Data transformation

Hans

4/13/2021

## Ozone Solar.R Wind Temp Month Day  
## 1 41 190 7.4 67 5 1  
## 2 36 118 8.0 72 5 2  
## 3 12 149 12.6 74 5 3  
## 4 18 313 11.5 62 5 4  
## 5 NA NA 14.3 56 5 5  
## 6 28 NA 14.9 66 5 6  
## 7 23 299 8.6 65 5 7  
## 8 19 99 13.8 59 5 8  
## 9 8 19 20.1 61 5 9  
## 10 NA 194 8.6 69 5 10  
## 11 7 NA 6.9 74 5 11  
## 12 16 256 9.7 69 5 12  
## 13 11 290 9.2 66 5 13  
## 14 14 274 10.9 68 5 14  
## 15 18 65 13.2 58 5 15  
## 16 14 334 11.5 64 5 16  
## 17 34 307 12.0 66 5 17  
## 18 6 78 18.4 57 5 18  
## 19 30 322 11.5 68 5 19  
## 20 11 44 9.7 62 5 20  
## 21 1 8 9.7 59 5 21  
## 22 11 320 16.6 73 5 22  
## 23 4 25 9.7 61 5 23  
## 24 32 92 12.0 61 5 24  
## 25 NA 66 16.6 57 5 25  
## 26 NA 266 14.9 58 5 26  
## 27 NA NA 8.0 57 5 27  
## 28 23 13 12.0 67 5 28  
## 29 45 252 14.9 81 5 29  
## 30 115 223 5.7 79 5 30  
## 31 37 279 7.4 76 5 31  
## 32 NA 286 8.6 78 6 1  
## 33 NA 287 9.7 74 6 2  
## 34 NA 242 16.1 67 6 3  
## 35 NA 186 9.2 84 6 4  
## 36 NA 220 8.6 85 6 5  
## 37 NA 264 14.3 79 6 6  
## 38 29 127 9.7 82 6 7  
## 39 NA 273 6.9 87 6 8  
## 40 71 291 13.8 90 6 9  
## 41 39 323 11.5 87 6 10  
## 42 NA 259 10.9 93 6 11  
## 43 NA 250 9.2 92 6 12  
## 44 23 148 8.0 82 6 13  
## 45 NA 332 13.8 80 6 14  
## 46 NA 322 11.5 79 6 15  
## 47 21 191 14.9 77 6 16  
## 48 37 284 20.7 72 6 17  
## 49 20 37 9.2 65 6 18  
## 50 12 120 11.5 73 6 19  
## 51 13 137 10.3 76 6 20  
## 52 NA 150 6.3 77 6 21  
## 53 NA 59 1.7 76 6 22  
## 54 NA 91 4.6 76 6 23  
## 55 NA 250 6.3 76 6 24  
## 56 NA 135 8.0 75 6 25  
## 57 NA 127 8.0 78 6 26  
## 58 NA 47 10.3 73 6 27  
## 59 NA 98 11.5 80 6 28  
## 60 NA 31 14.9 77 6 29  
## 61 NA 138 8.0 83 6 30  
## 62 135 269 4.1 84 7 1  
## 63 49 248 9.2 85 7 2  
## 64 32 236 9.2 81 7 3  
## 65 NA 101 10.9 84 7 4  
## 66 64 175 4.6 83 7 5  
## 67 40 314 10.9 83 7 6  
## 68 77 276 5.1 88 7 7  
## 69 97 267 6.3 92 7 8  
## 70 97 272 5.7 92 7 9  
## 71 85 175 7.4 89 7 10  
## 72 NA 139 8.6 82 7 11  
## 73 10 264 14.3 73 7 12  
## 74 27 175 14.9 81 7 13  
## 75 NA 291 14.9 91 7 14  
## 76 7 48 14.3 80 7 15  
## 77 48 260 6.9 81 7 16  
## 78 35 274 10.3 82 7 17  
## 79 61 285 6.3 84 7 18  
## 80 79 187 5.1 87 7 19  
## 81 63 220 11.5 85 7 20  
## 82 16 7 6.9 74 7 21  
## 83 NA 258 9.7 81 7 22  
## 84 NA 295 11.5 82 7 23  
## 85 80 294 8.6 86 7 24  
## 86 108 223 8.0 85 7 25  
## 87 20 81 8.6 82 7 26  
## 88 52 82 12.0 86 7 27  
## 89 82 213 7.4 88 7 