```
Weet 6 ! Oslab
                       Fastice
1 Datindude coldto. h.)
   # Enclude establish >
   # include a math. h.
  world sort City p[], int digint bigint p([), int n);
        int temp;
        for (int lea; izn; i++) {
                 for (int j=0; j <n; j++ ) {
                      3((ci) p > (i)p) Hi
                          temp = d(j);
                         d[] = d[i);
                          d[i] = temp;
                          temp = pt (i);
                          ptlig= ptli];
                          pt[i] = temp;
                         temp = b(i);
                          b(j) = b(i);
                           bff = temp;
                           temp= P(i);
                           : (1)q = (1)q
                            P(j) = temp
```

```
int ged Cint a int by ?
    int mi
    while (6 >0) {
            = a 1.b;
 a=6;
b=8;
     return a;
int (cmul(int P(), int n) {
  int lem = p(o);
 tor(int i = 1; i < n; i++){
            1cm = (cm p(i) (gcd (cm,p(i));
     return lem;
void main () d
   int n;
   print+( of enter the no. 3 projections");
    scanf("1.d", 4n);
    int plat, b(n), pt(n), d(n), rem(n);
    printf (a futu the CPV built time");
   tor (int i=0; izn ; itt) scanf (".1.d", +6(i));
    printf("Enter the deadline");
    for (int i =0; i <n; itt) scant (0.100, 4d(i));
    printf( u fully the time period in");
                         · + ( u.loda, 4pt (i));
```

```
for (int 1=0; ien; itt) prid=itt;
          sort (p, d, b, pt, n);
          int 1 = Lomal (pt, n);
          printt('in Earlier Deadline Schuduling In")
         printf(" PIDIT Brust It Deadline It Private.
        for (int izo; 12n; itt)
               printf (" whit thit it it it it it it
                      , pci), bci), dci), pti)
   print ("scheduling occurs for hed me In",)
       int time = 0, next D[n];
      for (int i=0; i <n; i++){
            nextoli) = dli);
            nem(i) = b(i);
      growing of on we study of the
     while (time <1) {
         for Cint i 20; icn; 1++ 22
     i+C+ime 20 pt (i)==0 44
                    time 1=0)&
      next D(i)=time +d(i);
           g remai) = b(i);
int minD=C+2, tarkTofxcute=-2;
```

```
for Cint i =0; ich ; itt) {
                3(drim > Ci) Ct xon AA Ox Ci) man )ti
                     min p = next ocij;
                     tart TO Excell = 1;
         2
         it (tark TO Exciste 1=-1) {
                  printf(".hdms: Tack .hd is running 15
つり
                           +, p(tarkToExcute]);
                   tem (tastTo Fxcite) -;
                 print+ (". Id me: CPU is idle in", time);
           time ++ ;
        3
           no. 9 procesor:3
     Enta
     Enter CPU buiet time;
      3
     Futu diadling:
      7
      4
     Enter time puised
     20
```

X / C /	11111	celuderologs	
Exactical	madline	peadlin Pe	period
PLD	But	4"	5
2	2	1 a 1 s 1 to h	20
16	3	8	10
3	2		
01.4.000	Oceurs	20 mg	201

oms: Tart 2 running

2 ms: Fart 1 running

5 ms: Tast 3 running

7ms: Tast 2 running

9 : cpu is idle

10ms: Tart 2 running.

12 ms: Fauf 3 tunning

18ms : idla

15 ms ; Tast > running.

17 : CPU idle

Polis appartoure students Pate monotonic scheduling:

attnowed estations # include andlibins # include < math. h >

void map (int a, int * b) & Int temp = a; *a = *b; #b=temp; 3

```
word sort Out pl), int bl), int ptl), int ptl), int ptl)
        int temp = 0;
        for Ciut & =0; i 4n; i++){
              for Cint jeijjenijtt) {
                    it CP+GI) <P+CI)
          swap (4 pt (i), 4 pt (j));
                   quap (4 b[i], 4 b(i));
                   swap apri), + p(T));
            (CA)44, "61") From
int ged (int a , int b) {
                   rain utility of faire
     int r;
    while (b) { (b) o
         r = a 1.b;
         a 26; FM ( 113/ 0= 1 1/10/10)
         6=r; 111500g
   return 9;
 ternul Cint pc], int n)
  int (cm = p(0);
for ant i=01; icn; ita)
      1cm = (cm = p(i)) 1 ged (cm p(i));
```

```
void main Of
    printf("File no. 3 procunor");
    scant(").d +. 4n);
   int p(n), b(n), p+(n), rem(n);
   point ("futu the CPV but timely)
    for Cint izo; izn; i+t)
         scant ("1.d", 46(i));
         rum(i) = b (i)
   print (4 futu time puiod 9 nm);
  for Cint izo; icn; itt)
          scanf (1.1.d", 4p+(1));
  tor Cint i =0; icn; itt)
         pli) zi+1;
Sort (p, b, pt, n);
int (= (cm ul (pt, n))
 printf ("Lom= 1) (1);
printf(" Pate monotonic studeling In");
printf(" DED IN But It Period In");
for (int iso; 12n; i++)
         printf Co. Latt. 1-d It - Idly
                      PCi), bCi) ptco);
```

