Kingdom of Saudi Arabia Ministry of Education University of Jeddah College of Computer Science and Engineering Department of Computer Science and Artificial Intelligence	جامعة جدّة University of Jeddah	المملكة العربية السعودية وزارة التعليم جامعة جدّة كلية علوم وهندسة الحاسب قسم علوم الحاسب والذكاء الاصطناعي

Assignment 2
CCCS 225 Operating Systems
Second Trimester 2022/2023

Submission Date/Time: 13 Feb 2023 before 23:59

Student Name: Khalid Ibrahim Nimri   **Student ID:**

Instructor Name	Section

Instructions:

The assignment must be submitted before the allocated Date/Time.

The assignment must by uploaded on LMS or sent by email to teacher@uj.edu.sa.

Plagiarism will be punished according to university rules.

PLO/CLO	SO
PLO S1 (CLO 2): Demonstrate operating systems interactions with hardware components and other software applications	**SO 2:** Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline

		Max Score	Student Score
PLO S1 / CLO 2 / SO 2	Question	10	
Total		**10**	
Teacher Comments (if any):			

Question: Main Memory PLO S1 / CLO 2 / SO 2   **[10 marks]**

Given memory partitions of 100 KB, 500 KB, 200 KB, 300 KB and 600 KB (in order).
How would each of the **first-fit**, **best-fit** and **worst-fit algorithms** place processes of 212 KB, 417 KB, 112 KB and 426 KB (in that order)?   [8 marks]

Solution:

- First-Fit:

First-fit First hole big enough	
100KB	
500KB	Process 1
200KB	Process 3
300KB	
600KB	Process 2
Note: Process 4 must wait	

- Best-Fit:

Best-fit Smallest hole big enough	
100KB	
500KB	Process 2
200KB	Process 3
300KB	Process 1
600KB	Process 4

- Worst-Fit:

Worst-fit Largest hole big enough	
100KB	
500KB	Process 2
200KB	
300KB	Process 3
600KB	Process 1
Note: Process 4 must wait	

In above case, which algorithm makes the most efficient use of memory?   [2 marks]

Answer: Best-fit

Someone is Watching Me