People's Democratic Republic of Algeria Larbi Ben M'hidi University O.E.B Department: Math and Computer Science 2nd Year Computer Science Module OS

Name

## EXAMEN S4

#### **QUESTIONS 4PTS**

- If an address of an instruction has a deplacement value equal to 50 in a page, what is its value in a box .. why ?
  - Value is .....because.....
  - If the Switching time value is different to zero the execution time will increase or decrease ?
    - ▶ .....

#### EX1 8PTS

We have a single-processor system and the 4 processes P1, P2, P3 and P4 which make calculation and inputs / outputs according to the time given below:

Processus P1	Processus P2
Calcul : 3 time UNITs	Calcul : 4 time UNITs
i/o : 7 time UNITs	I/ O: 2 time UNITs
Calcul : 2 time UNITs	Calcul : 3 time UNITs
i/o: 1 time UNITs	I/ O: 1 unité de temps
Calcul : 1 time UNITs	Calcul : 1 time UNITs
Processus P3	Processus P4
Calcul : 2 time UNITs	Calcul : 6 time UNITs
I/ O: 4 time UNITs	I/ O: 3 time UNITs
Calcul : 2 time UNITs	Calcul : 1 time UNITs

**QUESTIONS** : knowing that THE SCHEDULER WILL INSERT THE PROCESSES INTO THE APPROPRIATE ready QUEUE(S) IN THIS ORDER P3 P1 P2 P4 . Show how the 4 processes will use the processor (the execution timing schedule) in each of the following cases :

- CASE 1: Each process has its own I/O device and the scheduler operates according to shared time mode (RR)(quantum Q = 3). >>>> 2.5 PT
- CASE 2: a mixed Policy with dynamic priority (preemptive), Q=4 and all ready queues AND the order of services of I/O requests for the disc is done according to an FIFO policy. 3PTS
- Information about the priority management (priority (p1) = 95, priority (P2) = 98, priority (p3) = 98, priority (p4) = 96) where After each I/O operation, the priority value of a process is decreased by the duration of its last CPU burst. Help : the value subtracted must not exceed the time quantum (Q).

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- In terms of residence time, which is the best policy case 1 or case2? Justify. 1.5 PT
- give the moment and the processes that are considered by the first switching context in case1 0.5 PT
- WHAT do we call the period of time ]22...24] in case 2.... 0.5

# EXO 2 4 PTS

knowing that we have :

-3 Memory boxes,

-The reference chain is: 0, 1, 4, 2, 0, 1, 3, 0, 1, 4, 2, 3 and the presence bit of all these pages in main memory is equal to 0.

The question is to SIMULATE using the FIFO remplacement algorithm and to replay to this assumption by two different ways « enlarging the Main Memory will reduce the number of defects (defaults) of pages ».

## COURSES & PW UNIX questions 4PTS

➢ How many acess mode are there in UNIX?

There are .....modes.

Mode 1 is ..... mode 2 is.....

**<u>Q</u>** Tick the right response

- 1. To create a DIRECTOERY named exam, We use the command:
  - RMDIR exam
  - mkdir exam
  - Makdir Exam

2. To access the exam directory following the command of the PREVIOUS question, we use the command

- Exit
- LS exam
- cd exam

3. Following the previous command we want to add the output of a command to an already created file file, we use the command:

- file >> command
- file > command
- command>> file
- 4. To display the contents of the exam folder, use the command:
- exam
- CAT exam
- ls -l exam
- 5. The last command is pwd, write its result

.....

**QUESTIONS 1** 

Fixe or static (same)... fragmentation.... Cloascing OR Compaction

Time consuming (takes a lot of time)

50 because box and page have the same size

#### **INCREASE**

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CASE1

# RES P3 =13 P1 =23 P4= 24 P2 =25 AVR-CASE 1=21.25

Every colored part 0.5\*5

P1	R	R	R	А	А	А	B	В	В	В	В	В	В	R	R	R	R	R	А	А	B	R	R	А	Т			Ī
P2	R	R	R	R	R	R	A	А	А	R	R	R	R	R	A	В	В	R	R	R	A	А	А	В	R	A	Т	Ī
P3	R	A	А	В	В	В	B	R	R	R	R	R	А	А	Т													Ī
P4	R	R	R	R	R	R	R	R	R	А	А	А	R	R	R	А	А	А	В	В	B	R	R	R	А	Т		ſ
Т	0	1	2	3	4	5	6	7	8	9	10	11	12	13	<mark>14</mark>	15	16	17	18	19	20	21	22	23	24	<mark>25</mark>	26	ſ

CASE 2

P1 95-3= 92-2=90

P2 98-4=94-3=91

P3 98-2=96

P4 96-2=94

res P3 =12 , p4=21 P2=27 P1 28 AVRE\_CASE2=22

Every colored is 0.5

P1	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	А	А	А	В	В	В	В	В	В	В	А	А	В	А	Т
P2	R	R	R	А	А	А	А	В	В	R	R	R	R	R	R	R	R	R	А	А	А	b	b	b	b	В	R	А	Т	
P3	R	А	А	В	В	В	В	R	R	R	R	А	А	Т																
P4	R	R	R	R	R	R	R	А	А	А	А	R	R	А	А	В	В	В	R	R	R	А	Т							
Т	0	<mark>1</mark>	2	3	4	5	6	7	8	<mark>9</mark>	<mark>10</mark>	11	12	13	14	15	16	17	18	19	20	<mark>21</mark>	<mark>22</mark>	<mark>23</mark>	<mark>24</mark>	2	<mark>26</mark>	2	<mark>28</mark>	<mark>29</mark>
																										<mark>5</mark>		<mark>7</mark>		
	+ AVR RES TIME CASE 1 IS better justification is the calculation abouve													IDLE state																

+ AVR RES TIME CASE 1 IS better justification is the calculation abouve

+switching time IS COLORED ON THE TABLE p3p1

Exo2

FIFO **3 BOXES** 

Ref C BOXES	0	1	4	2	0	1	3	0	1	4	2	3		
0	0	0	0	2	2	2	3	3	3	3	3	3		
1		1	1	1	0	0	0	0	0	4	4	4		
2			4	4	4	1	1	1	1	1	2	2		
DP	+	+	+	+	+	+	+	-	-	+	+	-		

QUEUE (1pt) 243<del>102410</del>

### R1 FROM COURSES BELADAY ANOMALIE

SIMULATION 4 BOXES THE NB DEFAULT IS INCREASED 10

# Response unix

3 mode three access modes: read (r), write (w), or execute (x).

- 1. 1• mkdir exam
- 2. 2 cd exam
- 3. 3 command>> file
- 4. 4. ls -l exam
- 5. 5 exam