```
assignment (DSA)
                                                AP19110010111
                                                   Chandu Ch
                                                    CSE-G
I include estatio. hy
       bi nary - Sear ch ():
        arso], n, item, loe, beg, mid, end, i;
   void maint,
      point + ("In Enter the size of an array");
      Scaut (" ", d", &n);
      print of in Enter elements of an array in sorted form: \n),
      Aor (1:0; 12n; 194)
          Scant (" 1. d", &a [17);
       Drint 1 "In Enter MEM to be searched:");
        Scand ("%.d", ditem);
        binaay - Search ();
         getch ();
         voice binary-search 1);
           beg = 0
            wid = ( locg +end) /2:
           while (1 beg 1 = end) && (a Emid ]! = item))
        . {
            if (item coremid )
             end = mid -1;
           else
              beg 2 mid +1
             mid = ( beg tend)/2
```

(a)

void

3

```
(a [mi d] == îtem)
            print (" In In ITEM dound at location % d ", mid 11);
            print f ("In In ITFM doesn't creit");
         else
     # include & stolio. hr
(b)
           int aux [10];
           int sum, product, i;
           print & (" |n enter clements: \n");
           Apr (120;1210;14+)
           print # (" Enter cur [ 7. d ]: ",i);
              scent ( " %, d ", & au [i]);
            Jum = 0;
             product =1; (1 dans) dans
             dor (1:0,120; 1++)
             Sum = Sum + our [i];
             product = product & ou ci ];
   (Compries ( toward) 350 bus a pool )
             print 4 (" ) u Sum of array is : " d", sum);
             Print & (" In Product of away is: %d,"uproduct");
           Return 0;
                with a thoughtened for
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# i'melde est di o. h.
D.
     # include 28tdio. h)
      11 Meigis two subaways of aux []
      11 First subaday is all [1... m]
      il second subarray is au [motion 2].
      void muge (ent our s, ent 1, ent m, int 2)
       ع
         int i, j, K;
         int ni = mol+1;
         jut 112 2 Y - m;
         int LINIJ, RIN2];
          for (120; 12 us; 14+)
           [in] reas [ini]
           for (1 20; 12 n 2; j+ +)
            R[i] = ass [m+1+1];
         i=0; (initial index of 18+ subassary)
           5 = 0: ( initial inden of und subaccary)
          1 = 1; ( initial index of merge subarray)
        while (i and ad jenz)
           it (211] <= RE17)
           1
              aule 3 2 [ [i];
        - 1 x 1 4 4 5
               one [K] = REJJ;
              K ササ;
```

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while (jzn2)
    arcki = RCi7;
    1 + + 1
    K++ ;
  void megesort (int age [#], int l, int 2)
   2
     (8>6) 4;
        int m= 1+(x-1)/21
        merge sout (aux, 1, m);
        meige sort (au, m+1,2);
         merge (ase, 1, m, 8);
        3
       3
             print away (int A 1), intsi'se)
         inti;
          dor (1:0; 125ige; 144)
           prints ("1.0", Mci]);
           print 4 ("|u");
           Int auf [] = {12,11,18,5,6,7};
           int au si'se = si's e opteners / si's e offancos);
           printa ("Given aeray is \m'1);
           print Array (au, 0, au - sise -1);
          Print ("Insorted away is hu");
          print any ( our, are size);
         setueno;
```

