Logo

Description automatically generated

**Faculty of Engineering I-CHEP**

**Ain Shams University**

**Submission Date:**

1-5-2022

**Submitted By:**

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Q1:

Check even and odd numbers

Finding minimum and maximum number in array

public class solution {

public boolean odd = false;

boolean even\_odd(int n){

boolean ans = false;

if(n%2 == 0){

ans = true;

} else {

ans = false;

}

if(odd) ans = !ans; //return true if odd attribute is true and n odd

return ans;

}

int [] max\_min(int [] arr, int size){ //return min, max in array

int [] arr2 = new int[2];

arr2[0] = Integer.MIN\_VALUE;

arr2[1] = Integer.MAX\_VALUE;

for(int i = 0; i < size; i++){

if(arr[i] > arr2[0]){

arr2[0] = arr[i];

}

if(arr[i] < arr2[1]) {

arr2[1] = arr[i];

}

}

return arr2;

}

}

Source Code:

Q3:

Q2:

Edge Coverage

Tc1(“aabad”, <display, 1-1-2000, 0:0>)

Tc2(“cdcbababababaa”, <display, 2-2,-2001, 1:1>)

ADUP Testing

Result <state, day-month-year, h:m>

Tc1(“cbbabbabbabbabba”, <display, 3-3-2002, 2:2>)

Tc2(“cbababababaa”,<display, 2-2-2001, 1:1>)

Source Code:

public class watch {

private String state= "NORMAL";

private String state1 = "TIME";

int m=0,h=0, D=1,M=1, Y=2000;

public void change\_state(String input) {

for (int i = 0; i < input.length(); i++) {

System.out.print(state + " ");

System.out.print(state1+" ");

System.out.println(input.charAt(i));

switch (state) {

case "NORMAL":

if (input.charAt(i) == 'c') {

state = "UPDATE";

state1 = "MIN";

} else if (input.charAt(i) == 'b') {

state = "ALARM";

state1 = "ALARM";

} else if (input.charAt(i) == 'a') {

if (state1 == "TIME") {

state1 = "DATE";

} else {

state1 = "TIME";

}

}

break;

case "UPDATE":

if(input.charAt(i) == 'd'){

state = "NORMAL";

state1 = "TIME";

} else if(input.charAt(i) == 'a' && state1 == "MIN") {

state1 = "HOUR";

} else if(input.charAt(i) == 'b' && state1 == "MIN") {

m+=1;

if(m%60 == 0) {

h++;

m = 0;

}

}else if(input.charAt(i) == 'a' && state1 == "HOUR") {

state1 = "DAY";

} else if(input.charAt(i) == 'b' && state1 == "HOUR") {

h+=1;

if(h%24 == 0) {

D++;

h = 0;

}

} else if(input.charAt(i) == 'a' && state1 == "DAY") {

state1 = "MONTH";

}else if(input.charAt(i) == 'b' && state1 == "DAY") {

D+=1;

if(D%31 == 0) {

M++;

D++;

}

D = D%31;

} else if(input.charAt(i) == 'a' && state1 == "MONTH") {

state1 = "YEAR";

}else if(input.charAt(i) == 'b' && state1 == "MONTH") {

M+=1;

if(M%13 == 0){

Y++;

M++;

}

M = M%13;

} else if(input.charAt(i) == 'a' && state1 == "YEAR"){

state1 = "TIME";

state = "NORMAL";

}else if(input.charAt(i) == 'b' && state1 == "YEAR") Y+=1;

break;

case "ALARM":

if(input.charAt(i) == 'a'){

state1 = "CHIME";

} else if(input.charAt(i) == 'd'){

state1 = "TIME";

state = "NORMAL";

}

break;

}

}

}

public String displayDate(){

return Y + "-" + M + "-" + D;

}

public String displayTime(){

return h + ":" + m;

}

public String getState() {

return state;

}

public String getState1() {

return state1;

}

}

Screenshot:

