

The “Recbysec” folder contains the R code for cleaning activity logs by seconds.

Consolidate information into a single file

```

R 4.3.1 - D:/mcsalvador/onedrive/Documentos/Prueba Tecnica Opex/PruebaOpexR/
# ...29 <lg1>, ...30 <lg1>, ...31 <lg1>, ...32 <lg1>, ...33 <lg1>, ...34 <lg1>, ...35 <lg1>, ...36 <lg1>
# i use 'print(n = ...)' to see more rows
> summary combinar_registros
Error: unexpected symbol in "summary combinar_registros"
> summary (combinar_registros)
U...1 of U...3 ...4 ...5 ...6
Length:3397478 Length:3397478 Min. : 81 Min. : -9999.00 Min. : -4741.6 Min. : 0.000
Class :character Class :character 1st Qu.: 3187 1st Qu.: 7.89 1st Qu.: 526.5 1st Qu.: 0.000
Mode :character Mode :character Median : 4875 Median : 21.56 Median : 3509.3 Median : 0.000
Mean : 4599 Mean : 24.05 Mean : 3324.8 Mean : 8.256
3rd Qu.: 6800 3rd Qu.: 38.57 3rd Qu.: 5303.6 3rd Qu.: 10.410
Max. : 30059 Max. : 113.35 Max. : 25622.8 Max. : 4630.960
NA's : 80 NA's : 80 NA's : 80 NA's : 80

...7 ...8 ...9 ...10 ...11 ...12
Min. : 0.000 Min. : -9999.00 Min. : -9999.00 Min. : -9999.00 Min. : -9999.00 Min. : -9999.00
1st Qu.: 0.000 1st Qu.: 18.98 1st Qu.: 16.89 1st Qu.: 32.46 1st Qu.: 0.00 1st Qu.: 0.00
Median : 0.000 Median : 75.77 Median : 506.80 Median : 94.26 Median : 0.00 Median : 0.00
Mean : 7.352 Mean : 67.45 Mean : 752.65 Mean : 91.38 Mean : 23.13 Mean : 23.52
3rd Qu.: 9.940 3rd Qu.: 106.55 3rd Qu.: 1524.63 3rd Qu.: 143.25 3rd Qu.: 45.18 3rd Qu.: 0.00
Max. : 502.410 Max. : 223.48 Max. : 2289.07 Max. : 545.92 Max. : 397.31 Max. : 582.19
NA's : 80 NA's : 80 NA's : 80 NA's : 80 NA's : 80 NA's : 80

...13 ...14 ...15 ...16 ...17 ...18 ...19
Min. : -9999.00 Min. : 0.0 Min. : 0.0 Min. : -9999.00 Min. : -9999.00 Min. : -9999.00 Mode:logical
1st Qu.: 0.00 1st Qu.: 202.0 1st Qu.: 0.0 1st Qu.: 4.23 1st Qu.: 95.22 1st Qu.: 95.62 NA's:3397478
Median : 0.00 Median : 223.6 Median : 578.4 Median : 61.58 Median : 105.70 Median : 115.41
Mean : 38.34 Mean : 221.5 Mean : 371.3 Mean : 44.43 Mean : 102.89 Mean : 110.34
3rd Qu.: 103.34 3rd Qu.: 245.6 3rd Qu.: 690.8 3rd Qu.: 80.14 3rd Qu.: 118.86 3rd Qu.: 129.59
Max. : 586.36 Max. : 309.7 Max. : 3430.2 Max. : 355.91 Max. : 146.53 Max. : 151.82
NA's : 80 NA's : 80 NA's : 80 NA's : 80 NA's : 80 NA's : 80

...20 ...21 ...22 ...23 ...24 ...25 ...26 ...27
Mode:logical Mode:logical Mode:logical Mode:logical Mode:logical Mode:logical Mode:logical
NA's:3397478 NA's:3397478 TRUE:26 NA's:3397478 NA's:3397478 NA's:3397478 NA's:3397478 NA's:3397478
NA's:3397452

...28 ...29 ...30 ...31 ...32 ...33 ...34 ...35
Mode:logical Mode:logical Mode:logical Mode:logical Mode:logical Mode:logical Mode:logical
NA's:3397478 NA's:3397478 NA's:3397478 NA's:3397478 NA's:3397478 NA's:3397478 NA's:3397478 NA's:3397478

...36
Mode:logical
NA's:3397478
  
