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Multi-Dimensional Array in Clanguege
    Assignment 16
  1 write a program to calculate the sum of two matrices each of order 3x3.
         #include (Stdio.h)
          void input ( Cint(3 (n), int);
         void input 2 (int(3[n], int);
void input 3 (int(3[n], int()[n], int()[n], int);
          int m=3;
          int main()
            int a (n) [n], b(n) (n), c(n) [n];
            input 1 (a,n);
            imput 2 (bin);
            output (a, b, c,n);
            returno;
         void input ((int a ()[n], int n)
             Printf ("enter 9 number for 1'st matria - \n");
             for (1=0; ixn; i++)
               for (j=0) scn; j++)
                 Scorf ("xd", 49(i)(j));
           vaid autput (int aco(n), intb[](n), intc()(n), int n)
            Prints ("Sum of two matrixes is = \n");
             int i.i.
            for (i = oiikn; ita)
           (for (j=0) j < n; j++)
               ccis(i) = a (i)(i) + b (()(i));
               Printf ("x5d", Cli)(i));
        print("\n");
Durite a program to calculate the product of two matrices each of order 3x3.
    #include(stdio.h)
      int n=3!
     void input ( cint ( ) (m], int);
     void input 2 (int[)[n), int);
     void input & (in+()(n), in+()(n), in+()(n), in+);
     inf main ()
        int a (n) (n), b(n) (n), c(n)(n);
        input ((a, n);
        input 2 (b, n);
         input 8 (a, b, c, n);
       retimo;
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vaid input 1 (inta ()(n), int n)
        int by
        Printf ("Inter 9 number for 1st matrix - \n");
        for (i=0; i<n; i++)
          for (j=0; jen; j++)
           Sonf ("xd", &acisciss);
       7.
    Void input 2 (Int b () (n) , int n)
       intili;
       Brints ("Goter 9 numbers for 2" nd matria - m");
       For (i=0; icn; i++)
         for (j=0; jen; j++)
          Sconf ("xd", 4b(i)(i));
    vaid output (intaco (n), int b () (n), int () (n), int ()
       inti, j, sum;
       Printf (" Product of two matrices is = \n");
       For (i=0 jacn; it+)
         for(j=0) jen/j+4)
         Sum =0!
         (Ci) (cj) = sum)
   Prints ("\m");
         Printf ("xd", C(i)(1));
write a program in c to find the transpose of a given metrix.
  #indude(stdioth)
   Int main ()
   1 int 1,3, 9, 6;
    Printf ("Enter the number of row and Coulmn - \n");
    Scarf ("xd xd", 2a, (6));
     int our (a) (b), transpose (b) (a)
    for (i=0; i(a; i++)
       Printf ("Enter >d elements for >id row- (n", b, i+1);
       For (3=0) j(b) j++)
         Scarf (" rd", & aur (i)[1]);
      Printf("metrix is= In")
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Prints (">: 3d", aun (1)[i]);
               transpose (j) (i) = asm ci)(i);
          3
            Prints ("After Transport this metric is = m");
            Por(1=0/3(b) ++)
              For (3=0; 3<9; 1++)
                 enints ("x 4d", trampose (i3(i));
( write a program in C to find the Sum of right diagonals of matrix.
      # include ( Staro. h)
        int main ()
       inta, bilij
          Printf(" In finter a square matrix In");
          Printf ("Number of ROWS=");
          Branf (" " d", & a);
          Printf ("Number of column = ");
          Sconf ("xd", &b):
          if (a = = b)
              int arr (a) (b);
              for (1=0; ica; 1++)
               prints ("fater >d Number for >d Row m", b, i+1);
               for (=0) 1 (b) 1/4)
              sconf("//d", & avn (i)(i));
            Prints ("martrix is = \");
for (i=0; i<9; i++)
              forli=oij(b;j++)
                 Printf("24d", am(i)(i));
             printf(" 1");
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int Sum = 0%
            Printf ("sund Right Diagonals is = ");
           for (1=0; i(a), 1++)
             for (1=0, 16b; 1++)
                if (1==a=1-1)
           else
             Printf(" Not possible of it's diagonals sm");
1 write a program in c to prod the sum of left diag analy of a matrix.
        #include(stdio.h)
        int main()
          intab, i, j;
         Printf ("In Enter a Spoone matrix m");
          Printf ("Number of Row = ");
          Sconf ("xd", 49);
          Prints (" Humber of Coulmn = ")
          Sconf (" " d", 46);
          if (a = = b)
         2
              int am (a) (b)
              For (1=0; i(a; 1++)
               Printf ("Enter /d Number for /d Row )n", b, i+1);
               for (1=0; skb; g'++)
                  Sconf ("yd", Lava (i) (i));
             Printf ("matrix is = 1");
             For (1=0) (9; (++)
              for (1=0/1xb/1++)
               Prints (" "4) ", ava (i) (i));
             Prints ("In");
            int sum =0;
            Printf ("Sum of Left dig anals is =");
           for (1=0 ) 1 < 0; (++)
           f For (3=0) skb; st+)
             ( if ( i== i)
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Sum = Sum + avor (i)(j);
        else
            Printl("Now Possible of it's diagonals Sum");
         returno;
@ write a program in c to find the sum of rows and columns of a matrix,
          #tinclude (stdioth)
           int main()
           (intabilis)
             Printf("Inter a shoure matrix ("));
             Prints ("Number of Rows =");
scont (" xd", fa);
              Print("Number of Calumn = ");
              Scanf (">d" (4b);
              if (a = = b)
                 int our (a) [b];
                For (1=0; ica; 14+)
                     Printf ("Exter 2d number for ROW NO: Zd-In", b, i+);
                     Par(1=0)366; 3++)
                       Sconf ("xd", fam (i)(j));
                    Printf ("matrix is = \n");
                   Printf ("* * * * * * * * * * * * * * * * * * ");
for (i=0; i(a; i+4)
                      for( i=0; icb ; i++)
                           Prints (" >4'd ", and (i) (i));
                        Pointf ("In");
                       Printf ("* * * * * * * * * * * * * * \n11) 1
                       int sum;
                       for(i=0;i(a;i++)
                       1 sm=0;
                         Sum (3=0) j(b; 3++)
                           Sum ± Sum + arr (i) (i);
                        prints ("Sum of Row No: "d= = = = 2d (n", i+1,8 m);
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ints .
