

1 Codigo fuente

Hecho con L^AT_EX

```
1 #include <stdio.h>
2 /*
3 * Equipo: Azul;
4 Integrantes: Gonzalez Melchor Abraham
5 */
6
7 //prototipos
8 float sigma (int n, float x[]);
9 int Maximo (int n, float x[]);
10 int Minimo (int n, float x[]);
11 void Ordena ();
12 float Mediana ();
13
14 int NAños;
15 float Copia[50];
16
17 int main(){
18     int i,j,Año[50],Mes_Max[50],Mes_Min[50],Anio_Max[12],Anio_Min[12];
19     float Ventas[50][12],Suma_An[50],Prom_An[50],Max_An[50],Min_An[50];
20     float Suma_Mes[12],Prom_Mes[12],Max_Mes[12],Min_Mes[12];
21     float VentasOrd[50][12], mediana[50];
22
23     FILE *Entrada;
24     Entrada = fopen("Ventas.txt","r");
25
26     FILE *Salida;
27     Salida = fopen("Resultados.txt","w");
28
29     fscanf(Entrada,"%d",&NAños);
30
31     for(i=0;i<NAños;i++){
32
33         fscanf(Entrada,"%d",&Año[i]);
34
35         for(j=0;j<12;j++){
36             fscanf(Entrada,"%f",&Ventas[i][j]);
37             Copia[j] = Ventas[i][j];
38         }
39         Suma_An[i] = sigma(12,Copia);
40         Prom_An[i] = Suma_An[i]/12;
41
42         Mes_Max[i] = Maximo(12,Copia);
43         Max_An[i] = Copia[Mes_Max[i]];
44
45         Mes_Min[i] = Minimo(12,Copia);
46         Min_An[i] = Copia[Mes_Min[i]];
47     }
48
49     for(j=0;j<12;j++){
50
51         for(i=0;i<NAños;i++){
52             Copia[i] = Ventas[i][j];
53         }
54
55         Suma_Mes[j] = sigma(NAños,Copia);
56         Prom_Mes[j] = Suma_Mes[j]/NAños;
57     }
58 }
```



```
186 for(Arriba = 0; Arriba < NAños-1; Arriba++){
187     for(Abajo = Arriba+1; Abajo < NAños; Abajo++){
188         if(Copia[Arriba] > Copia[Abajo]){
189             temp = Copia[Arriba];
190             Copia[Arriba] = Copia[Abajo];
191             Copia[Abajo] = temp;
192         }
193     }
194 }
195 }
196
197 float Mediana(){
198     if(NAños%2 == 1){
199         return Copia[NAños/2];
200     }
201     else{
202         return (Copia[(NAños/2)-1] + Copia[NAños/2])/2;
203     }
204 }
```

1.1 Archivo entrada

45
1981 570.82 694.06 83.39 910.62 736.53 894.5 813.63 223.46 838.45 783.1 935.84 135.04
1982 307.24 245.58 628.07 163.63 213.28 259.22 605.42 524.05 484.1 653.98 176.01 228.85
1983 118.55 318.82 48.24 747.8 877.41 944.4 618.84 903.71 645.3 117.35 565.21 108.19
1984 215.64 138.75 738.74 511.3 601.02 273.54 381.45 985.94 135.23 630.69 657.95 629.11
1985 805.81 882.58 88.99 457.68 390.04 524.23 252.52 395.24 197.01 107.22 552.31 370.58
1986 365.22 948.3 794.19 333.55 197.88 194.93 371.64 52.23 577.84 844.58 621.44 569.43
1987 637.44 606.44 918.44 857.4 251.09 734.56 790.75 703.21 306.01 207.24 260.59 914.25