```

U...1	U...2	U...3	U...4	U...5	U...6	U...7	U...8	U...9	U...10	U...11	U...12	U...13	U...14	U...15	U...16	U...17	U...18	U...19	U...20	U...21	U...22	U...23	U...24	U...25	U...26	U...27	U...28	U...29
1	MU	ESW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2	Date	Time	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3	7/31/2017	10:07:57	01	-9999.00	0	0	0	16.80	12.22	189.68	0.00	0	0	187.92	0	0.35	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4	7/31/2017	10:07:58	01	-9999.00	0	0	0	16.80	11.04	189.68	0.04	0	0	185.77	0	0.35	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5	7/31/2017	10:07:59	01	-9999.00	0	0	0	16.87	11.46	190.78	0.00	0	0	184.84	0	0.35	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
6	7/31/2017	10:08:00	01	-9999.00	0	0	0	16.80	11.04	189.68	0.04	0	0	184.60	0	0.35	91.10	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7	7/31/2017	10:08:01	01	-9999.00	0	0	0	16.72	11.04	190.78	0.00	0	0	184.24	0	0.35	91.10	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
8	7/31/2017	10:08:02	01	-9999.00	0	0	0	16.87	12.22	190.78	0.04	0	0	187.17	0	0.35	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9	7/31/2017	10:08:03	01	-9999.00	0	0	0	16.95	11.46	190.78	0.00	0	0	190.59	0	0.33	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10	7/31/2017	10:08:04	01	-9999.00	0	0	0	16.80	11.46	190.78	0.00	0	0	195.49	0	0.35	91.10	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
11	7/31/2017	10:08:05	01	-9999.00	0	0	0	16.87	11.04	190.78	0.00	0	0	196.48	0	0.35	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
12	7/31/2017	10:08:06	01	-9999.00	0	0	0	16.95	12.22	190.78	0.04	0	0	195.61	0	0.33	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
13	7/31/2017	10:08:07	01	-9999.00	0	0	0	16.95	11.46	190.78	0.00	0	0	190.08	0	0.33	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
14	7/31/2017	10:08:08	01	-9999.00	0	0	0	16.87	12.22	190.78	0.04	0	0	187.33	0	0.35	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
15	7/31/2017	10:08:09	01	-9999.00	0	0	0	16.87	11.46	190.78	0.00	0	0	185.90	0	0.33	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
16	7/31/2017	10:08:10	01	-9999.00	0	0	0	17.02	11.46	190.78	0.00	0	0	185.05	0	0.33	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
17	7/31/2017	10:08:12	01	-9999.00	0	0	0	17.02	11.46	190.78	0.00	0	0	185.05	0	0.33	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
18	7/31/2017	10:08:13	01	-9999.00	0	0	0	16.80	11.46	190.78	0.04	0	0	184.14	0	0.35	91.10	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
19	7/31/2017	10:08:14	01	-9999.00	0	0	0	16.80	11.04	190.78	0.00	0	0	185.06	0	0.35	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
20	7/31/2017	10:08:15	01	-9999.00	0	0	0	16.80	11.46	189.68	0.00	0	0	185.52	0	0.33	91.14	85.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
21	7/31/2017	10:08:16	01	-9999.00	0	0	0	16.80	11.46	190.78	0.04	0	0	185.99	0	0.35	91.14	85.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	
22	7/31/2017	10:08:17	01	-9999.00	0	0	0	16.72	12.22	190.78	0.04	0	0	186.99	0	0.33	91.14	85.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	
23	7/31/2017	10:08:18	01	-9999.00	0	0	0	16.87	11.04	190.78	0.04	0	0	187.97	0	0.33	91.10	85.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	
24	7/31/2017	10:08:19	01	-9999.00	0	0	0	16.72	11.04	190.78	0.04	0	0	189.50	0	0.33	91.14	85.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Identify null values and the percentage they represent of the corresponding column(s)

