter with every different number in the input string.

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:

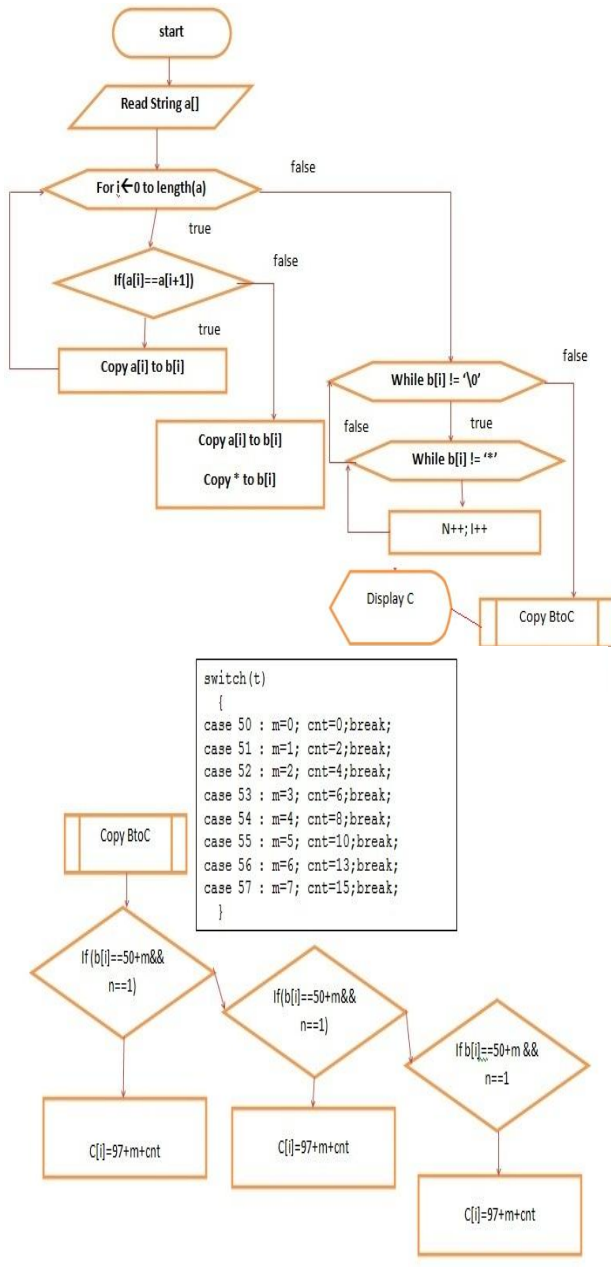
Increment the value of a **count** variable until **b[i] != \***. And identify the number to be inserted in destination array “C”.

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”

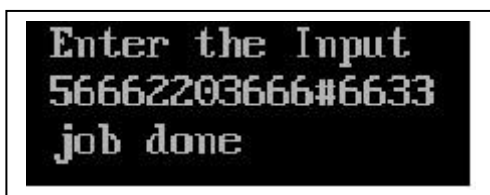


VI. WORK FLOW DIAGRAM

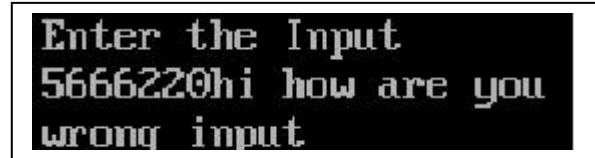


VII. OUTPUT

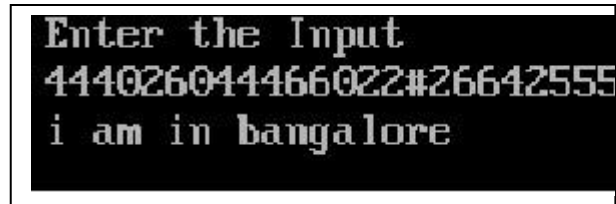
Output-1



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



teaching experience at post graduate level. He is currently working as an Assistant Professor in REVA Institute of Technology & Management, Bangalore. His area of interest is Programming languages, DBMS, Data Structures & image processing. He had been awarded as the best faculty in the year 2011 for academic excellent by KNS Institute of Technology and He had been awarded as practitioner of innovative teaching methodologies by Wipro technologies in a mission10X conclave program held in the year 2012 at VVIT Mysore.



**Prof. Debabrata Samanta**, a member of the IAENG, Board member of the Seventh Sense Research Group Journals (SSRGJ). He obtained my B.Sc. (Physics Honors) in the year 2007, from the Vivekananda Collage, Takurpukur, under Calcutta

University; Kolkata, India .He obtained my MCA in the year 2010, from the Academy Of Technology, under WBUT. He has been working his PhD in Computer Science and Engg. from the year 2010 from National Institute of Technology, Durgapur, India in the area of Image Processing .He is presently working as a Assistant Professor Grade III of MCA dept in Acharya Institute of Technology, Bangalore, Karnataka, India from 19th Aug,2013. His areas of interest are Artificial Intelligence, Natural Language Processing and Image Processing. He has published 43 papers in International Journals / Conferences.



**Mousumi Paul**, is a member of the IAENG,a Member of the Machine Intelligence Research Labs (MIR Labs). She obtained her MCA in the year 2010, from the Academy Of Technology, under WBUT. She is

presently working as a Lecturer of Computer Science & Technology in Elite Polytechnic Institute, West Bengal, India.Beside of this She is doing PhD from NIT Durgapur, West Bengal. Her research topic is "Vehicular Ad-Hoc Network" and she was working her research on this topic for last two years. she published 10 papers in International Journals / Conferences.