

Istanbul Bilgi University
Department of Computer Engineering

SPRING, 2021
Campus: Santral

CMPE 312: OPERATING SYSTEMS

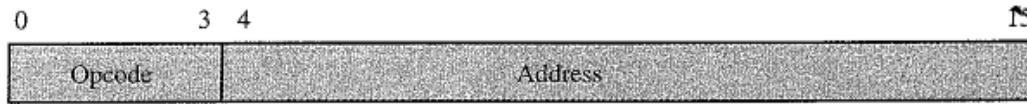
Homework

(Duration: minutes)

Name :

Student ID :

NOTE: Do this HW at home. We will check at lecture' time. No need to handle it.



(a) Instruction format



(b) Integer format

Program counter (PC) = Address of instruction
Instruction register (IR) = Instruction being executed
Accumulator (AC) = Temporary storage

(c) Internal CPU registers

1. {100 points} Example of program execution:

- (a) {20 points} Define your own hypothetical machine by fixing the hexadecimal code for at least 3 instructions; one of them MUST be a "jump"
- (b) {20 points} Create your own piece of code containing one jump instruction, and
- (c) {60 points} Execute it by showing the relevant portion of memory's cells, and registers' contents at every steps of the fetch-execute cycle ¹

¹Ref: 'A Top-Level View of Computer Function and Interconnection' by William Stallings