```
> summary(registros_consolidados)
      U...1      of      U...3      ...4      ...5      ...6
Length:3397478 Length:3397478 Min.   : 81 Min.   : -9999.00 Min.   : -4741.6 Min.   : 0.000
Class :character Class :character 1st Qu.: 3187 1st Qu.: 7.89 1st Qu.: 526.5 1st Qu.: 0.000
Mode  :character Mode  :character Median : 4875 Median : 21.56 Median : 3509.3 Median : 0.000
      Mean : 4599 Mean : 24.05 Mean : 3324.8 Mean : 8.256
      3rd Qu.: 6800 3rd Qu.: 38.57 3rd Qu.: 5303.6 3rd Qu.: 10.410
      Max.   :30059 Max.   : 113.35 Max.   :25622.8 Max.   :4630.960
      NA's   :80    NA's   :80    NA's   :80    NA's   :80

      ...7      ...8      ...9      ...10     ...11     ...12
Min.   : 0.000 Min.   : -9999.00 Min.   : -9999.00 Min.   : -9999.00 Min.   : -9999.00 Min.   : -9999.00
1st Qu.: 0.000 1st Qu.: 18.98 1st Qu.: 16.89 1st Qu.: 32.46 1st Qu.: 0.00 1st Qu.: 0.00
Median : 0.000 Median : 75.77 Median : 506.80 Median : 94.26 Median : 0.00 Median : 0.00
Mean : 7.352 Mean : 67.45 Mean : 752.65 Mean : 91.38 Mean : 23.13 Mean : 23.52
3rd Qu.: 9.940 3rd Qu.: 106.55 3rd Qu.: 1524.63 3rd Qu.: 143.25 3rd Qu.: 45.18 3rd Qu.: 0.00
Max.   :502.410 Max.   : 223.48 Max.   : 2289.07 Max.   : 545.92 Max.   : 397.31 Max.   : 582.19
NA's   :80    NA's   :80    NA's   :80    NA's   :80    NA's   :80    NA's   :80

      ...13     ...14     ...15     ...16     ...17     ...18
Min.   : -9999.00 Min.   : 0.0 Min.   : 0.0 Min.   : -9999.00 Min.   : -9999.00 Min.   : -9999.00
1st Qu.: 0.00 1st Qu.:202.0 1st Qu.: 0.0 1st Qu.: 4.23 1st Qu.: 95.22 1st Qu.: 95.62
Median : 0.00 Median :223.6 Median : 578.4 Median : 61.58 Median : 105.70 Median : 115.41
Mean : 38.34 Mean :221.5 Mean : 371.3 Mean : 44.43 Mean : 102.89 Mean : 110.34
3rd Qu.: 103.34 3rd Qu.:245.6 3rd Qu.: 690.8 3rd Qu.: 80.14 3rd Qu.: 118.86 3rd Qu.: 129.59
Max.   : 586.36 Max.   :309.7 Max.   :3430.2 Max.   : 355.91 Max.   : 146.53 Max.   : 151.82
NA's   :80    NA's   :80    NA's   :80    NA's   :80    NA's   :80    NA's   :80
```

```
• registros_consolidados 3397398 obs. of 18 variables
 $ Date       : Date[1:3397398], format: "2017-07-31" "2017-07-31" "2017-07-31" "2017-07-31"
 $ Time       : POSIXct[1:3397398], format: "2024-10-07 10:07:57" "2024-10-07 10:07:58" "2024-10-07 10:07:59"
 $ Depth      : num [1:3397398] 81 81 81 81 81 81 81 81 81 81 ...
 $ Block_Ht   : num [1:3397398] -9999 -9999 -9999 -9999 -9999 ...
 $ Bit_Depth  : num [1:3397398] 0 0 0 0 0 0 0 0 0 0 ...
 $ ROP_1ft    : num [1:3397398] 0 0 0 0 0 0 0 0 0 0 ...
 $ ROP_1min   : num [1:3397398] 0 0 0 0 0 0 0 0 0 0 ...
 $ Hookload   : num [1:3397398] 16.8 16.8 16.9 16.8 16.7 ...
 $ Pump_Pressure : num [1:3397398] 12.2 11.8 11.5 11.8 11.8 ...
 $ Surface_Torque: num [1:3397398] 190 190 191 190 191 ...
 $ Rotary_Speed : num [1:3397398] 0 0.04 0 0.04 0 0.04 0 0 0 0.04 ...
 $ Pump_1_SPM  : num [1:3397398] 0 0 0 0 0 0 0 0 0 0 ...
 $ Pump_2_SPM  : num [1:3397398] 0 0 0 0 0 0 0 0 0 0 ...
 $ Pit_Total   : num [1:3397398] 188 186 185 185 184 ...
 $ Flow_In     : num [1:3397398] 0 0 0 0 0 0 0 0 0 0 ...
 $ Flow_Out    : num [1:3397398] 0.35 0.35 0.35 0.35 0.35 0.35 0.35 0.33 0.35 0.33 ...
 $ Temp_In     : num [1:3397398] 91.1 91.1 91.1 91.1 91.1 ...
 $ Temp_Out    : num [1:3397398] 85.1 85.1 85.1 85.1 85.1 85.1 85.1 85.1 85.1 85.1 ...
```