1988 994.93 273.8 65.69 458.2 938.56 739.32 918.24 445.36 925.86 16.81 700.19 436.62
1989 674.21 583.61 576.56 122.47 226.55 974.46 387.57 939.23 773.95 510.55 124.81 556.19
1990 827.35 755.77 283.67 81.03 291.57 993.39 951.53 788.19 86.7 663.25 410.5 675.65
1991 441.58 67.76 743.11 587.22 849.95 609.23 397.82 242.77 804.18 18.02 32.75 300.51
1992 578.84 323.66 109.47 375.06 680.14 709.84 4.98 27.77 804.27 972.24 465.14 784.02
1993 361.14 300.08 387.27 848.56 905.2 268.41 506.62 106.13 631.19 33.06 475.27 316.34
1994 203.77 144.49 43.35 346.16 739.08 634.55 365.45 895.49 758.19 552.68 244.86 883.03
1995 673.81 190.39 933.21 625.0 424.85 377.38 464.36 978.42 257.82 359.28 198.47 96.57
1996 893.6 116.47 489.91 89.84 392.83 439.3 84.33 692.76 607.92 361.68 58.54 703.16
1997 557.16 622.47 935.47 67.95 77.38 373.85 580.59 555.24 481.02 864.48 240.12 935.94
1998 698.63 642.53 6.26 890.16 933.86 442.62 462.66 709.04 199.9 926.45 980.84 532.57
1999 158.85 609.89 707.84 640.62 728.78 41.19 352.11 249.07 767.94 200.17 960.4 678.49
2000 103.12 527.78 906.53 232.44 792.15 146.41 551.62 465.65 716.2 370.96 887.39 153.04
2001 248.11 631.37 195.33 686.27 997.85 451.58 224.13 285.23 308.65 284.04 368.55 617.71
2002 612.38 346.26 619.47 108.69 695.05 278.9 337.93 368.27 594.79 335.32 16.59 317.16
2003 12.6 546.48 815.23 414.52 440.24 931.98 855.07 929.27 501.62 964.65 494.02 281.5
2004 819.59 653.2 746.32 820.37 482.3 129.85 339.08 203.81 320.42 728.45 778.02 129.4
2005 81.03 370.97 555.42 607.32 381.33 647.11 563.31 585.3 478.48 847.33 79.16 238.67
2006 20.23 497.78 560.89 112.7 750.26 99.66 880.72 909.89 199.93 429.72 568.22 981.27
2007 290.46 854.59 948.67 520.82 400.78 889.32 754.27 358.17 728.31 19.32 831.85 275.67
2008 271.18 271.41 712.87 720.52 4.28 135.01 137.59 233.58 335.9 702.42 313.78 96.32
2009 5.55 265.25 227.8 988.69 889.48 978.57 321.43 992.74 684.15 180.94 583.09 324.42
2010 251.31 812.21 818.13 279.13 561.54 341.42 400.35 958.18 288.63 894.63 512.54 136.01
2011 576.1 319.12 389.75 965.24 94.41 586.99 226.07 269.53 350.36 198.71 428.48 460.05
2012 901.12 906.64 348.69 256.04 957.15 432.68 299.04 963.28 965.8 212.39 925.67 355.66
2013 252.03 255.03 149.71 729.9 40.69 420.82 961.97 149.29 848.98 813.61 666.15 497.79
2014 62.43 467.96 191.28 712.89 26.62 938.48 68.23 666.0 618.83 200.37 63.57 374.71
2015 130.1 864.0 445.45 890.68 356.01 925.56 368.36 441.5 232.4 748.98 793.13 339.1
2016 731.89 873.33 927.41 784.44 277.37 5.31 969.51 773.29 495.37 663.02 666.97 610.54
2017 808.2 4.8 587.94 564.08 757.05 412.9 47.84 610.33 728.52 722.14 354.74 111.92
2018 433.2 829.18 69.73 749.8 334.73 382.45 864.22 771.04 500.72 74.1 819.86 174.55
2019 992.77 610.91 164.29 481.21 728.71 966.95 215.25 89.15 85.79 736.26 577.09 922.13
2020 108.26 46.57 688.24 111.27 1.07 212.9 371.37 806.47 782.27 786.19 138.98 924.5
2021 443.57 627.76 276.02 13.91 472.14 725.34 17.56 78.89 155.77 13.97 910.22 735.69
2022 104.8 288.99 245.3 816.58 880.62 215.44 661.07 48.0 458.62 52.6 695.55 821.47
2023 211.12 70.37 489.64 439.15 677.15 989.61 278.89 962.3 903.93 87.33 614.39 323.12
2024 592.53 897.67 436.47 228.39 537.62 594.28 710.7 439.35 799.15 566.87 52.22 883.59
2025 888.76 381.19 2.75 60.06 720.02 626.62 681.16 246.8 187.42 261.85 756.38 291.21

1.2 Archivo de salida

	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	SUMA	PROM	MAX	MES_MAX	MIN	MES_MIN
1981	570.82	694.06	83.39	910.62	736.53	894.50	813.63	223.46	838.45	783.10	935.84	135.04	7619.44	634.95	935.84	10	83.39	2
1982	307.24	245.58	628.07	163.63	213.28	259.22	605.42	524.05	484.10	653.98	176.01	228.85	4489.43	374.12	653.98	9	163.63	3
1983	118.55	318.82	48.24	747.80	877.41	944.40	618.84	903.71	645.30	117.35	565.21	108.19	6013.82	501.15	944.40	5	48.24	2
1984	215.64	138.75	738.74	511.30	601.02	273.54	381.45	985.94	135.23	630.69	657.95	629.11	5899.36	491.61	985.94	7	135.23	8
1985	805.81	882.58	88.99	457.68	390.04	524.23	252.52	395.24	197.01	107.22	552.31	370.58	5024.21	418.68	882.58	1	88.99	2
1986	365.22	948.30	794.19	333.55	197.88	194.93	371.64	52.23	577.84	844.58	621.44	569.43	5871.23	489.27	948.30	1	52.23	7
1987	637.44	606.44	918.44	857.40	251.09	734.56	790.75	703.21	306.01	207.24	260.59	914.25	7187.42	598.95	918.44	2	207.24	9
1988	994.93	273.80	65.69	458.20	938.56	739.32	918.24	445.36	925.86	16.81	700.19	436.62	6913.58	576.13	994.93	0	16.81	9
1989	674.21	583.61	576.56	122.47	226.55	974.46	387.57	939.23	773.95	510.55	124.81	556.19	6450.16	537.51	974.46	5	122.47	3
1990	827.35	755.77	283.67	81.03	291.57	993.39	951.53	788.19	86.70	663.25	410.50	675.65	6808.60	567.38	993.39	5	81.03	3
1991	441.58	67.76	743.11	587.22	849.95	609.23	397.82	242.77	804.18	18.02	32.75	300.51	5094.90	424.58	849.95	4	18.02	9
1992	578.84	323.66	109.47	375.06	680.14	709.84	4.98	27.77	804.27	972.24	465.14	784.02	5835.43	486.29	972.24	9	4.98	6
1993	361.14	300.08	387.27	848.56	905.20	268.41	506.62	106.13	631.19	33.06	475.27	316.34	5139.27	428.27	905.20	4	33.06	9
1994	203.77	144.49	43.35	346.16	739.08	634.55	365.45	895.49	758.19	552.68	244.86	883.03	5811.10	484.26	895.49	7	43.35	2
1995	673.81	190.39	933.21	625.00	424.85	377.38	464.36	978.42	257.82	359.28	198.47	96.57	5579.56	464.96	978.42	7	96.57	11
1996	893.60	116.47	489.91	89.84	392.83	439.30	84.33	692.76	607.92	361.68	58.54	703.16	4930.34	410.86	893.60	0	58.54	10
1997	557.16	622.47	935.47	67.95	77.38	373.85	580.59	555.24	481.02	864.48	240.12	935.94	6291.67	524.31	935.94	11	67.95	3
1998	698.63	642.53	6.26	890.16	933.86	442.62	462.66	709.04	199.90	926.45	980.84	532.57	7425.52	618.79	980.84	10	6.26	2
1999	158.85	609.89	707.84	640.62	728.78	41.19	352.11	249.07	767.94	200.17	960.40	678.49	6095.38	507.95	960.40	10	41.19	5
2000	103.12	527.78	906.53	232.44	792.15	146.41	551.62	465.65	716.20	370.96	887.39	153.04	5853.29	487.77	906.53	2	103.12	0
2001	248.11	631.37	195.33	686.27	997.85	451.58	224.13	285.23	308.65	284.04	368.55	617.71	5298.82	441.57	997.85	4	195.33	2
2002	612.38	346.26	619.47	108.69	695.05	278.90	337.93	368.27	594.79	335.32	16.59	317.16	4630.81	385.90	695.05	4	16.59	10
2003	12.60	546.48	815.23	414.52	440.24	931.98	855.07	929.27	501.62	964.65	494.02	281.50	7187.18	598.93	964.65	9	12.60	0
2004	819.59	653.20	746.32	820.37	482.30	129.85	339.08	203.81	320.42	728.45	778.02	129.40	6150.81	512.57	820.37	3	129.40	11
2005	81.03	370.97	555.42	607.32	381.33	647.11	563.31	585.30	478.48	847.33	79.16	238.67	5435.43	452.95	847.33	9	79.16	10
2006	20.23	497.78	560.89	112.70	750.26	99.66	880.72	909.89	199.93	429.72	568.22	981.27	6011.27	500.94	981.27	11	20.23	0
2007	290.46	854.59	948.67	520.82	400.78	889.32	754.27	358.17	728.31	19.32	831.85	275.67	6872.23	572.69	948.67	2	19.32	9
2008	271.18	271.41	712.87	720.52	4.28	135.01	137.59	233.58	335.90	702.42	313.78	96.32	3934.86	327.90	720.52	3	4.28	4
2009	5.55	265.25	227.80	988.69	889.48	978.57	321.43	992.74	684.15	180.94	583.09	324.42	6442.11	536.84	992.74	7	5.55	0
2010	251.31	812.21	818.13	279.13	561.54	341.42	400.35	958.18	288.63	894.63	512.54	136.01	6254.08	521.17	958.18	7	136.01	11
2011	576.10	319.12	389.75	965.24	94.41	586.99	226.07	269.53	350.36	198.71	428.48	460.05	4864.81	405.40	965.24	3	94.41	4
2012	901.12	906.64	348.69	256.04	957.15	432.68	299.04	963.28	965.80	212.39	925.67	355.66	7524.16	627.01	965.80	8	212.39	9
2013	252.03	255.03	149.71	729.90	40.69	420.82	961.97	149.29	848.98	813.61	666.15	497.79	5785.97	482.16	961.97	6	40.69	4
2014	62.43	467.96	191.28	712.89	26.62	938.48	68.23	666.00	618.83	200.37	63.57	374.71	4391.37	365.95	938.48	5	26.62	4
2015	130.10	864.00	445.45	890.68	356.01	925.56	368.36	441.50	232.40	748.98	793.13	339.10	6535.27	544.61	925.56	5	130.10	0
2016	731.89	873.33	927.41	784.44	277.37	5.31	969.51	773.29	495.37	663.02	666.97	610.54	7778.45	648.20	969.51	6	5.31	5
2017	808.20	4.80	587.94	564.08	757.05	412.90	47.84	610.33	728.52	722.14	354.74	111.92	5710.46	475.87	808.20	0	4.80	1
2018	433.20	829.18	69.73	749.80	334.73	382.45	864.22	771.04	500.72	74.10	819.86	174.55	6003.58	500.30	864.22	6	69.73	2
2019	992.77	610.91	164.29	481.21	728.71	966.95	215.25	89.15	85.79	736.26	577.09	922.13	6570.51	547.54	992.77	0	85.79	8
2020	108.26	46.57	688.24	111.27	1.07	212.90	371.37	806.47	782.27	786.19	138.98	924.50	4978.09	414.84	924.50	11	1.07	4
2021	443.57	627.76	276.02	13.91	472.14	725.34	17.56	78.89	155.77	13.97	910.22	735.69	4470.84	372.57	910.22	10	13.91	3
2022	104.80	288.99	245.30	816.58	880.62	215.44	661.07	48.00	458.62	52.60	695.55	821.47	5289.04	440.75	880.62	4	48.00	7
2023	211.12	70.37	489.64	439.15	677.15	989.61	278.89	962.30	903.93	87.33	614.39	323.12	6047.00	503.92	989.61	5	70.37	1
2024	592.53	897.67	436.47	228.39	537.62	594.28	710.70	439.35	799.15	566.87	52.22	883.59	6738.84	561.57	897.67	1	52.22	10
2025	888.76	381.19	2.75	60.06	720.02	626.62	681.16	246.80	187.42	261.85	756.38	291.21	5104.22	425.35	888.76	0	2.75	2
SUMA	20037.03	21686.27	21101.20	22409.37	23712.62	23895.06	21417.25	24022.62	23553.89	20719.00	22557.85	21231.74						
PROM	445.27	481.92	468.92	497.99	526.95	531.00	475.94	533.84	523.42	460.42	501.29	471.82						
MAX	994.93	948.30	948.67	988.69	997.85	993.39	969.51	992.74	965.80	972.24	980.84	981.27						
AN_MAX	1988	1986	2007	2009	2001	1990	2016	2009	2012	1992	1998	2006						
MIN	5.55	4.80	2.75	13.91	1.07	5.31	4.98	27.77	85.79	13.97	16.59	96.32						
AN_MIN	2009	2017	2025	2021	2020	2016	1992	1992	2019	2021	2002	2008						

1.2.1 Mediana

NUM	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC
1	5.55	4.80	2.75	13.91	1.07	5.31	4.98	27.77	85.79	13.97	16.59	96.32
2	12.60	46.57	6.26	60.06	4.28	41.19	17.56	48.00	86.70	16.81	32.75	96.57
3	20.23	67.76	43.35	67.95	26.62	99.66	47.84	52.23	135.23	18.02	52.22	108.19
4	62.43	70.37	48.24	81.03	40.69	129.85	68.23	78.89	155.77	19.32	58.54	111.92
5	81.03	116.47	65.69	89.84	77.38	135.01	84.33	89.15	187.42	33.06	63.57	129.40
6	103.12	138.75	69.73	108.69	94.41	146.41	137.59	106.13	197.01	52.60	79.16	135.04
7	104.80	144.49	83.39	111.27	197.88	194.93	215.25	149.29	199.90	74.10	124.81	136.01
8	108.26	190.39	88.99	112.70	213.28	212.90	224.13	203.81	199.93	87.33	138.98	153.04
9	118.55	245.58	109.47	122.47	226.55	215.44	226.07	223.46	232.40	107.22	176.01	174.55
10	130.10	255.03	149.71	163.63	251.09	259.22	252.52	233.58	257.82	117.35	198.47	228.85
11	158.85	265.25	164.29	228.39	277.37	268.41	278.89	242.77	288.63	180.94	240.12	238.67
12	203.77	271.41	191.28	232.44	291.57	273.54	299.04	246.80	306.01	198.71	244.86	275.67
13	211.12	273.80	195.33	256.04	334.73	278.90	321.43	249.07	308.65	200.17	260.59	281.50
14	215.64	288.99	227.80	279.13	356.01	341.42	337.93	269.53	320.42	200.37	313.78	291.21
15	248.11	300.08	245.30	333.55	381.33	373.85	339.08	285.23	335.90	207.24	354.74	300.51
