**DS 25/2**

**Exercice 1**

**Q1 :**

1965-1980, Deux Architectures basées sur deux unités differentes (Mot/caractere)

* IBM system 360 => compatibilité logicielle
* Multiprogrammation
* Spoolage
* Temps partagé
* Multitache
* Debut d’Unix

**Q2 :**

L’ordonnancement est réalisé par l’ordonnanceur. L’ordonnanceur est un algorithme qui élit un processus. Ce processus a le privilège d’accéder au CPU. L’ordonnanceur va donc « structurer » l’execution des processus jusqu’à la terminaison de ceux-ci.

**Exercice 2**

**Q1 :**

****

**Q2 :**

On utilise :

* 6 sémaphores init. à 0 (S1-S6)
* 3 sémaphores init. à 1 (S7-S9)

**Code P1 :**

P1A

P(S3)

P(S7)

P1B

V(S7)

**Code P2 :**

P(S2)

P2A

P(S8)

P2B

V(S8)

V(S5)

P(S7)

P(S9)

P2C

V(S7)

V(S9)

V(S6)

**Code P3 :**

P(S1)

P3A

V(S2)

V(S3)

V(S4)

P(S8)

P(S9)

P3B

V(S8)

V(S9)

**Code P4 :**

P4A

V(S1)

P(S5)

P4B

P(S4)

P(S6)

P4C

**Exercice 3 :**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 |
| FIFO: | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | J1 |  |  |  |  |  |  |  | J3 |  |  |  |  |  |  |  |  |  |  |  | J2 |  |  |  |  |  |  |  |  |  |  |  |  | J5 |  |  |  |  |  |  |  | J4 |  |  |  |  | J6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TMA: | |  | ((1-1)+(9-2)+(21-3)+(34-3)+(42-5)+(47-8))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TME: | |  | ((9-1)+(21-2)+(34-3)+(42-3)+(47-5)+(61-8))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SJF | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | J1 |  |  |  |  |  |  |  | J4 |  |  |  |  | J5 |  |  |  |  |  |  |  | J3 |  |  |  |  |  |  |  |  |  |  |  | J2 |  |  |  |  |  |  |  |  |  |  |  |  | J6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TMA: | |  | ((1-1)+(9-5)+(14-3)+(22-2)+(34-3)+(47-8))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TME: | |  | ((9-1)+(14-5)+(22-3)+(34-2)+(47-3)+(61-8))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| LJF | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | J1 |  |  |  |  |  |  |  | J6 |  |  |  |  |  |  |  |  |  |  |  |  |  | J2 |  |  |  |  |  |  |  |  |  |  |  |  | J3 |  |  |  |  |  |  |  |  |  |  |  | J5 |  |  |  |  |  |  |  | J4 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TMA: | |  | ((1-1)+(9-8)+(23-3)+(36-2)+(48-3)+(56-5))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TME: | |  | ((9-1)+(23-8)+(36-3)+(48-2)+(56-3)+(61-5))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SRTN | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | J1 |  |  |  |  |  |  |  | J4 |  |  |  |  | J5 |  |  |  |  |  |  |  | J3 |  |  |  |  |  |  |  |  |  |  |  | J2 |  |  |  |  |  |  |  |  |  |  |  |  | J6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TMA: | |  | ((1-1)+(9-5)+(14-3)+(22-2)+(34-3)+(47-8))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TME: | |  | ((9-1)+(14-5)+(22-3)+(34-2)+(47-3)+(61-8))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Round Robin Q=2sec | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | J1 |  | J3 |  | J2 |  | J5 |  | J4 |  | J6 |  | J1 |  | J3 |  | J2 |  | J5 |  | J4 |  | J6 |  | J1 |  | J3 |  | J2 |  | J5 |  | J4 | J6 |  | J1 |  | J3 |  | J2 |  | J5 |  | J6 |  | J3 |  | J2 |  | J6 |  | J3 |  | J2 |  | J6 |  | J2 | J6 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TMA: | |  | ((1-1)+(3-2)+(5-3)+(7-3)+(9-5)+(11-8))/6 | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TME: | |  | ((38-1)+(54-2)+(59-3)+(44-3)+(34-5)+(61-8))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Priorité Q=2sec | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | J1 | J3 |  | J5 |  | J3 |  | J5 |  | J3 |  | J5 |  | J3 |  | J5 |  | J3 |  | J3 |  | J6 |  |  |  |  |  |  |  |  |  |  |  |  |  | J1 |  | J2 |  | J1 |  | J2 |  | J1 |  | J2 |  | J1 | J2 |  | J2 |  | J2 |  | J2 | J4 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TMA: | |  | ((1-1)+(2-2)+(4-3)+(23-8)+(38-3)+(56-5))/6 | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TME: | |  | ((49-1)+(22-2)+(18-3)+(36-8)+(56-3)+(61-5))/6 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 |

