# Riaz Ali Soomro Study Material





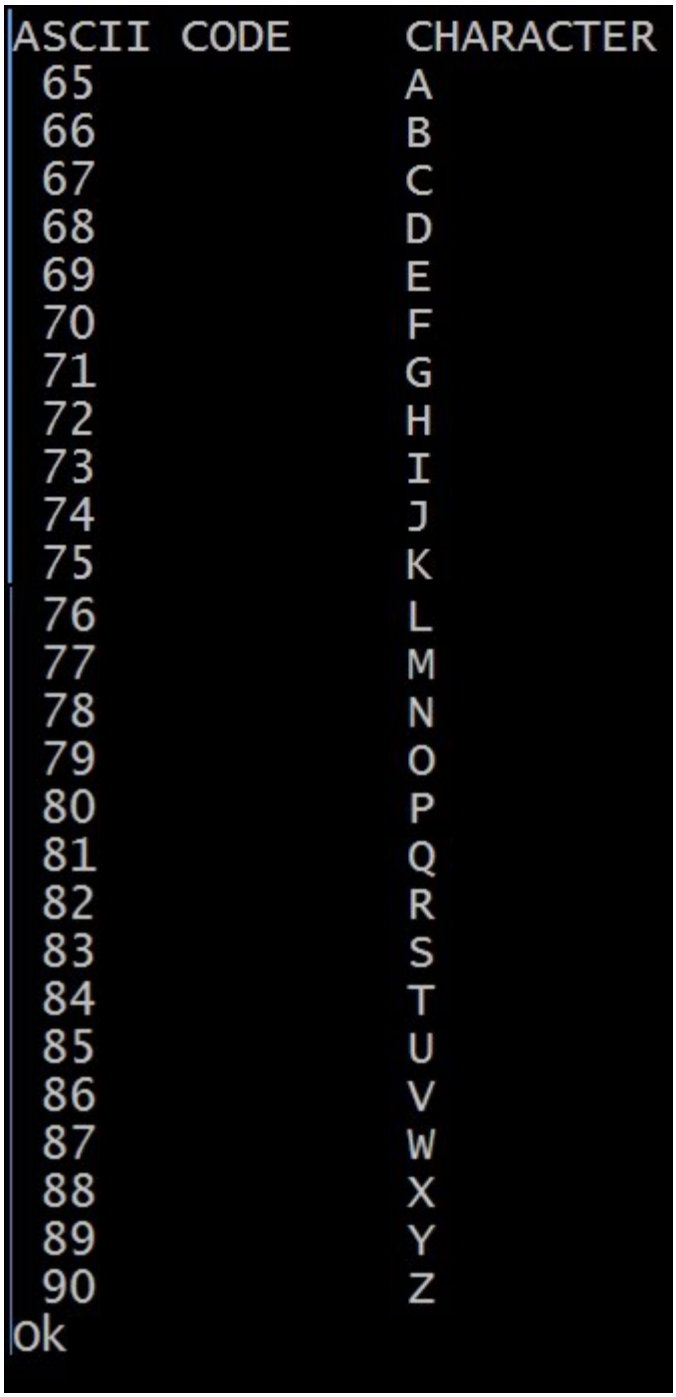


## GW BASIC Programs

**Dear students I am updating this page as well, so keep visiting this page to find/read the updated material/topics.**

### => Code to write the ASCII Code and their respective Characters (using Sub-routines)

```
10 PRINT "ASCII CODE","CHARACTER"
20 FOR K=65 TO 90
30 GOSUB 60
40 NEXT K
50 END
60 PRINT K,CHR$(K)
70 RETURN
```




Here the function **CHR$** converts the number passed from its arguments, means from "()" brackets, to its equivalent CHARACTER.

Reverse of this is **ASC** function which converts the CHARACTER passed from its arguments to its equivalent ASCII CODE

Example is given below

```
10 INPUT "ENTER ANY CHARACTER";C$
 20 PRINT "THE ASCII CODE OF CHARACTER IS";ASC(C$)
```

```
RUN
ENTER ANY CHARACTER? T
THE ASCII CODE OF CHARACTER IS 84
Ok
RUN
ENTER ANY CHARACTER? s
THE ASCII CODE OF CHARACTER IS 115
Ok
```

You can see from the above output that when we INPUT the character **T** (capital T) then it is showing its ASCII CODE, that is, 84. And when we INPUT the character **s** (small s) then it shows ASCII CODE 115, that is code of small s (because the ASCII CODES of small ABC range between 97 to 122)