Data in the Consolidated Records set was cleaned

Registros Consolidados																			
	Date	Time	Depth	Block_Ht	Bit_Depth	ROP_IR	ROP_1min	Hookload	Pump_Pressure	Surface_Torque	Rotary_Speed	Pump_1_SPM	Pump_2_SPM	Pit_Total	Flow_In	Flow_Out	Temp_In	Temp_Out	
1	2017-07-31	2024-10-07 10:07:57	81	-9999.00	0	0	0	16.80	12.22	189.68	0.00	0	0	0	187.92	0	0.35	91.14	85.10
2	2017-07-31	2024-10-07 10:07:58	81	-9999.00	0	0	0	16.80	11.84	189.68	0.04	0	0	0	185.77	0	0.35	91.14	85.10
3	2017-07-31	2024-10-07 10:07:59	81	-9999.00	0	0	0	16.87	11.46	190.78	0.00	0	0	0	184.84	0	0.35	91.14	85.10
4	2017-07-31	2024-10-07 10:08:00	81	-9999.00	0	0	0	16.80	11.84	189.68	0.04	0	0	0	184.60	0	0.35	91.10	85.10
5	2017-07-31	2024-10-07 10:08:01	81	-9999.00	0	0	0	16.72	11.84	190.78	0.00	0	0	0	184.24	0	0.35	91.10	85.10
6	2017-07-31	2024-10-07 10:08:02	81	-9999.00	0	0	0	16.87	12.22	190.78	0.04	0	0	0	187.17	0	0.35	91.14	85.10
7	2017-07-31	2024-10-07 10:08:03	81	-9999.00	0	0	0	16.95	11.46	190.78	0.00	0	0	0	190.59	0	0.33	91.14	85.10
8	2017-07-31	2024-10-07 10:08:04	81	-9999.00	0	0	0	16.80	11.46	190.78	0.00	0	0	0	195.49	0	0.35	91.10	85.10
9	2017-07-31	2024-10-07 10:08:05	81	-9999.00	0	0	0	16.87	11.84	190.78	0.00	0	0	0	196.48	0	0.35	91.14	85.10
10	2017-07-31	2024-10-07 10:08:06	81	-9999.00	0	0	0	16.95	12.22	190.78	0.04	0	0	0	195.61	0	0.33	91.14	85.10
11	2017-07-31	2024-10-07 10:08:07	81	-9999.00	0	0	0	16.95	11.46	190.78	0.00	0	0	0	190.08	0	0.33	91.14	85.10
12	2017-07-31	2024-10-07 10:08:08	81	-9999.00	0	0	0	16.87	12.22	190.78	0.04	0	0	0	187.33	0	0.35	91.14	85.10
13	2017-07-31	2024-10-07 10:08:09	81	-9999.00	0	0	0	16.87	11.46	190.78	0.00	0	0	0	185.50	0	0.33	91.14	85.10
14	2017-07-31	2024-10-07 10:08:10	81	-9999.00	0	0	0	17.02	11.46	190.78	0.00	0	0	0	185.05	0	0.33	91.14	85.10
15	2017-07-31	2024-10-07 10:08:12	81	-9999.00	0	0	0	17.02	11.46	190.78	0.00	0	0	0	185.05	0	0.33	91.14	85.10
16	2017-07-31	2024-10-07 10:08:13	81	-9999.00	0	0	0	16.80	11.46	190.78	0.04	0	0	0	184.14	0	0.35	91.10	85.10
17	2017-07-31	2024-10-07 10:08:14	81	-9999.00	0	0	0	16.80	11.84	190.78	0.00	0	0	0	185.06	0	0.35	91.14	85.10
18	2017-07-31	2024-10-07 10:08:15	81	-9999.00	0	0	0	16.80	11.46	189.68	0.00	0	0	0	185.52	0	0.33	91.14	85.10
19	2017-07-31	2024-10-07 10:08:16	81	-9999.00	0	0	0	16.80	11.46	190.78	0.04	0	0	0	185.99	0	0.35	91.14	85.06
20	2017-07-31	2024-10-07 10:08:17	81	-9999.00	0	0	0	16.72	12.22	190.78	0.04	0	0	0	186.99	0	0.33	91.14	85.06
21	2017-07-31	2024-10-07 10:08:18	81	-9999.00	0	0	0	16.87	11.84	190.78	0.04	0	0	0	187.97	0	0.33	91.10	85.06
22	2017-07-31	2024-10-07 10:08:19	81	-9999.00	0	0	0	16.72	11.84	190.78	0.04	0	0	0	189.50	0	0.33	91.14	85.06
23	2017-07-31	2024-10-07 10:08:20	81	-9999.00	0	0	0	16.87	11.84	190.78	0.00	0	0	0	192.71	0	0.33	91.10	85.06
24	2017-07-31	2024-10-07 10:08:21	81	-9999.00	0	0	0	16.87	11.84	190.78	0.04	0	0	0	190.84	0	0.35	91.14	85.06
25	2017-07-31	2024-10-07 10:08:22	81	-9999.00	0	0	0	16.95	11.84	190.78	0.00	0	0	0	189.66	0	0.35	91.14	85.06
26	2017-07-31	2024-10-07 10:08:23	81	-9999.00	0	0	0	16.87	12.22	190.78	0.04	0	0	0	190.33	0	0.35	91.14	85.06