28  
## 90 50 275 7.4 86 7 29  
## 91 64 253 7.4 83 7 30  
## 92 59 254 9.2 81 7 31  
## 93 39 83 6.9 81 8 1  
## 94 9 24 13.8 81 8 2  
## 95 16 77 7.4 82 8 3  
## 96 78 NA 6.9 86 8 4  
## 97 35 NA 7.4 85 8 5  
## 98 66 NA 4.6 87 8 6  
## 99 122 255 4.0 89 8 7  
## 100 89 229 10.3 90 8 8  
## 101 110 207 8.0 90 8 9  
## 102 NA 222 8.6 92 8 10  
## 103 NA 137 11.5 86 8 11  
## 104 44 192 11.5 86 8 12  
## 105 28 273 11.5 82 8 13  
## 106 65 157 9.7 80 8 14  
## 107 NA 64 11.5 79 8 15  
## 108 22 71 10.3 77 8 16  
## 109 59 51 6.3 79 8 17  
## 110 23 115 7.4 76 8 18  
## 111 31 244 10.9 78 8 19  
## 112 44 190 10.3 78 8 20  
## 113 21 259 15.5 77 8 21  
## 114 9 36 14.3 72 8 22  
## 115 NA 255 12.6 75 8 23  
## 116 45 212 9.7 79 8 24  
## 117 168 238 3.4 81 8 25  
## 118 73 215 8.0 86 8 26  
## 119 NA 153 5.7 88 8 27  
## 120 76 203 9.7 97 8 28  
## 121 118 225 2.3 94 8 29  
## 122 84 237 6.3 96 8 30  
## 123 85 188 6.3 94 8 31  
## 124 96 167 6.9 91 9 1  
## 125 78 197 5.1 92 9 2  
## 126 73 183 2.8 93 9 3  
## 127 91 189 4.6 93 9 4  
## 128 47 95 7.4 87 9 5  
## 129 32 92 15.5 84 9 6  
## 130 20 252 10.9 80 9 7  
## 131 23 220 10.3 78 9 8  
## 132 21 230 10.9 75 9 9  
## 133 24 259 9.7 73 9 10  
## 134 44 236 14.9 81 9 11  
## 135 21 259 15.5 76 9 12  
## 136 28 238 6.3 77 9 13  
## 137 9 24 10.9 71 9 14  
## 138 13 112 11.5 71 9 15  
## 139 46 237 6.9 78 9 16  
## 140 18 224 13.8 67 9 17  
## 141 13 27 10.3 76 9 18  
## 142 24 238 10.3 68 9 19  
## 143 16 201 8.0 82 9 20  
## 144 13 238 12.6 64 9 21  
## 145 23 14 9.2 71 9 22  
## 146 36 139 10.3 81 9 23  
## 147 7 49 10.3 69 9 24  
## 148 14 20 16.6 63 9 25  
## 149 30 193 6.9 70 9 26  
## 150 NA 145 13.2 77 9 27  
## 151 14 191 14.3 75 9 28  
## 152 18 131 8.0 76 9 29  
## 153 20 223 11.5 68 9 30

#dealing with missing values #1:Omit

## Ozone Solar.R Wind Temp Month Day  
## 1 41 190 7.4 67 5 1  
## 2 36 118 8.0 72 5 2  
## 3 12 149 12.6 74 5 3  
## 4 18 313 11.5 62 5 4  
## 7 23 299 8.6 65 5 7  
## 8 19 99 13.8 59 5 8  
## 9 8 19 20.1 61 5 9  
## 12 16 256 9.7 69 5 12  
## 13 11 290 9.2 66 5 13  
## 14 14 274 10.9 68 5 14  
## 15 18 65 13.2 58 5 15  
## 16 14 334 11.5 64 5 16  
## 17 34 307 12.0 66 5 17  
## 18 6 78 18.4 57 5 18  
## 19 30 322 11.5 68 5 19  
## 20 11 44 9.7 62 5 20  
## 21 1 8 9.7 59 5 21  
## 22 11 320 16.6 73 5 22  
## 23 4 25 9.7 61 5 23  
## 24 32 92 12.0 61 5 24  
## 28 23 13 12.0 67 5 28  
## 29 45 252 14.9 81 5 29  
## 30 115 223 