## => Code to INPUT a string and PRINT it in reverse order (like NATSIKAP for PAKISTAN)

```
10 INPUT "ENTER ANY STRING";ST$
 20 FOR J=LEN(ST$) TO 1 STEP -1
 30 PRINT MID$(ST$,J,1);
 40 NEXT J
 50 END
```

**Output**

```
RUN
ENTER ANY STRING? PAKISTAN
NATSIKAP
Ok
RUN
ENTER ANY STRING? THIS IS SOME DUMMY T
TXET YMMUD EMOS SI SIHT
Ok
```

## => Code to PRINT any STRING in triangle format, like following format

Like if we INPUT the string PAKISTAN then the output will be

P
PA

PAK
PAKI
PAKIS
PAKIST
PAKISTA
PAKISTAN

**Code**

```
10 INPUT "ENTER ANY STRING";ST$
 20 FOR OUTER=1 TO LEN(ST$)
 30 FOR INNER=1 TO OUTER
 40 PRINT MID$(ST$,INNER,1);
 50 NEXT INNER
 60 PRINT
 70 NEXT OUTER
 80 END
```

**Output**

```
RUN
ENTER ANY STRING? PAKISTAN
P
PA
PAK
PAKI
PAKIS
PAKIST
PAKISTA
PAKISTAN
Ok
RUN
ENTER ANY STRING? COMPUTER
C
CO
COM
COMP
COMPU
COMPUT
COMPUTE
COMPUTER
Ok
```

Now to print the **triangle in REVERSE order** use the following code (modified code is highlighted)

```
 10 INPUT "ENTER ANY STRING";ST$
20 FOR OUTER=LEN(ST$) TO 1 STEP -1
 30 FOR INNER=1 TO OUTER
 40 PRINT MID$(ST$,INNER,1);
 50 NEXT INNER
 60 PRINT
 70 NEXT OUTER
 80 END
```

**Output**

```
RUN
ENTER ANY STRING? PAKISTAN
PAKISTAN
PAKISTA
PAKIST
PAKIS
PAKI
PAK
PA
P
Ok
RUN
ENTER ANY STRING? COMPUTER
COMPUTER
COMPUTE
COMPUT
COMPU
COMP
COM
CO
C
Ok
```

### => Code to INPUT 5 subjects and then PRINT any RANDOM subject out of those

```
10 RANDOMIZE TIMER
 20 DIM SUB$(5)
 30 FOR K=0 TO 4
 40 INPUT SUB$(K)
 50 NEXT K
 60 PRINT "RANDOMLY SELECTED SUBJECT IS
 ";SUB$(INT(RND*5))
 70 END
```

**Output**

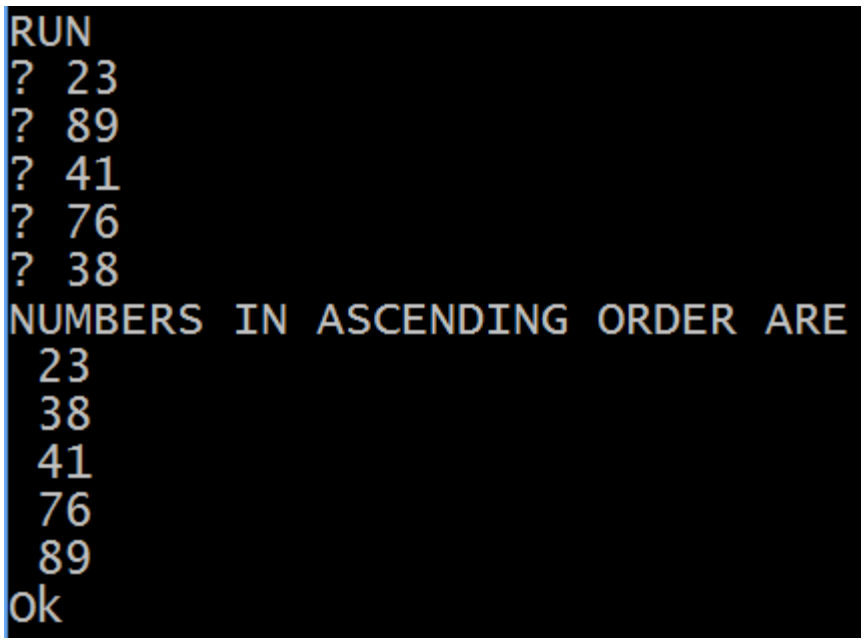
```
RUN
? ENGLISH
? COMPUTER
? PHYSICS
? BIOLOGY
? CHEMISTRY
RANDOMLY SELECTED SUBJECT IS BIOLOGY
Ok
RUN
? ENGLISH
? COMPUTER
? PHYSICS
? BIOLOGY
? CHEMISTRY
RANDOMLY SELECTED SUBJECT IS ENGLISH
Ok
```