Calculate measures of central tendency for the full range of dates for each of the columns.

These are the measurements in the consolidated and cleaned data set

```
> summary(registros_consolidados)
```

Date		Time		Depth		Block_Ht		Bit_Depth			
Min. :	2017-07-31	Min. :	2024-10-07 00:00:00.00	Min. :	81	Min. :	-9999.00	Min. :	-4741.6		
1st Qu.:	2017-08-10	1st Qu.:	2024-10-07 06:07:34.00	1st Qu.:	3187	1st Qu.:	7.89	1st Qu.:	526.5		
Median :	2017-08-20	Median :	2024-10-07 12:11:05.50	Median :	4875	Median :	21.56	Median :	3509.3		
Mean :	2017-08-21	Mean :	2024-10-07 12:06:19.99	Mean :	4599	Mean :	24.05	Mean :	3324.8		
3rd Qu.:	2017-09-04	3rd Qu.:	2024-10-07 18:05:36.00	3rd Qu.:	6800	3rd Qu.:	38.57	3rd Qu.:	5303.6		
Max. :	2017-09-13	Max. :	2024-10-07 23:59:59.00	Max. :	30059	Max. :	113.35	Max. :	25622.8		
ROP_lft		ROP_1min		Hookload		Pump_Pressure		Surface_Torque			
Min. :	0.000	Min. :	0.000	Min. :	-9999.00	Min. :	-9999.00	Min. :	-9999.00		
1st Qu.:	0.000	1st Qu.:	0.000	1st Qu.:	18.98	1st Qu.:	16.89	1st Qu.:	32.46		
Median :	0.000	Median :	0.000	Median :	75.77	Median :	506.80	Median :	94.26		
Mean :	8.256	Mean :	7.352	Mean :	67.45	Mean :	752.65	Mean :	91.38		
3rd Qu.:	10.410	3rd Qu.:	9.940	3rd Qu.:	106.55	3rd Qu.:	1524.63	3rd Qu.:	143.25		
Max. :	4630.960	Max. :	502.410	Max. :	223.48	Max. :	2289.07	Max. :	545.92		
Rotary_Speed		Pump_1_SPM		Pump_2_SPM		Pit_Total		Flow_In		Flow_Out	
Min. :	-9999.00	Min. :	-9999.00	Min. :	-9999.00	Min. :	0.0	Min. :	0.0	Min. :	-9999.00
1st Qu.:	0.00	1st Qu.:	0.00	1st Qu.:	0.00	1st Qu.:	202.0	1st Qu.:	0.0	1st Qu.:	4.23
Median :	0.00	Median :	0.00	Median :	0.00	Median :	223.6	Median :	578.4	Median :	61.58
Mean :	23.13	Mean :	23.52	Mean :	38.34	Mean :	221.5	Mean :	371.3	Mean :	44.43
3rd Qu.:	45.18	3rd Qu.:	0.00	3rd Qu.:	103.34	3rd Qu.:	245.6	3rd Qu.:	690.8	3rd Qu.:	80.14
Max. :	397.31	Max. :	582.19	Max. :	586.36	Max. :	309.7	Max. :	3430.2	Max. :	355.91
Temp_In		Temp_Out									
Min. :	-9999.00	Min. :	-9999.00								
1st Qu.:	95.22	1st Qu.:	95.62								
Median :	105.70	Median :	115.41								
Mean :	102.89	Mean :	110.34								
3rd Qu.:	118.86	3rd Qu.:	129.59								
Max. :	146.53	Max. :	151.82								

