**Logo, company name

Description automatically generated**

**Department of (Department Name)**

**Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology, Haripur, Pakistan**

**COMP-261L Computer Organization & Assembly Language Lab**

**Lab Report:02**

**Class: BS Computer Science**

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**Registration No.: B20F0436CS031**

**Semester: 3rd**

**Submission Date: 21 Oct, 2021**

**Submitted to: Lab Engr. Rafi Ullah**

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**Instructor Signature**

**Lab Tasks:**

**Lab Task 01:**

Write a set of instructions in 8086-88 assembly language that swaps the contents of CX and DX registers without using XCHG instruction.

**Code:**

.Model small

.stack 100h

.code //Code Start

main proc

mov cx,123 //move value into CX register

mov dx,456 //move value into DX register

mov ax,cx //move cx into ax temp

mov cx,dx //mov dx into cx

mov dx,ax //move ax into dx

main endp

end main

**Output:**

Graphical user interface, application

Description automatically generated

**Task 2**

Write a set of instructions in 8086-88 assembly language that swaps the contents of SS and DS registers.

**Code:**

.Model small

.stack 100h

.code

main proc

mov ax,123

mov ss,ax

mov ax,456

mov ds,ax

mov dx,ss

mov ss,ax

mov ds,dx

main endp

end main

**Output:**

**Graphical user interface, application, table, Excel

Description automatically generated**

**Task 3**

Write a set of instructions in 8086-88 assembly language that swaps the contents of memory locations ABCDH : 2345H and 1234H : 78DEH without using XCHG instruction.

**Code:**

.model small

.stack 100h

.code

main proc

mov ax,0abcdh

mov bx,1234h

mov [2345h],ax

mov [78deh],bx

mov cx,ax

mov ax,bx

mov bx,cx

mov [2345h],ax

mov [78deh],bx

main endp

end main

**Output:**

**Graphical user interface, application

Description automatically generated**

**Task 4**

Write a set of instructions in 8086-88 assembly language that swaps the contents of upper and lower bytes in BX register without using XCHG instruction.

**Code:**

.model small

.stack 100h

.code

main proc

mov ax,9fffh

mov bl,al

mov al,ah

mov ah,bl

main endp

end main

**Output:**

**Graphical user interface, application

Description automatically generated**

**Task 5**

**Code:**

**Output:**

**Results & Observations:**

In this lab we practice on software emu8086 and try to learn about syntax of Assembly language. And we further practice about mov and xchange command in emu8086 we try different tasks and learn the logic of it and saw its results how to give value in different registers and how to XCHG value between registers by using xchange command and also by temporary variables. And get satisfactory results.