5.7 79 5 30  
## 31 37 279 7.4 76 5 31  
## 38 29 127 9.7 82 6 7  
## 40 71 291 13.8 90 6 9  
## 41 39 323 11.5 87 6 10  
## 44 23 148 8.0 82 6 13  
## 47 21 191 14.9 77 6 16  
## 48 37 284 20.7 72 6 17  
## 49 20 37 9.2 65 6 18  
## 50 12 120 11.5 73 6 19  
## 51 13 137 10.3 76 6 20  
## 62 135 269 4.1 84 7 1  
## 63 49 248 9.2 85 7 2  
## 64 32 236 9.2 81 7 3  
## 66 64 175 4.6 83 7 5  
## 67 40 314 10.9 83 7 6  
## 68 77 276 5.1 88 7 7  
## 69 97 267 6.3 92 7 8  
## 70 97 272 5.7 92 7 9  
## 71 85 175 7.4 89 7 10  
## 73 10 264 14.3 73 7 12  
## 74 27 175 14.9 81 7 13  
## 76 7 48 14.3 80 7 15  
## 77 48 260 6.9 81 7 16  
## 78 35 274 10.3 82 7 17  
## 79 61 285 6.3 84 7 18  
## 80 79 187 5.1 87 7 19  
## 81 63 220 11.5 85 7 20  
## 82 16 7 6.9 74 7 21  
## 85 80 294 8.6 86 7 24  
## 86 108 223 8.0 85 7 25  
## 87 20 81 8.6 82 7 26  
## 88 52 82 12.0 86 7 27  
## 89 82 213 7.4 88 7 28  
## 90 50 275 7.4 86 7 29  
## 91 64 253 7.4 83 7 30  
## 92 59 254 9.2 81 7 31  
## 93 39 83 6.9 81 8 1  
## 94 9 24 13.8 81 8 2  
## 95 16 77 7.4 82 8 3  
## 99 122 255 4.0 89 8 7  
## 100 89 229 10.3 90 8 8  
## 101 110 207 8.0 90 8 9  
## 104 44 192 11.5 86 8 12  
## 105 28 273 11.5 82 8 13  
## 106 65 157 9.7 80 8 14  
## 108 22 71 10.3 77 8 16  
## 109 59 51 6.3 79 8 17  
## 110 23 115 7.4 76 8 18  
## 111 31 244 10.9 78 8 19  
## 112 44 190 10.3 78 8 20  
## 113 21 259 15.5 77 8 21  
## 114 9 36 14.3 72 8 22  
## 116 45 212 9.7 79 8 24  
## 117 168 238 3.4 81 8 25  
## 118 73 215 8.0 86 8 26  
## 120 76 203 9.7 97 8 28  
## 121 118 225 2.3 94 8 29  
## 122 84 237 6.3 96 8 30  
## 123 85 188 6.3 94 8 31  
## 124 96 167 6.9 91 9 1  
## 125 78 197 5.1 92 9 2  
## 126 73 183 2.8 93 9 3  
## 127 91 189 4.6 93 9 4  
## 128 47 95 7.4 87 9 5  
## 129 32 92 15.5 84 9 6  
## 130 20 252 10.9 80 9 7  
## 131 23 220 10.3 78 9 8  
## 132 21 230 10.9 75 9 9  
## 133 24 259 9.7 73 9 10  
## 134 44 236 14.9 81 9 11  
## 135 21 259 15.5 76 9 12  
## 136 28 238 6.3 77 9 13  
## 137 9 24 10.9 71 9 14  
## 138 13 112 11.5 71 9 15  
## 139 46 237 6.9 78 9 16  
## 140 18 224 13.8 67 9 17  
## 141 13 27 10.3 76 9 18  
## 142 24 238 10.3 68 9 19  
## 143 16 201 8.0 82 9 20  
## 144 13 238 12.6 64 9 21  
## 145 23 14 9.2 71 9 22  
## 146 36 139 10.3 81 9 23  
## 147 7 49 10.3 69 9 24  
## 148 14 20 16.6 63 9 25  
## 149 30 193 6.9 70 9 26  
## 151 14 191 14.3 75 9 28  
## 152 18 131 8.0 76 9 29  
## 153 20 223 11.5 68 9 30

#2:Replacing missing values with mean

