Connecting Intelligence

Institute of Computer Engineering Technology

iCET Certified Master

ASSIGNMENT

Assignement	WEEK 08 - Programming Fundamentals
Name	Multi Dimensional Arrays
Ass. Date	06th January 2024

The first Sri Lankan COVID-19 patient was reported on the 11th of March 2020. The health sector was able to successfully control the spread of COVID-19. As a result, the number of reported COVID-19 patients count was very low level.

But from 2021, there was an increase in the number of reported COVID-19 patients. Therefore, the health department had to pay more attention to the data of the patients reported in 2021.

Create a multi-dimensional array to include the data of patients reported from 2021 January 1 to 2021 December 31. You can enter patient count by using Random numbers. (Remember that the maximum number of patient count in a day was 500 and the minimum number of patient count in a day was 0). You can start your code by creating the following arrays.

```
class Demo{
    public static void main(String args[]){
        String[] months = {"January", "February", "March", "April", "May", "June", "July", "August",
                           "September", "October", "November", "December"};
        int[] daysInMonth = {31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31};
        //write code
    }
}
```

Using the above code, you can create the 2D array as required. Specially remember that the array can have only 30 elements in the month ending in 30 days.

01. Write a Java code for the question given below using the arrays created above.

I. Print the number of patients recorded on the following dates.
- 2021-01-17
- 2021-03-26
- 2021-05-01
- 2021-07-21
- 2021-11-30

II. Incorrect data entered for the following dates. Modify the array by entering the correct data. Print the existing value of the following dates and the updated value of those days.
- 2021-02-16 - 78
- 2021-06-05 - 202
- 2021-09-09 - 181
- 2021-10-01 - 178
- 2021-12-25 - 84

III. Print the patient report in the first 10 days of 2021.

IV. Find the total number of patients reported in the first week of 2021.

V. Find the total patient count reported in the first 10 days of March.

VI. Find the total patient count reported in the last 10 days of October.

VII. Find the total patient count reported in June.

VIII. Count the number of days in which more than 100 patients reported in January.

IX. Print the number of patients reported on the first day of each month with the month's name.

X. Print the number of patients reported on the last day of each month with the month's name.

XI. Print the total number of patients reported on the first 10 days of each month with the month's name.

XII. Find the average number of patients reported on the 15^{th} of every month.

XIII. Find the total number of patients reported in 2021.

XIV. Find the average number of patients reported in one day in 2021.

XV. Find the first date of patients reported more than 200.

XVI. Count the number of days in which more than 200 patients were reported.

XVII. Print the total number of patients reported in each month with the name of the month.

XVIII. How many days have the number of patients reported in more than 200 of each month? Print the month name and number of days.

XIX. Find the highest number of patients count in April.

XX. Which month has the highest number of patients count in 2021?

XXI. Which month has the minimum number of patients count in 2021?

XXII. Find the number of days that have passed to the highest number of patients reported.

XXIII. Print the highest number of patients reported in each month with the name of the month.

XXIV. Print the minimum number of patients reported in each month with the name of the month.

XXV. Print the number of patients reported in November in descending order.

XXVI. Print the number of patients reported in August in ascending order with date.

XXVII. Print the total number of patients reported in each month in descending order with the name of month.

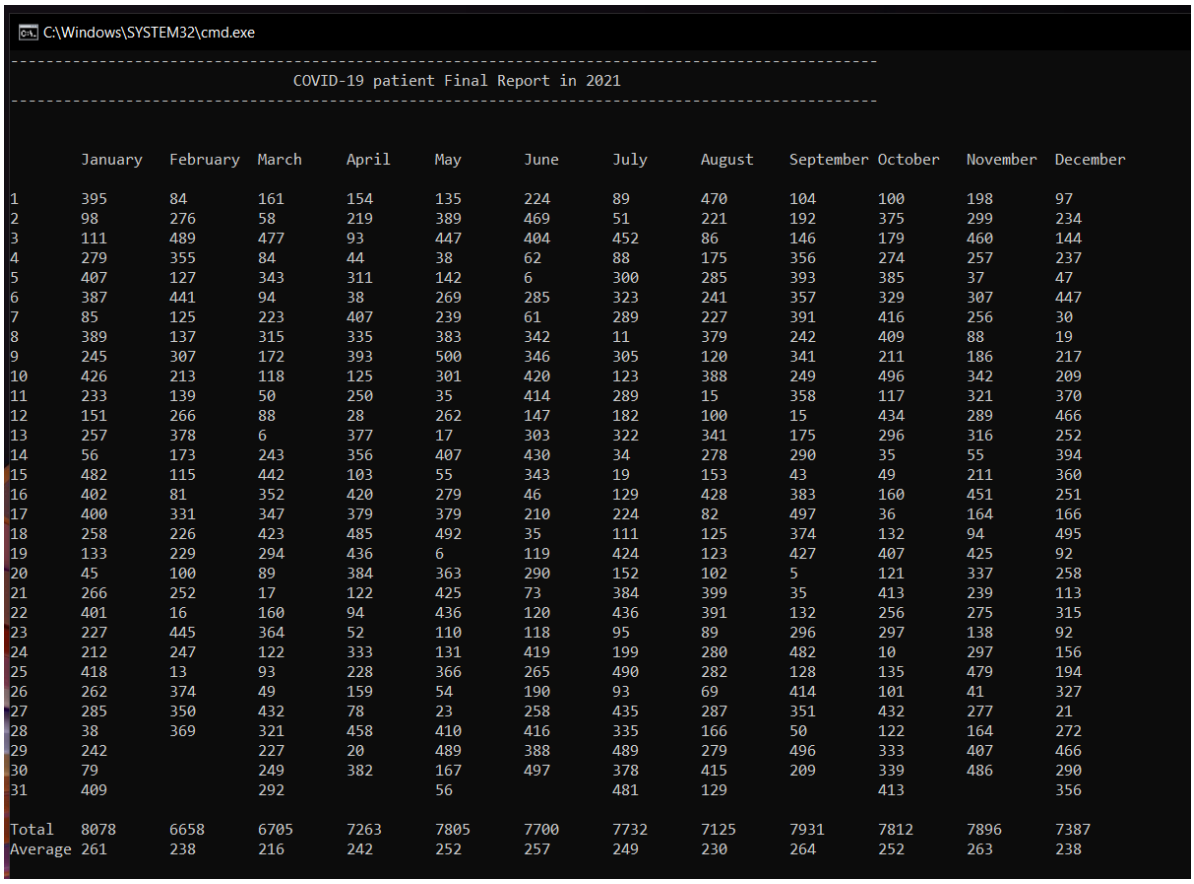
XXVIII. Create the following report.