Visualization of results

According to the Interquartile Range Rule (IQR) the Q1 and Q3 outliers are identified and the details of the records are saved in a CSV for each column of the records.

```
# Calculando los límites
Q1 <- quantile(registros_consolidados$ROP_1min, 0.25)
Q3 <- quantile(registros_consolidados$ROP_1min, 0.75)
IQR <- IQR(registros_consolidados$ROP_1min)
limite_inferior <- Q1 - 1.5*IQR
limite_superior <- Q3 + 1.5*IQR

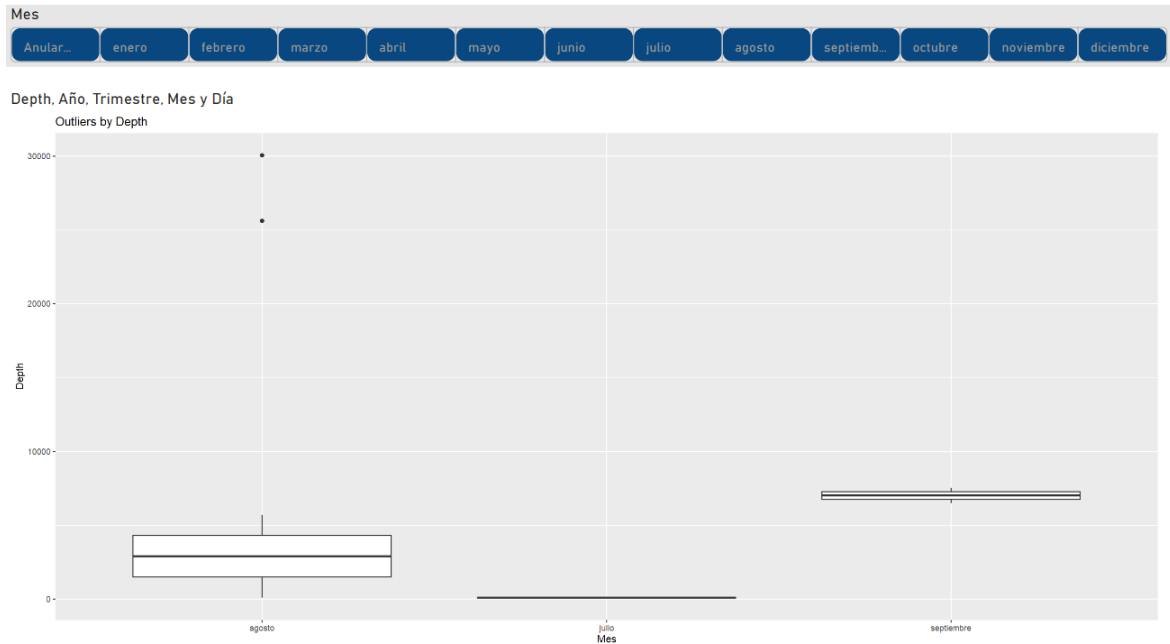
# Identificando los outliers
outliers <- registros_consolidados[registros_consolidados$ROP_1min < limite_inferior | registros_consolidados$ROP_1min > limite_superior, ]
write.csv(outliers, "outliers_ROP_1min.csv")
rm(outliers)
```

outliers_Bit_Depth - Excel																	María Concepción Salvador González																
ArchivoInicioInsertarDisposición de páginaFórmulasDatosRevisarVistaAyuda¿Qué desea hacer?																																	
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In Power BI, a Box plot is used to visually graph the data to identify the outliers with an R Code box.



In PowerBI I configured the graph to have a monthly segmentation or for all the months of the year to see the variation of the data according to each column of the records.



In a single dashboard I used the average formula by date segments, calculated the daily average for each temperature, and added the monthly segmentation to explore the information.



In the “Recbyhour” folder

The most recent data from each file was consolidated for use in the function where the most recent among them are chosen.

```

Data
● agregalista          12 obs. of 4 variables
● bitacora1            22 obs. of 7 variables
  $ ARCHIVO           : chr [1:22] "Balam 3 EXP_Etapa 12 14 _C1_Bitacora_de_operaciones.xlsx" "Balam 3 EXP_Etapa 12 14 _C1
  $ ETAPA              : num [1:22] 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 ...
  $ FECHA_INICIO       : POSIXct[1:22], format: "2024-06-08" "2024-06-08" "2024-06-08" "2024-06-08" ...
  $ FECHA_FIN          : POSIXct[1:22], format: "2024-06-08" "2024-06-08" "2024-06-08" "2024-06-08" ...
  $ HORA_INICIO        : chr [1:22] "1899-12-31" "1899-12-31 01:00:00" "1899-12-31 02:00:00" "1899-12-31 03:00:00" ...
  $ HORA_FIN           : chr [1:22] "1:0" "2:0" "3:0" "3:12" ...
  $ FECHA              : chr [1:22] "2024-06-08 1:0" "2024-06-08 2:0" "2024-06-08 3:0" "2024-06-08 3:12" ...
● bitacora10           30 obs. of 7 variables
● bitacora11           39 obs. of 7 variables
● bitacora12           24 obs. of 7 variables
● bitacora2            12 obs. of 7 variables
● bitacora3            46 obs. of 7 variables
● bitacora4            8 obs. of 7 variables
● bitacora5            35 obs. of 7 variables
● bitacora6            133 obs. of 7 variables
● bitacora7            26 obs. of 7 variables
● bitacora8            91 obs. of 7 variables
● bitacora9            8 obs. of 7 variables