## Ozone Solar.R Wind Temp Month Day  
## 1 41.00000 190 7.4 67 5 1  
## 2 36.00000 118 8.0 72 5 2  
## 3 12.00000 149 12.6 74 5 3  
## 4 18.00000 313 11.5 62 5 4  
## 5 42.12931 NA 14.3 56 5 5  
## 6 28.00000 NA 14.9 66 5 6  
## 7 23.00000 299 8.6 65 5 7  
## 8 19.00000 99 13.8 59 5 8  
## 9 8.00000 19 20.1 61 5 9  
## 10 42.12931 194 8.6 69 5 10  
## 11 7.00000 NA 6.9 74 5 11  
## 12 16.00000 256 9.7 69 5 12  
## 13 11.00000 290 9.2 66 5 13  
## 14 14.00000 274 10.9 68 5 14  
## 15 18.00000 65 13.2 58 5 15  
## 16 14.00000 334 11.5 64 5 16  
## 17 34.00000 307 12.0 66 5 17  
## 18 6.00000 78 18.4 57 5 18  
## 19 30.00000 322 11.5 68 5 19  
## 20 11.00000 44 9.7 62 5 20  
## 21 1.00000 8 9.7 59 5 21  
## 22 11.00000 320 16.6 73 5 22  
## 23 4.00000 25 9.7 61 5 23  
## 24 32.00000 92 12.0 61 5 24  
## 25 42.12931 66 16.6 57 5 25  
## 26 42.12931 266 14.9 58 5 26  
## 27 42.12931 NA 8.0 57 5 27  
## 28 23.00000 13 12.0 67 5 28  
## 29 45.00000 252 14.9 81 5 29  
## 30 115.00000 223 5.7 79 5 30  
## 31 37.00000 279 7.4 76 5 31  
## 32 42.12931 286 8.6 78 6 1  
## 33 42.12931 287 9.7 74 6 2  
## 34 42.12931 242 16.1 67 6 3  
## 35 42.12931 186 9.2 84 6 4  
## 36 42.12931 220 8.6 85 6 5  
## 37 42.12931 264 14.3 79 6 6  
## 38 29.00000 127 9.7 82 6 7  
## 39 42.12931 273 6.9 87 6 8  
## 40 71.00000 291 13.8 90 6 9  
## 41 39.00000 323 11.5 87 6 10  
## 42 42.12931 259 10.9 93 6 11  
## 43 42.12931 250 9.2 92 6 12  
## 44 23.00000 148 8.0 82 6 13  
## 45 42.12931 332 13.8 80 6 14  
## 46 42.12931 322 11.5 79 6 15  
## 47 21.00000 191 14.9 77 6 16  
## 48 37.00000 284 20.7 72 6 17  
## 49 20.00000 37 9.2 65 6 18  
## 50 12.00000 120 11.5 73 6 19  
## 51 13.00000 137 10.3 76 6 20  
## 52 42.12931 150 6.3 77 6 21  
## 53 42.12931 59 1.7 76 6 22  
## 54 42.12931 91 4.6 76 6 23  
## 55 42.12931 250 6.3 76 6 24  
## 56 42.12931 135 8.0 75 6 25  
## 57 42.12931 127 8.0 78 6 26  
## 58 42.12931 47 10.3 73 6 27  
## 59 42.12931 98 11.5 80 6 28  
## 60 42.12931 31 14.9 77 6 29  
## 61 42.12931 138 8.0 83 6 30  
## 62 135.00000 269 4.1 84 7 1  
## 63 49.00000 248 9.2 85 7 2  
## 64 32.00000 236 9.2 81 7 3  
## 65 42.12931 101 10.9 84 7 4  
## 66 64.00000 175 4.6 83 7 5  
## 67 40.00000 314 10.9 83 7 6  
## 68 77.00000 276 5.1 88 7 7  
## 69 97.00000 267 6.3 92 7 8  
## 70 97.00000 272 5.7 92 7 9  
## 71 85.00000 175 7.4 89 7 10  
## 72 42.12931 139 8.6 82 7 11  
## 73 10.00000 264 14.3 73 7 12  
## 74 