

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.

1. {140 points} Questions:

- (a) {5 points} List the main tasks of an Operating System
 - (b) {5 + 5 points} Draw the main elements of a computer system
 - (c) {2+3+5 points} What is an interrupt? How it is generated? What is a trap?
 - (d) {5 points} What is an interrupt vector?
 - (e) {5 + 5 points} What is a system call? Which types of system call do you know?
 - (f) {10 points} In a time-sharing environment, several users share the system simultaneously: How can we reach MM protection?
 - (g) {10 points} In a time-sharing environment, several users share the system simultaneously: How can we reach I/O protection?
 - (h) {5 + 5 points} Draw the diagram of 5 process states. What is the semantic of every state? How does a process move from one state to the other?
 - (i) {5 + 5 points} What is a Process Control Block (PCB)? Which information does it store?
 - (j) {5 + 5 points} Long term scheduler versus short term scheduler versus medium term scheduler. What are their functions?
 - (k) {10 points} How does the system call execute? Can you explain picture 1?
 - (l) {10 points} How does the interrupt execute? Can you explain picture 2?
 - (m) {10 points} How to use system calls to make input/output operations? Can you explain picture 3?
 - (n) {10 points} In a time-sharing environment, several users share the system simultaneously: How can we reach MM protection? Can you explain picture 4?
 - (o) {10 points} What is context switch? Can you explain the picture 5?
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