```

This is the list of each log file with its latest date.

	Bitacora	Etapa	Corrida	Fecha
lista	bitacora1	14.5	C1	2024-06-10 0:00
lista.1	bitacora2	14.5	C1	2024-06-09 12:0
lista.2	bitacora3	12.25	C2	2024-06-12 00:00
lista.3	bitacora4	12.25	C2	2024-06-11 00:00
lista.4	bitacora5	18.5	C1	2024-06-04 00:00
lista.5	bitacora6	18.5	C1	2024-06-05 00:00
lista.6	bitacora9	18.5	C2	2024-06-06 00:00
lista.7	bitacora7	18.5	C1	2024-06-03 00:00
lista.8	bitacora8	18.5	C2	2024-06-08 00:00
lista.9	bitacora10	18.5	C2	2024-06-07 00:00
lista.10	bitacora11	26	C1	2024-06-02 6:45
lista.11	bitacora12	26	C1	2024-06-02 0:00

This is the function I created to get the most recent ones and consolidate them into a single data set.

```
funcion_mas_recientes<-function(lista_de_bitacoras){
  load("D:/mcsalvadorg/onedrive/Documentos/GIT_HUB/Records in R/Recbyhour/w_records.RData")
  mas_recientes<-lista_de_bitacoras %>% group_by(Etapa,Corrida) %>% slice_head(n = 1)
  listarecientes<-mas_recientes$Bitacora
  df<-paste0(listarecientes)
  df_list<-mget(df)
  recientes_consolidados<-NULL
  recientes_consolidados<-do.call(rbind, df_list)
  return(recientes_consolidados)
}
```

Call funtion

```
recientes <-funcion_recientes
```

These are the most recent records.

	Bitacora	Etapa	Corrida	Fecha
1	bitacora3	12.25	C2	2024-06-12 00:00
2	bitacora1	14.5	C1	2024-06-10 0:00
3	bitacora5	18.5	C1	2024-06-04 00:00
4	bitacora9	18.5	C2	2024-06-06 00:00
5	bitacora11	26	C1	2024-06-02 6:45

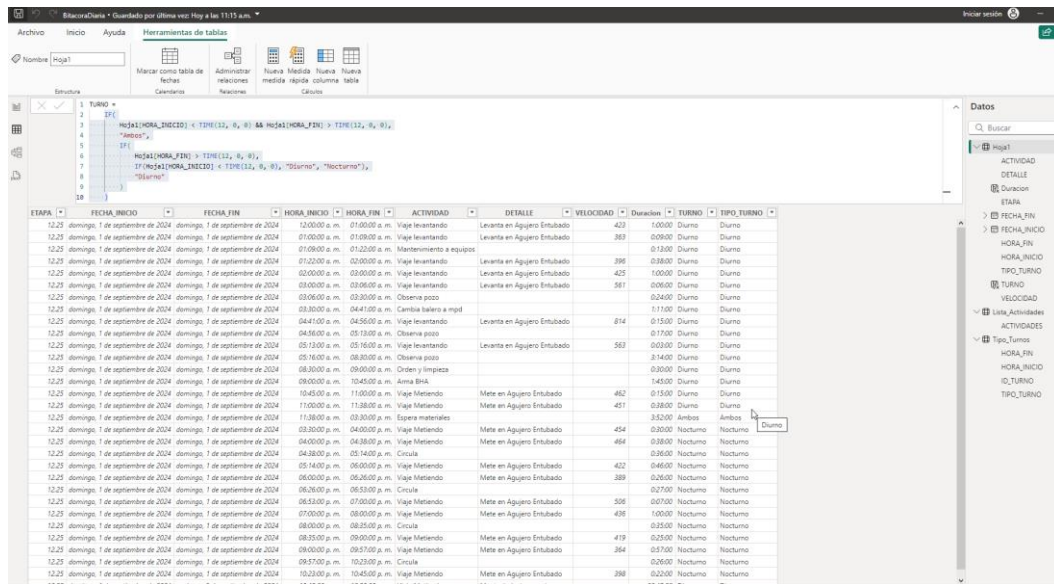
This is the consolidated data set of the most recent.