27.00000 175 14.9 81 7 13  
## 75 42.12931 291 14.9 91 7 14  
## 76 7.00000 48 14.3 80 7 15  
## 77 48.00000 260 6.9 81 7 16  
## 78 35.00000 274 10.3 82 7 17  
## 79 61.00000 285 6.3 84 7 18  
## 80 79.00000 187 5.1 87 7 19  
## 81 63.00000 220 11.5 85 7 20  
## 82 16.00000 7 6.9 74 7 21  
## 83 42.12931 258 9.7 81 7 22  
## 84 42.12931 295 11.5 82 7 23  
## 85 80.00000 294 8.6 86 7 24  
## 86 108.00000 223 8.0 85 7 25  
## 87 20.00000 81 8.6 82 7 26  
## 88 52.00000 82 12.0 86 7 27  
## 89 82.00000 213 7.4 88 7 28  
## 90 50.00000 275 7.4 86 7 29  
## 91 64.00000 253 7.4 83 7 30  
## 92 59.00000 254 9.2 81 7 31  
## 93 39.00000 83 6.9 81 8 1  
## 94 9.00000 24 13.8 81 8 2  
## 95 16.00000 77 7.4 82 8 3  
## 96 78.00000 NA 6.9 86 8 4  
## 97 35.00000 NA 7.4 85 8 5  
## 98 66.00000 NA 4.6 87 8 6  
## 99 122.00000 255 4.0 89 8 7  
## 100 89.00000 229 10.3 90 8 8  
## 101 110.00000 207 8.0 90 8 9  
## 102 42.12931 222 8.6 92 8 10  
## 103 42.12931 137 11.5 86 8 11  
## 104 44.00000 192 11.5 86 8 12  
## 105 28.00000 273 11.5 82 8 13  
## 106 65.00000 157 9.7 80 8 14  
## 107 42.12931 64 11.5 79 8 15  
## 108 22.00000 71 10.3 77 8 16  
## 109 59.00000 51 6.3 79 8 17  
## 110 23.00000 115 7.4 76 8 18  
## 111 31.00000 244 10.9 78 8 19  
## 112 44.00000 190 10.3 78 8 20  
## 113 21.00000 259 15.5 77 8 21  
## 114 9.00000 36 14.3 72 8 22  
## 115 42.12931 255 12.6 75 8 23  
## 116 45.00000 212 9.7 79 8 24  
## 117 168.00000 238 3.4 81 8 25  
## 118 73.00000 215 8.0 86 8 26  
## 119 42.12931 153 5.7 88 8 27  
## 120 76.00000 203 9.7 97 8 28  
## 121 118.00000 225 2.3 94 8 29  
## 122 84.00000 237 6.3 96 8 30  
## 123 85.00000 188 6.3 94 8 31  
## 124 96.00000 167 6.9 91 9 1  
## 125 78.00000 197 5.1 92 9 2  
## 126 73.00000 183 2.8 93 9 3  
## 127 91.00000 189 4.6 93 9 4  
## 128 47.00000 95 7.4 87 9 5  
## 129 32.00000 92 15.5 84 9 6  
## 130 20.00000 252 10.9 80 9 7  
## 131 23.00000 220 10.3 78 9 8  
## 132 21.00000 230 10.9 75 9 9  
## 133 24.00000 259 9.7 73 9 10  
## 134 44.00000 236 14.9 81 9 11  
## 135 21.00000 259 15.5 76 9 12  
## 136 28.00000 238 6.3 77 9 13  
## 137 9.00000 24 10.9 71 9 14  
## 138 13.00000 112 11.5 71 9 15  
## 139 46.00000 237 6.9 78 9 16  
## 140 18.00000 224 13.8 67 9 17  
## 141 13.00000 27 10.3 76 9 18  
## 142 24.00000 238 10.3 68 9 19  
## 143 16.00000 201 8.0 82 9 20  
## 144 13.00000 238 12.6 64 9 21  
## 145 23.00000 14 9.2 71 9 22  
## 146 36.00000 139 10.3 81 9 23  
## 147 7.00000 49 10.3 69 9 24  
## 148 14.00000 20 16.6 63 9 25  
## 149 30.00000 193 6.9 70 9 26  
## 150 42.12931 145 13.2 77 9 27  
## 151 14.00000 191 14.3 75 9 28  
## 152 18.00000 131 8.0 76 9 29  
## 153 20.00000 223 11.5 68 9 30

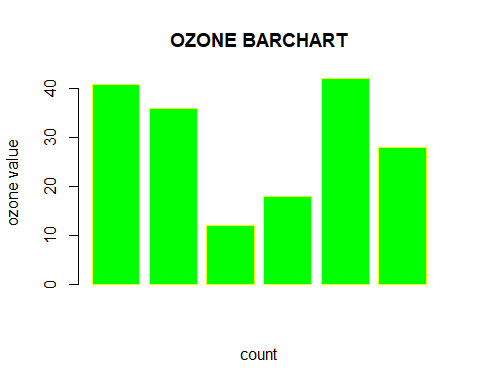
