UITS

Future will be better than thy past

An initiative of PHP Family

University of Information Technology & Sciences

Lab Report

Course Code: CSE 314

Course Title: Microprocessors and Microcontrollers Lab

Experiment No: 06

Experiment Name: Write a program in assembly code that prints the toggle case.

Submitted To: Ms. Sultana Rokeya Nahar

Assistant Professor

Dept of CSE

Submitted By:

Name	**:** Md Shoayeb islam
Id No	**:** 1814351071
Batch	**:** 43
Semester	**:** 7th
Section	**:** A
Department	**:** CSE

Date of Submission: 30-07-2021

Theory: In this code we tried to show how can a case of a character can be toggled. we started from scratch and then tried to build program gradually. All steps are can be seen in this code. The task is achieved by XOR-ing the character with 20H ASCII (American Standard Code for Information Interchange) which is space character. We used XOR instruction which is defined in Intel 8086 microprocessors assembly instruction set.

Source Code:

```
; You may customize this and other start-up templates;
; The location of this template is c:\emu8086\inc\0_com_template.txt

org 100h

TITLE CASE_TOGGLE_PROGRAM
.MODEL SMALL
.STACK 100H
.DATA
MSG1 DB 0AH, 0DH, "ENTER A CHARACTER $"
MSG2 DB 0AH, 0DH, "YOU ENTERED $"
MSG3 DB ", CASE TOGGLE IS $"
CHAR DB ' '

.CODE
MAIN:
MOV AX, @DATA
MOV DS, AX


LEA DX, MSG1
MOV AH, 09H
INT 21H


MOV AH, 01H
INT 21H

MOV BL, AL

LEA DX,MSG2
```

```
MOV AH, 09H
INT 21H

MOV DL, BL
MOV AH, 02H
INT 21H

LEA DX, MSG3
MOV AH, 09H
INT 21H

MOV DL, BL
XOR DL, CHAR
MOV AH, 02H
INT 21H


EXIT:
MOV AH, 04CH
INT 21H

END MAIN


ret
```

Output:

```
ENTER A CHARACTER n
YOU ENTERED n, CASE TOGGLE IS N

ENTER A CHARACTER T
YOU ENTERED T, CASE TOGGLE IS t
```

Comments: I understand the procedure of the code. Then I Implement it. And I write the code in emu8086. I run the code successfully. I got the result and then check output but the output is right.