CO Lab Assignment-3

REPORT

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Objectives:

Introduction to basic 8086 assembly programming.

Exercises:

a) The 8086 has four special segment registers:

· CS - points at the segment containing the current program.

· DS - generally points at segment where variables are defined.

· ES - extra segment register, it's up to a coder to define its usage.

· SS - points at the segment containing the stack.

These registers are all 16 bits wide.

b) The 8086 has 8 general purpose registers, each of which is 16 bits wide. They are-

· AX - the accumulator register (divided into AH / AL).

· BX - the base address register (divided into BH / BL).

· CX - the count register (divided into CH / CL).

· DX - the data register (divided into DH / DL).

· SI - source index register.

· DI - destination index register.

· BP - base pointer.

· SP - stack pointer.

There are two special purpose registers on the 8086, i.e. the instruction

· IP - the instruction pointer.

· Flags Register - determines the current state of the processor

They are all 16 bits wide.

c) x86 is a family of instruction set architectures[a] initially developed by Intel based on the Intel 8086 microprocessor and its 8088 variant. The 8086 was introduced in 1978 as a fully 16-bit extension of Intel's 8-bit 8080 microprocessor, with memory segmentation as a solution for addressing more memory than can be covered by a plain 16-bit address. The term "x86" came into being because the names of several successors to Intel's 8086 processor end in "86", including the 80186, 80286, 80386 and 80486 processors.

d) The different memory models of 8086 programs are-

tiny model, small model, compact model, medium model, large model and huge model.

e) Assembler directives are instructions to the assembler to perform various

storage reservation ,bookkeeping tasks, and other controls .

Some assembler Directives of the 8086 Microprocessor are-

.EXTERN

.GLOBAL

.SEGMENT

.OFFSET

.PROC

.GROUP

.INCLUDE