# MP PRACTICAL ASSIGNMENT - 9

Ques1 What is control transfer instructions. Explain in details.

Ans 1 A control register is a processor register which changes or controls the general behaviour of a CPU or other digital device. Common tasks performed by control registers include interrupt control, switching the addressing mode, paging control and coprocessor control.

CR0, CR1, CR2, CR3 are control registers of 80386 microprocessor

This registors are accessible to system programmers only via variants of the MOV instruction, which allows them to be loaded from or stored in general registers.

For example,

MOV EAX CR0

MOV CR3 EBX

Ques 2 What different conditions used to find factorial of an integer number?

Ans 2 Factorial of a non-negative integer, is multiplication of all integers smaller than or equal to n.

eg: factorial of 4 is $1 \times 2 \times 3 \times 4 = 24$.

Factorial is not defined for negative number and factorial of zero is one

Ques3 Explain CALL, JG, ADD instructions.

Ans3 CALL :-
It activates an out-of-line procedure, saving on the stack the address of the instruction following the call for later use by a RET (return instruction).
It places the current value of EIP on the stack.
The RET instruction in the called procedure uses this address to transfer control back to the calling program.

JG :-
Jumps if greater.

ADD :-
Replaces the destination operand with the sum of the source and destination operand sets overflow.

Ques4 Explain POP & PUSH instructions in detail.

Ans4 PUSH decrements the stack pointer (ESP), then transfers the source operand to the top of stack indicated by ESP. PUSH instruction operates on memory operands, immediate operands & registers operand.

PUSHA instruction simplifies procedure calls by reducing the no. of instructions general registers to use in a procedure.

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POP transfers the word or doubleword at the current top of stack (indicated by ESP) to the destination operand and then increments ESP to point to the new top of stack. POP moves information from the stack to a general register or to memory.