### => Code to sort the numbers, arrange them in ascending order, (using arrays)

```
10 DIM NUM(5)

20 FOR K=0 TO 4

30 INPUT NUM(K)

40 NEXT K

50 FOR I=1 TO 4

60 FOR J=0 TO 4-I

70 IF NUM(J) > NUM(J+1) THEN LET
 TMP=NUM(J):NUM(J)=NUM(J+1):NUM(J+1)=TMP

80 NEXT J

90 NEXT I

100 PRINT "NUMBERS IN ASCENDING ORDER ARE"

110 FOR H=0 TO 4

120 PRINT NUM(H)

130 NEXT H
```

```
140 END
```

**Output**



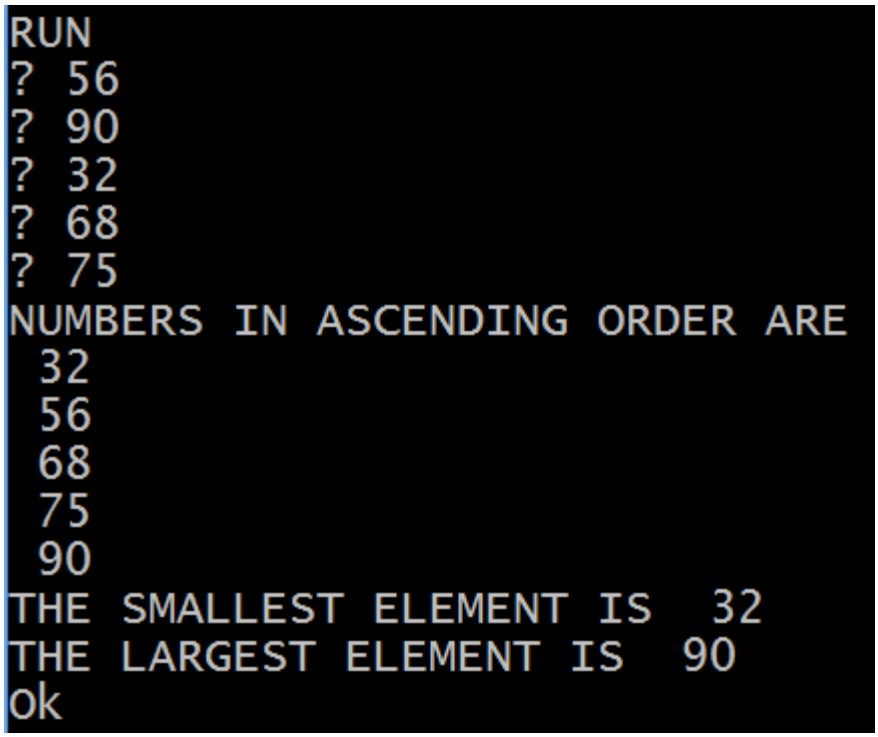

Using almost the same program you can find the **Greatest number** and the **Smallest number**. You just have to sort the array in ASCENDING order first, then the **1st** element of array will be the **smallest** and the **last** element of array will be the **greatest or largest** element (because the array is already sorted and we know that the smallest element comes at the 1st position and largest element will be at the last position of array).

Code with some modification (highlighted text) is shown below:

```
10 DIM NUM(5)
 20 FOR K=0 TO 4
 30 INPUT NUM(K)
 40 NEXT K
 50 FOR I=1 TO 4
 60 FOR J=0 TO 4-I
 70 IF NUM(J) > NUM(J+1) THEN LET
 TMP=NUM(J):NUM(J)=NUM(J+1):NUM(J+1)=TMP
 80 NEXT J
 90 NEXT I
 100 PRINT "NUMBERS IN ASCENDING ORDER ARE"
 110 FOR H=0 TO 4
 120 PRINT NUM(H)
 130 NEXT H
```

```
140 PRINT "THE SMALLEST ELEMENT IS ";NUM(0)
 150 PRINT "THE LARGEST ELEMENT IS ";NUM(4)
 160 END
```

**Output**

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