16	251.31	318.82	276.02	346.16	390.04	377.38	352.11	358.17	350.36	212.39	368.55	316.34
17	252.03	319.12	283.67	375.06	392.83	382.45	365.45	368.27	458.62	261.85	410.50	317.16
18	271.18	323.66	348.69	414.52	400.78	412.90	368.36	395.24	478.48	284.04	428.48	323.12
19	290.46	346.26	387.27	439.15	424.85	420.82	371.37	439.35	481.02	335.32	465.14	324.42
20	307.24	370.97	389.75	457.68	440.24	432.68	371.64	441.50	484.10	359.28	475.27	339.10
21	361.14	381.19	436.47	458.20	472.14	439.30	381.45	445.36	495.37	361.68	494.02	355.66
22	365.22	467.96	445.45	481.21	482.30	442.62	387.57	465.65	500.72	370.96	512.54	370.58
23	433.20	497.78	489.64	511.30	537.62	451.58	397.82	524.05	501.62	429.72	552.31	374.71
24	441.58	527.78	489.91	520.82	561.54	524.23	400.35	555.24	577.84	510.55	565.21	436.62
25	443.57	546.48	555.42	564.08	601.02	586.99	462.66	585.30	594.79	552.68	568.22	460.05
26	557.16	583.61	560.89	587.22	677.15	594.28	464.36	610.33	607.92	566.87	577.09	497.79
27	570.82	606.44	576.56	607.32	680.14	609.23	506.62	666.00	618.83	630.69	583.09	532.57
28	576.10	609.89	587.94	625.00	695.05	626.62	551.62	692.76	631.19	653.98	614.39	556.19
29	578.84	610.91	619.47	640.62	720.02	634.55	563.31	703.21	645.30	663.02	621.44	569.43
30	592.53	622.47	628.07	686.27	728.71	647.11	580.59	709.04	684.15	663.25	657.95	610.54
31	612.38	627.76	688.24	712.89	728.78	709.84	605.42	771.04	716.20	702.42	666.15	617.71
32	637.44	631.37	707.84	720.52	736.53	725.34	618.84	773.29	728.31	722.14	666.97	629.11
33	673.81	642.53	712.87	729.90	739.08	734.56	661.07	788.19	728.52	728.45	695.55	675.65
34	674.21	653.20	738.74	747.80	750.26	739.32	681.16	806.47	758.19	736.26	700.19	678.49
35	698.63	694.06	743.11	749.80	757.05	889.32	710.70	895.49	767.94	748.98	756.38	703.16
36	731.89	755.77	746.32	784.44	792.15	894.50	754.27	903.71	773.95	783.10	778.02	735.69
37	805.81	812.21	794.19	816.58	849.95	925.56	790.75	909.89	782.27	786.19	793.13	784.02
38	808.20	829.18	815.23	820.37	877.41	931.98	813.63	929.27	799.15	813.61	819.86	821.47
39	819.59	854.59	818.13	848.56	880.62	938.48	855.07	939.23	804.18	844.58	831.85	883.03
40	827.35	864.00	906.53	857.40	889.48	944.40	864.22	958.18	804.27	847.33	887.39	883.59
41	888.76	873.33	918.44	890.16	905.20	966.95	880.72	962.30	838.45	864.48	910.22	914.25
42	893.60	882.58	927.41	890.68	933.86	974.46	918.24	963.28	848.98	894.63	925.67	922.13
43	901.12	897.67	933.21	910.62	938.56	978.57	951.53	978.42	903.93	926.45	935.84	924.50
44	992.77	906.64	935.47	965.24	957.15	989.61	961.97	985.94	925.86	964.65	960.40	935.94
45	994.93	948.30	948.67	988.69	997.85	993.39	969.51	992.74	965.80	972.24	980.84	981.27
MED	433.20	497.78	489.64	511.30	537.62	451.58	397.82	524.05	501.62	429.72	552.31	374.71