

This file will be under constant additions until the solutions of all problems of the corresponding operating systems textbook are included

Solutions to the selected problems

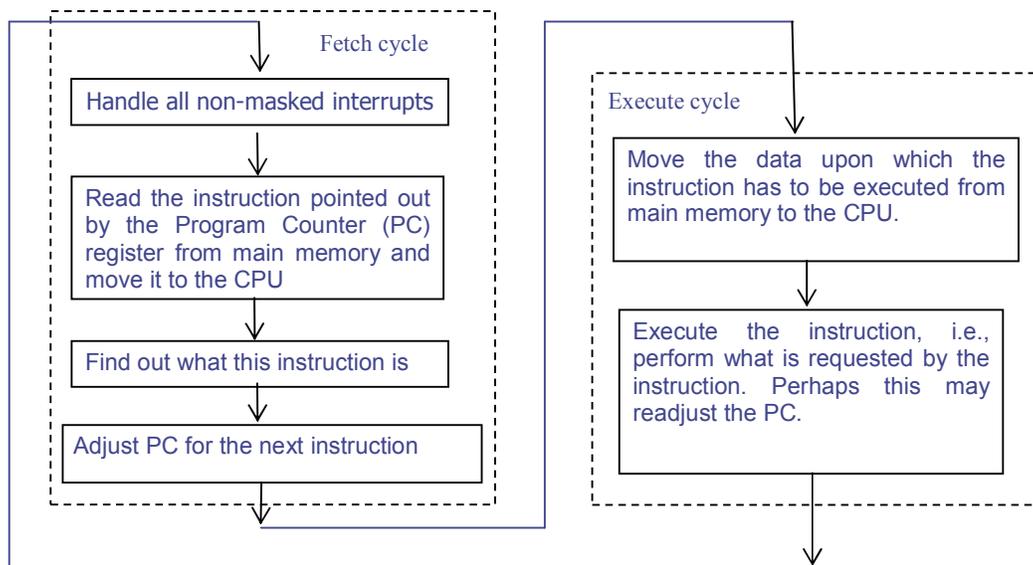
**Corresponding textbook:
Operating System Concepts and Techniques**

**By: M. Naghibzadeh
Printed by: iUniverse, ISBN: 0-595-37597-9**

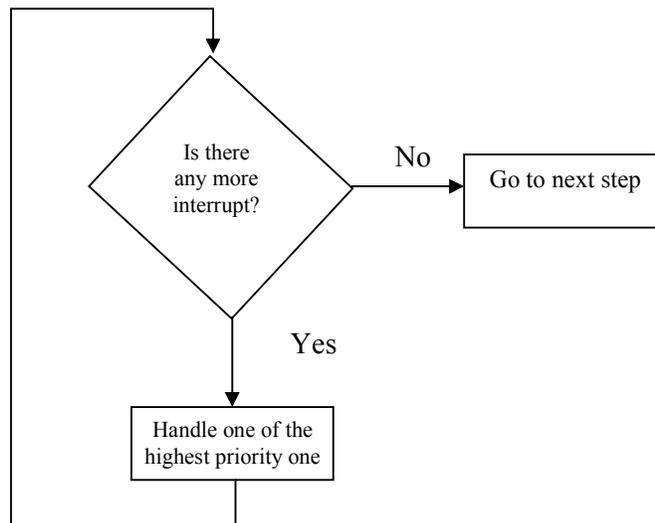
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Chapter 1

1.1. The fetch-execute cycle is modified as follows:



The details of “Handle all non-masked interrupts” is:



1.3. By adjusting the PC during the fetch cycle we save the time to adjust it in a separate micro cycle. This saves us at least a micro cycle for each non-branch instruction. The PC has to be adjusted (or readjusted) during the execute cycle, anyways. Therefore, overall program execution time is reduced.

1.4. Code segment and segment collectively compose main memory. On the other hand, we are allowed to modify instructions during program execution. Therefore, the whole main memory is still a read/write device.

- 1.5. The advantage is the reduction of wiring which reduces the hardware complexity. The disadvantage is that concurrent transfer of addresses or data between devices is not possible which in turn increases instruction's execution.
- 1.6. A program called Basic Input/Output System (BIOS) which can boot the operating system in every start/restart of the computer. In addition BIOS includes many primitives, procedures and processes with wide applicability.
- 1.7.a. the Answer is: $2^{24} = 16777216$.
- b. $2^{32} = 4294967296$.

Chapter 2

Chapter 3

Chapter 4

Chapter 5

Chapter 6

Chapter 7

Chapter 8

Chapter 9

Chapter 10