**Exercice 4 :**

**Q1 :**

**void** fils(**int** i){

**char** buf[255];

**if**(i==1){

close(P1vP2[0]);

close(P2vP3[0]);

close(P2vP3[1]);

**int** file = open("data.txt",O\_RDONLY,0);

read(file,buf,255\***sizeof**(**char**));

action\_1();

write(P1vP2[1],buf,255\***sizeof**(**char**));

close(P1vP2[1]);

}

**if**(i==2){

close(P1vP2[1]);

close(P2vP3[0]);

read(P1vP2[0],buf,255\***sizeof**(**char**));

action\_2();

write(P2vP3[1],buf,255\***sizeof**(**char**));

close(P1vP2[0]);

close(P2vP3[1]);

}

**if**(i==3){

close(P1vP2[0]);

close(P1vP2[1]);

close(P2vP3[1]);

**int** file = open("toto.txt",O\_WRONLY|O\_CREAT,0777);

read(P2vP3[0],buf,255\***sizeof**(**char**));

action\_3();

write(file,buf,255\***sizeof**(**char**));

close(P2vP3[0]);

close(file) ;

}

}

**Q2 :**

int P1vP2[2];

int P2vP3[2];

int main(int argc, char\* argv[]){

pipe(&P1vP2[0]);

pipe(&P2vP3[0]);

for(int i = 1 ; i < 4 ; i++ )

{

if (fork()==0)

{

fils(i);

exit(0);

}

}

wait(NULL);

wait(NULL);

wait(NULL);

close(P1vP2[0]);

close(P1vP2[1]);

close(P2vP3[0]);

close(P2vP3[1]);

exit(0);

}

**Exercice 5 :**

**Q1 :**

int apparait(const char \* fic, char s){

int file=open(fic,O\_RDONLY,0);

char c;

int lu;

while((lu = read(file,&c,sizeof(char)))==sizeof(char))

{

if(c == s)

{

Close(file);

return 1;

}

}

Close(file);

return 0;

}

**Q2 :**

int main(int argc, char \*argv[])

{

DIR \* p = opendir("./");

struct dirent \* DE;

char c;

scanf("%c",&c);

while((DE = readdir(p))!=NULL)

{

if (apparait(DE->d\_name,c)==1)

{

printf(“%s\n”,DE->d\_name);

}

}

closedir(p);

exit(0);

}

**Q3 :**

void ChercheRep(char \*pathname, char c)

{

DIR \*dirp;

struct dirent \*dp;

struct stat s;

chdir(pathname);

printf(" \*\*\*\* Repertoire %s \n", pathname);

dirp = opendir(".");

while( (dp = readdir(dirp)) != NULL)

{

if (apparait(dp->d\_name,c)==1)

{

printf("%s\n", dp->d\_name);

}

}

rewinddir(dirp);

while( (dp = readdir(dirp)) != NULL)

{

stat(dp->d\_name, &s);

if((strcmp(dp->d\_name, ".") != 0) && (strcmp(dp->d\_name, "..") != 0) && (S\_ISDIR(s.st\_mode)))

{

ChercheRep(dp->d\_name,c);

chdir("..");

}

}

closedir(dirp);

}

int main(int argc, char \*argv[]) {

char c;

scanf("%c",&c)

ChercheRep(".", c);

exit(0);

}