           for (1=0, 120; 1+4)
             5=0;
             for ( = 0; j < b ; j + 1)
               S= S+ ann (3) (1):
            Prints ("sum of column No; xd = = = = xd)n", i+1,5);
             frints ("Please enter a square matrix");
(3) write a program in c to print or display the lower triangular of given motive
     stindedecitho. 1)
      int main()
         in+ a,b,1,1)
        Printf ("Enter a square matrix ("");
         Printf (" Number of ROWS = ");
         scanf ("xd", &a);
        Printf ("Number of Callmn = 11);
        Scanf (" /d", 46);
        int aur (9) (6);
        if(a==b)
           for(1=0; ixa; 1++)
            Printf ("Enter xd number for Row No: xd - \n", b, H);
             For (3=0; 3 < b; st+)
               Seenf (" /d", & arr Ci ) (i));
          Prints ("metrix in = \n");
           For (1=0; (ca; i++)
              for (1=0;1(b; j++)
               printf (">4d", ava (i)(i));
              Printf("\n");
             Printf (" # * * * * * * * * * * * * * * * |n");
              Bintfl' Lower Triangular matrix in - 12");
              for (1=0; 1<0; 1++1
                int x= 0;
                Far(1=0) 1(b) j++)
```

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if (37 i)
            { print ["x3d", N);
               Prints (" >3d", ava (1)(1));
          printf ("\n");
          Printf ("Please enter a square metrix (Eg-2+2,3+3,4+4)");
          return 0;
write a program in c to print or display an upper triangular matrix.
       #include < stdio.h>
       int main ()
           Printf("Goter a square matrix \n");
           Printf ("Numbers of Rows = ");
Sconf (" xd", fa);
            Printf("Number of Coulmn = 11);
            Scanf (">d",4b);
            int arr(a)(b);
            if (a==b)
            4
               for (i=0; i<a; i++)
                  Printf("forter % d Number for Row No: 1/d - \n", b, (+1);
for (j=0;j<b; j++)
                    Sconf("Xd", Ram Ci)(s));
               Print ("matn' is = \n");
               Printf ("+ * * + + * * * * * * * * (n');
               for (i=0; i(a; i+4)
                  Par (1=0) 1 (b) 1++)
                    Printf (" >, 41", ava (i) (i));
                  Printf("\n");
              prints ("upper Triangular matrix is -)n");
              for (1=0; i<0; i++)
                 int x= 0;
for(1=0;1<b;1++)
                   ix (5'< 1)
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( Printf ("12"))
          printf (" please enter a square matrix (Ej: 2×2,3×3)");
       return 0;
unite a program in C to accept a metrix and determine whether it is
   sparse motrix.
  #include < stato.h)
   intmain ()
     intabilis;
     Printf ("Guter a matrix (n"))
     Printf ("Number of Rows = 11);
     Sconf (" // d", &a);
     Printf ("Number of coulmn - 11)
     Scant (" /d", 46);
      int an [a) (b);
      for (1=0; 1'<a; 1++)
          Printf ("Goter xd number for Row No: xd-12", bi 141);
          for (3=0; jcb; j++)
            Scanf ("xd", favor (i)(i));
          Printf ("matrix is = \n");
         Printf ("* * * * * * * * * * * * * * * * * " ");
          for (1=0; ica; i++)
            For (1=0;3(b; 3++)
               Printf("x4d", ara(1) (31);
             Printf (" \n");
          int x = 0;
           for (1=0; (2a; 144)
            For (1=0; 1 < b; 1++)
               if (an(i)(i) == 0)
               x++ /
           if (x7(a*b)/2)
            Printf ("spouse matrix \n");
              printf ("Not a sparse matix |n")
          y returno;
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program in C to find the now with maximum number of 15.
It include (Hdish)
II in do ded stolib. W
int main()
   intabilis?
  Prints ("Enter no of row and column (");
   Printf ("Enter number in binary form');
  Prints ("Numbers of Focus = ");
   Sont (">d"/fa);
   Prints ("Number of coulmn =");
   Scanf (N. /d", & b);
   int aur (a) (b);
    For (1=0; 1(a; 1++)
        printf ("Enter y. d Number for Row No: >d-1", b, i+1);
        For (5=0,166, 3+4)
          senf (" > d", for (1) (5);
      Printf("+* * * * * * * * * * * * * / ");
      prints ("matrix is = \n");
      For (1=0; 1(a; 1++)
          For (j=0; j<b; j+4)
      1
             printh ("xyd", aur (i) (i));
       Prints ("* *+ x + x + x + x + x + x (n");
      int y=0,72;
for (1=0,129,144)
         int x = 0;
         Ray (3=0) 1(6) 1++1
           if (an [1] (3) = = 4)
             X++!
        Y
if (x>y)
            yzo;
            7=0%
            2=x;
            72141)
        print f ("The index of row with maximum 1 s is: xd", z);
       return o;
```