```
3. Selection Sort:
      # include LStdio. h>
        void swap lint ta, intt b)
           int temp = * a!
           A C1 2 * 6
            at lo + temp
           void selection sout lint acrony (7, int sise)
               tor (int Step=0; stepesise-1; step++)
            {
               int (min-ide = step;
               dor ciuti= (tepal; j'esise', land)
                 it (accorption & accompliment id x ))
                   min_idx = 1;
                    sump (& areay [min-ian], d array[step]);
                  3
                 void printarray (int array [], int si & ()
                    tor (int i = 0; i & sige; ++1) {
                     print + (" 1. d", are ay (i));
                     3
                      Prints (" \");
                     3
                     1.
```

i'nt maines Put data (7 = {20, 12, 10, 15, 29; int size = size of (dontal / size (dontalo]); Selectionson (data, size) prints (" sorted array en acsending ordu: su"); Printarray (datasise); I not got ! Institute to the got this is: ing busine iola estas: don' Dois of I togal - italians (1 rest miner from a first section of ile vbi _ bin Ediny was S. Exist- Ward (See Sty French is sign out the property to it was thing the low Startes with a so so to the distant illithesea, the orthograph en and the interest P(0)(0)SHOT ON POCO F1

that and the

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3. # include emothilis.

Void include 2 station;
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void inaction sout (int agg [ ], int 4)
  int i, key, j;
   for (is); izu; i++)
      key = enli];
      j 2 1-1
       galhile (j?=028 ass [i]>key)
       are [i+1] = erer [i];
       j 2 j-1
       aur [i++]. key,
      1
       int in
        ADY (12 D; 124; 194)
           Printa ("y, d", ase [i]);
          print 1 (", u");
         int maines
           int aucs = {12,11,13,5,6);
           int n = size off (au)/size of aucos);
           insutionset ( mea, u);
           printAssay (ass, u);
            Litur 0;
```

```
# include Letatio. h>
4.11)
         # include smath.hr
          int main ()
             int ass = {16,19,11,15,10, 12,143;
           ٤
                              X + 1 ( 100 + ) :
             inti,i;
              tor (j 20; j 2 7; j+1)
               Ž
                 int swapped 20;
                 المالة المالة
                 while (ic #-1)
                        (ali1> a li+11)
                     int tempeali];
                     acij = aci+ 17;
                     a [ i+1] = temp;
                     swapped 21; methodis
                     144 ;
                    is (! swapped)
                   bride;
                     tor (1:00, 12 # ; 144)
                        prive + ("">, d ("), ali ]);
                        setueno;
OT ON POCO F1
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```
bubble- sort ( wet.
                                   with a hour in
filis # include 2 stobio. hs
     # include & donio. W
          int num, evensum = 0, odd prod = 1, Ren, temp;
            print of 1" Enter any number: ");
             scart ("7.d", & min);
             while turnso) that to you
                Run 2 mum %. 10;
                it (sem 9, 0 = = 8)
                  even sum 2 evensum + rem;
               else
                 odd Prod = oddprod * sem;
              min > min /10;
         print & (" ) in sun of Even dige t = % el "; evenum);
              print+1" \n. product of odd oligit = ".d", odd pred);
     (38 2 20) , "Acteches ; week 2014 6 100
               returno;
             : () 45 who , " ( + + ") NEwtry
                       Commence that
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POCO SHOT ON POCO F1

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of (ill) #inchale 2 stdio. h>
         void swap ( int * xp, int * yp)
            int temp = * XP;
            * xp = * yp;
              * up = temp;
              i'nt i, j;
               for (i: 0; izwal; ina)
                 dor (j=0; j 2 m-i-1; i++)
                      ( CI Hizran & [iz esa)
              swap (& ass [j], & ase [j + 13):
                   void print Aceay ( out ase [], int sise)
                   {
                     int is
                      for (120; 125130 4144)
                          printa ("1.d", all [i]);
                        Print 1 (" \");
                       jut maine,
                         int au 17 : {64,84, 25,12,22,11,90);
                      int u: siscott (our) / siscot (ouros);
                      bubble sout (ass, us;
                      Prints (" soated array: \n");
                       Print Annyl one, us;
                       setum o;
```

```
5. # include & stdio. h>
      void binary - search (int lo, int, int);
       void bubble- sort (int(7, int);
        int mainly
        1
           int key, sisc, i;
           int list DSJ;
             print+(" Enter size of a list");
             Scant (" T.d ", & si'& c);
              Prints ("Enter elements (n");
               Aor (izo; icsige, i++)
                 scart ("Yed", & list [1])
               bubble_ sout (dist, si & e);
               prints (" \n");
               prints ( " Entu key to scatch \n");
                Scant (" y.d", 1c ey );
                binary-seach ( list, o, size key );
             void bubble- search (lift, o, size, key);
            ¿ (102) : - bissi, al.,
               int temp, i, j,
            dor (1'20; i2151' ge; i4.4)
              ¿ dor Lizi; j'zsise; j+ +)
                   i + ( lis + [:] > lis + (i) )
                      temp = list [i]; aq
```

```
[i] + il = [i] + ii
     . List (j) = temp;
    3
3
      binary- search (int list [], int lo, int. hi, int leny)
  Void
  int maid;
     17 (10 > W)
       print + (" 10 cy not sound \");
        acturn;
     mid: (lo + mi) /2; who was
      it (list cmid] == 10 er) + i
         prints (" key sound m");
        else it (dist [ mid] > key )
         binary_ Scarch (list, lo, mid-1, key);
       {
        cheit ( list (mid J < key)
        1
          binary-search (list, mid +1, hi, key),
```