funcion_bitacora_reciente.R xrecientes x

ARCHIVO	ETAPA	FECHA_INICIO	FECHA_FIN	HORA_INICIO	HORA_FIN	FECHA	
bitacora3.1	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-10	2024-06-10	00:00	11:00	2024-06-10 11:00
bitacora3.2	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-10	2024-06-10	11:00	12:30	2024-06-10 12:30
bitacora3.3	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-10	2024-06-10	12:30	15:00	2024-06-10 15:00
bitacora3.4	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-10	2024-06-10	15:00	18:17	2024-06-10 18:17
bitacora3.5	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-10	2024-06-10	18:17	18:41	2024-06-10 18:41
bitacora3.6	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-10	2024-06-10	18:41	20:31	2024-06-10 20:31
bitacora3.7	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-10	2024-06-10	20:31	22:15	2024-06-10 22:15
bitacora3.8	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-10	2024-06-11	22:15	00:00	2024-06-11 00:00
bitacora3.9	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	00:00	00:23	2024-06-11 00:23
bitacora3.10	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	00:23	00:53	2024-06-11 00:53
bitacora3.11	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	00:53	01:00	2024-06-11 01:00
bitacora3.12	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	01:00	02:00	2024-06-11 02:00
bitacora3.13	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	02:00	02:10	2024-06-11 02:10
bitacora3.14	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	02:10	02:31	2024-06-11 02:31
bitacora3.15	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	02:31	03:00	2024-06-11 03:00
bitacora3.16	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	03:00	03:47	2024-06-11 03:47
bitacora3.17	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	03:47	04:17	2024-06-11 04:17
bitacora3.18	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	04:17	05:00	2024-06-11 05:00
bitacora3.19	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	05:00	05:33	2024-06-11 05:33
bitacora3.20	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	05:33	05:57	2024-06-11 05:57
bitacora3.21	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	05:57	06:00	2024-06-11 06:00
bitacora3.22	Balam 3 EXP_Etapa 12 14_C2_Bitacora_de_operacio...	12.25	2024-06-11	2024-06-11	06:00	07:00	2024-06-11 07:00

Visualization of results

I created a dashboard in PowerBI to display the activities recorded according to the shifts (Day, Night and Both). To do this, I added the calculated columns of Duration and Shift, assigning the label Both in case an activity lasts both shifts.



Includes the percentage of time that each activity represents for each shift.

TIPO_TURNO

Anular toda la selección

Ambos

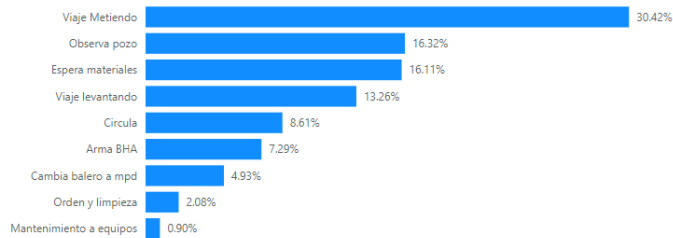
Diurno

Nocturno

ACTIVIDADES

Todas

Porcentaje de Actividades



TIPO_TURNO	ACTIVIDADES	DETALLE	Duracióntotal	Promedio_Actividad
Diurno	Espera materiales	Sin Detalle	3:52:00	16.1 %
	Arma BHA	Sin Detalle	1:45:00	7.3 %
	Cambia balero a mpd	Sin Detalle	1:11:00	4.9 %
	Mantenimiento a equipos	Sin Detalle	0:13:00	0.9 %
	Observa pozo	Sin Detalle	3:55:00	16.3 %
	Orden y limpieza	Sin Detalle	0:30:00	2.1 %
	Viaje levantando	Levanta en Agujero Entubado	3:11:00	13.3 %
	Viaje Metiendo	Mantenimiento a equipos Mete en Agujero Entubado	1:14:00 0:53:00	5.1 % 3.7 %
Nocturno	Circula	Sin Detalle	2:04:00	8.6 %
	Viaje Metiendo	Mete en Agujero Entubado	5:11:00	21.6 %