401 C.W. 1:011 double this = 10 (Mistary) print ("INH 1=1/4/h, sun, th) Councerto) Suffer in tolle) 14 (rum > rh!) printf(" scheduling occurs for 1.dmg/n1,1); int timezon preven; 1 20; adrile (time <1)2 for Cint : =0; icn; i++){ int f =0; 10 10 10 it Ctine . Let pt (i) 220) rom (i)= b(i)i it (rem(i) >0) { it (prus] = p(i) printf (4. Adms onwends procen 1-d runnly In + , time CiJd = And emma for Comma runci) -- ; f=7; beat;

```
14 (it)[
       i+(x!=1)
            print+ (" . ndme on wards:
                     cpu-is idlem", tim).
     time ++ j
             100 7 5 0 10 20 10 20 61 40
Output:
Enter no. of processor; 2
Futu the CPU built fine;
 90
      (acc (1) fr #1. 3/14) +
25
Futly time puids:
10
1Cm 2 100
Rate monotonic shedeling:
       But pulled
0.65000 c=0.828427 => true
Schuduling Daws for 100 mg
oms onwards: procesor 1 running
some onwards: procuror 2 running
 soms onwards; processor & running
```

10 propo

Hinch

ind

int

```
some and
O proportional scheduling
sinclude = Adlib. h>
 # include ztime.h>
 int main () {
     grand (time (AULL));
     int n;
      printif( "Futu no. 3 procuor");
      scant (".1.d", 4n);
      Int p[n], t(n), cumin ], m(n);
      int c=0; int total=0, count=0;
      printf (" fith teleti q process " );
     for (int i=0 ; icn; itt){
             scant ("1d", 4+(i));
             c+=+(i)i
             cum lideci
              pCi) = i+1;
              m(i) = 0;
              fotal +=+(i);
   while (count <n)
         int wot = rand (). It total;
         for Cint (20; 1cn; Ht)
```

printf Cuthe winning numbury old and winning participa (Coq, to, "m bol. 21 m(i)=1) count = 1; printf ("In Probabilities! (h"); for (int i=0; icn; 14+) prints (uThe probability of P.1.d winning: 1.2+ 1/2 (n 4, p(i), (Colomble)+(i) |+otel = 100)); 3000 10 10 1000 PARIS Output ! Fixtu no. 9 proceessors :3 Futu tickets of the processes; The withinking porobability of-Probabilition The probability of pl winning: 16.67 The probability of pr winning: 33.33 The probability of P3 winning: \$000.

```
problem wing complione simulate producer consum
& include estate. h)
int metex = 2, h = 0, empty = 63, x = 0;
int main ()
    void produces ();
    void consumer ();
    int wait (int);
     int organal (Int);
     print ("In produce (n 2 concum (3 exit");
     while (1)
        print + ("Futu your choice: (");
        scart (" /d ", 4 n);
        switch(h)
          case 1: i+ (Cmuter == 1) (4 (empty!=0))
               producer (1)
                pois prints (" Enfor is que");
           care 2: if (mutex ==1) 44 (h!=0))
                    consumer
                        print+ (a Buffer is empty");
                    breat;
          can 3: exit(o);
                    brust ;
       notuen o;
```

10

```
int want (in s)
           return (-5);
    ind again ( and 5) &
         return (4+5);
  void producu() (
        mutex = wait (mutex);
         h = cranal (n);
        empty = wait (empty);
        printf ("produce produce the item 101,2);
         muter = rignal (muter);
 void confumer (){
      muter = wou't (muter);
        h = wait (h);
       print (" consum consum item .1.d", x);
      muter= signal (mutex);
types:
O producer 2 contunu 3 exit.
Enter your chorce: 1
produces produce item 7.
Futer your choice 1
produces produce item 2.
Enter your choice: 1
produces produce item 3
Buffer is full
Enter your choice: 1
consum consum Hem 3
```

```
continue continue 2 fear 2
fatu you choise : 2
consum choice item 2
puffer is emply
6 write a C program to simulate the concept
 a doning-philosophers problem
 Hincolude < stdio. h.
 # include estalib. h>
 # include < pthreads>
 # include < anistant
 # include < semaphore. Ls
  # define NUM-PHIL 3
  sem-t forts [NUM-PHEL)
   pthread-t p(NUM-PHIL);
   void * philosophus (void oarg) &
         ( pro ("tut) = b; wi
         int left-fort : id;
         int right-fork = (id+1).1. Num-PHEL;
       white (1) f
            prints ("philosophe -lid is thinking In",
                     ia);
             sleep (rand () 1.3 +1);
```

print+ ("philosopher +)-d is hunger and

trying to pick forts In",