## IMPAN HAMED

1D: IT- 22010

(1) find tith smallest element in an arraylist.

import java. util. ArrayList;

import Java. util. Collection;

import Java. util. Scanner.

public class Kta Element of

public static int KtqSmallest (Array List (Integer) Array,

if (x <0 11 x > Array, Size ()) of

-throw new Illegal Argument Exception ("Invalid value of x");

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Consistion , sost (Array);

return Array, get (x-1).

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public static roid main (string E) angs) p

Scanner sc= new Scanner (System.in).

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Systa

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5.

```
ArrayList (Integer) Array = new ArrayList (>0)
System.out. println (" Enter number of elements").
int m = sc. next Int ().
System.out. println (" Enter" + n + "elements"),
for (int i=0; i(n; i+e) f
Array, add (sc. nextInt ()).
System. out. println ("Enter xth element to be seanched"),
                    mal ( Expert Taylor ) and = ulm
int x = sc. nextInt ():
try of
 int Kthsmallast = KthSmallest (Array, n);
 System.out. println ("The"+ + + + the element is "+ ktysmallest).
        mr. pud (and (i) , orp. get (and (i)) + 1);
  catch ( Silegal Argument Exception e)
   System. out. print ( e. jet Message ()).
```

```
(2) A tour Map to store the mappings of words to their
      frequencies given text.
     Code ! .
     impart jara, util. Mag:
                           to + " my hard ") reltaing . From
     import jara, util. Scamer;
     Import java, util. TreeMaq;
    public class Frequends of
    Static void count frez (string str) s
     Maj (String, Integer) mp = new Tree Map (70);
     String ann [] = str. split (" ");
     for (int i = 0; si carry, le right; i++) }
If (mp. contain Key (arm [.]))
      my, put (ann [i], mp. get (ann [i]) +1),
                     Cotch ( Illegal Argument Exception e
    else
      mp. put (atth [i], 1):
```

```
for (Map, Entry & String, Integer > entry; mp. entry Set ())
 System. out. println (entry, setKey() + "-" + entry, getValue()),
public static void main (String [] angs) }
          sc = new Scanner (Systemin).
  string str = s.c. nextline ();
                 = FRANKOS KERTER STATES AND AND THE
   count - freq (str):
              (comestope) commen (systemin).
      Sydem oid point ("Exter overles of students").
```

(3) A treeMap to store the mapping of students 20s to topin details. Codes import fava, util. Map; import java, util. Scanver; import -java. util. Tree Map 1000) miene biou situation public class map IDNamed public static void main (string IJ augs) & Tree Map (Integer, String) student Map = new Tree Map <70; Scanner sc = new Scanner (Systemin); System. out. print ("Enter number of students"), Int n = sc. next ( ). sc. next line (). for (int 1=0; i(n; i++) f System. out. print ("Enter student 10"); int id = sc. nextInt ().

Sc. nard Link ().

System. out. print ("Enter student details"); String details = sc. next Line 1). student Map, put (id, letails). 2 shout 20015 System.out. println ("\n -- . Student Details (sorted by ID) -- ") for (Map. Entry (Integer, String) entry: student Map. entry Set () System, out, print ("ID:"+ entry. zet Key ()+" -> Defils:" + entry. get value ()). (Sheet about the landical (made head ) 1906 a head 2) 2 (11 me = 1 short of Hors = 1 thouse) a rides ( data . I head a I state ! thead? , data) 7: petron false; had I beed I hart. head & - head 2 , rist . (Run - - Cland do 11 se = + though) rates.

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(4) A program to check if two Linhed Lists are equal.
                         . On I have . 12 - 21 whole
  Code:
  Class Node &
  int data;
  Node next:
 -this data = data.
   this next = nall;
 septement ("ID: " + Oran has get her ("ID: " ) tring . two coresterns
Class Identical Linhedlist &
 Static boolean are Identical (Node head 4, Node head 2)
 while (head4] = null 46 head2] = null) f
  if (head 1 adata 1 = head 2. data)
   Return false,
  head 1 = head 1. next.
 head 2 = head 2. next.
  netun (head 1 == null +6 head 2 == null).
9
```

```
public static wold main (Strig [] angs)
Node Pread 1 = New Node (3).
head 1 . next = NRW Node (2).
lead 1. next. next = new Node (1);
Node head 2 = now Node (1).
head 2. naxt = new Node (2), partique de
head 2. next. next = new Node (3).
if (are Identical head 1, head 2) = z true)
  System. out. println ("Equal");
  2152
   System, out. print ("Not equal).
9
4
```

Ds to their depl.

Codes

import java, util. HashMap;

in port java, intil Map;

import fara, adil. Scanner; (1) short capite I hash

public class hash Map Id Dept 3 3 2 hours case - from

public static reoid main (string [7 args) }

HashMap (Integer, String) employeeMap = new HashMap <> ().

Seanner se = new Scanner (systemin).

System, out. println ("Enter number of employers"),

int n = sc. mextInt (): harry has maken

scinext Link ():

for (int 1 = 0; i(n; i+1) f

System, out. println ("Enten employee ID (integer): ");

int id = sc, nextInt ().

sc, next link ();

```
for (int iso; icn; irr);
 System. out. print In ("Enter dept: ");
 String dept = sc. next Line ();
 employee Map. put (id, dept).
System. out. println ("Employee Details"),
for (Map. Entry < Integer, String > entry: employeeMap. entry set())
  2
 System. out. println ("Employee DD:" + entry, get key()+ ")
                    Department: " + entry, getValue());
   4
```