C:\Windows\SYSTEM32\cmd.exe

COVID-19 patient in 2021

	January	February	March	April	May	June	July	August	September	October	November	December
1	77	41	299	359	134	305	144	26	300	428	484	79
2	73	328	77	371	103	253	355	361	311	45	35	208
3	393	266	65	200	15	225	256	390	298	164	382	217
4	331	149	202	328	188	19	412	288	462	459	179	5
5	311	406	310	316	51	250	365	185	389	208	136	409
6	311	184	185	487	174	319	40	66	295	74	292	378
7	350	460	68	132	47	245	424	98	211	297	399	350
8	497	472	382	500	185	79	299	296	452	405	110	218
9	58	371	175	434	45	497	222	333	21	457	453	446
10	341	52	439	424	483	481	336	475	114	458	382	144
11	499	360	325	494	437	38	480	369	482	118	191	118
12	357	301	45	255	321	62	348	225	236	199	289	445
13	277	349	416	47	264	377	212	171	57	12	422	261
14	110	137	284	98	344	244	467	95	42	233	63	418
15	198	179	348	159	145	337	435	294	318	90	157	21
16	307	459	49	220	27	456	343	127	406	150	424	340
17	344	186	283	322	478	266	265	393	399	356	232	161
18	472	131	455	429	398	171	465	195	396	160	117	179
19	180	174	307	115	356	350	302	222	476	238	158	358
20	223	47	285	1	23	51	82	402	185	194	207	63
21	139	462	361	117	63	146	122	7	371	62	146	69
22	51	474	13	61	425	140	48	475	332	101	113	185
23	324	183	276	205	321	482	197	43	61	222	21	191
24	40	61	493	73	477	259	31	374	470	371	225	420
25	120	478	374	305	308	30	479	67	457	442	86	132
26	216	297	364	18	269	92	134	112	187	413	124	373
27	183	425	307	61	424	411	379	51	259	118	101	494
28	439	323	320	220	10	322	21	274	130	427	65	460
29	194		378	170	358	214	97	145	442	143	389	433
30	177		268	19	428	102	417	83	17	34	37	145
31	265		127		490		345	352		50		451

XXIX. Add the Total and average of each month to the above report.



C:\Windows\SYSTEM32\cmd.exe

COVID-19 patient Final Report in 2021

	January	February	March	April	May	June	July	August	September	October	November	December
1	395	84	161	154	135	224	89	470	104	100	198	97
2	98	276	58	219	389	469	51	221	192	375	299	234
3	111	489	477	93	447	404	452	86	146	179	460	144
4	279	355	84	44	38	62	88	175	356	274	257	237
5	407	127	343	311	142	6	300	285	393	385	37	47
6	387	441	94	38	269	285	323	241	357	329	307	447
7	85	125	223	407	239	61	289	227	391	416	256	30
8	389	137	315	335	383	342	11	379	242	409	88	19
9	245	307	172	393	500	346	305	120	341	211	186	217
10	426	213	118	125	301	420	123	388	249	496	342	209
11	233	139	50	250	35	414	289	15	358	117	321	370
12	151	266	88	28	262	147	182	100	15	434	289	466
13	257	378	6	377	17	303	322	341	175	296	316	252
14	56	173	243	356	407	430	34	278	290	35	55	394
15	482	115	442	103	55	343	19	153	43	49	211	360
16	402	81	352	420	279	46	129	428	383	160	451	251
17	400	331	347	379	379	210	224	82	497	36	164	166
18	258	226	423	485	492	35	111	125	374	132	94	495
19	133	229	294	436	6	119	424	123	427	407	425	92
20	45	100	89	384	363	290	152	102	5	121	337	258
21	266	252	17	122	425	73	384	399	35	413	239	113
22	401	16	160	94	436	120	436	391	132	256	275	315
23	227	445	364	52	110	118	95	89	296	297	138	92
24	212	247	122	333	131	419	199	280	482	10	297	156
25	418	13	93	228	366	265	490	282	128	135	479	194
26	262	374	49	159	54	190	93	69	414	101	41	327
27	285	350	432	78	23	258	435	287	351	432	277	21
28	38	369	321	458	410	416	335	166	50	122	164	272
29	242		227	20	489	388	489	279	496	333	407	466
30	79		249	382	167	497	378	415	209	339	486	290
31	409		292		56		481	129		413		356
Total	8078	6658	6705	7263	7805	7700	7732	7125	7931	7812	7896	7387
Average	261	238	216	242	252	257	249	230	264	252	263	238