## Ozone Solar.R Wind Temp Month Day  
## 1 41.00000 190.0000 7.4 67 5 1  
## 2 36.00000 118.0000 8.0 72 5 2  
## 3 12.00000 149.0000 12.6 74 5 3  
## 4 18.00000 313.0000 11.5 62 5 4  
## 5 42.12931 185.9315 14.3 56 5 5  
## 6 28.00000 185.9315 14.9 66 5 6  
## 7 23.00000 299.0000 8.6 65 5 7  
## 8 19.00000 99.0000 13.8 59 5 8  
## 9 8.00000 19.0000 20.1 61 5 9  
## 10 42.12931 194.0000 8.6 69 5 10  
## 11 7.00000 185.9315 6.9 74 5 11  
## 12 16.00000 256.0000 9.7 69 5 12  
## 13 11.00000 290.0000 9.2 66 5 13  
## 14 14.00000 274.0000 10.9 68 5 14  
## 15 18.00000 65.0000 13.2 58 5 15  
## 16 14.00000 334.0000 11.5 64 5 16  
## 17 34.00000 307.0000 12.0 66 5 17  
## 18 6.00000 78.0000 18.4 57 5 18  
## 19 30.00000 322.0000 11.5 68 5 19  
## 20 11.00000 44.0000 9.7 62 5 20  
## 21 1.00000 8.0000 9.7 59 5 21  
## 22 11.00000 320.0000 16.6 73 5 22  
## 23 4.00000 25.0000 9.7 61 5 23  
## 24 32.00000 92.0000 12.0 61 5 24  
## 25 42.12931 66.0000 16.6 57 5 25  
## 26 42.12931 266.0000 14.9 58 5 26  
## 27 42.12931 185.9315 8.0 57 5 27  
## 28 23.00000 13.0000 12.0 67 5 28  
## 29 45.00000 252.0000 14.9 81 5 29  
## 30 115.00000 223.0000 5.7 79 5 30  
## 31 37.00000 279.0000 7.4 76 5 31  
## 32 42.12931 286.0000 8.6 78 6 1  
## 33 42.12931 287.0000 9.7 74 6 2  
## 34 42.12931 242.0000 16.1 67 6 3  
## 35 42.12931 186.0000 9.2 84 6 4  
## 36 42.12931 220.0000 8.6 85 6 5  
## 37 42.12931 264.0000 14.3 79 6 6  
## 38 29.00000 127.0000 9.7 82 6 7  
## 39 42.12931 273.0000 6.9 87 6 8  
## 40 71.00000 291.0000 13.8 90 6 9  
## 41 39.00000 323.0000 11.5 87 6 10  
## 42 42.12931 259.0000 10.9 93 6 11  
## 43 42.12931 250.0000 9.2 92 6 12  
## 44 23.00000 148.0000 8.0 82 6 13  
## 45 42.12931 332.0000 13.8 80 6 14  
## 46 42.12931 322.0000 11.5 79 6 15  
## 47 21.00000 191.0000 14.9 77 6 16  
## 48 37.00000 284.0000 20.7 72 6 17  
## 49 20.00000 37.0000 9.2 65 6 18  
## 50 12.00000 120.0000 11.5 73 6 19  
## 51 13.00000 137.0000 10.3 76 6 20  
## 52 42.12931 150.0000 6.3 77 6 21  
## 53 42.12931 59.0000 1.7 76 6 22  
## 54 42.12931 91.0000 4.6 76 6 23  
## 55 42.12931 250.0000 6.3 76 6 24  
## 56 42.12931 135.0000 8.0 75 6 25  
## 57 42.12931 127.0000 8.0 78 6 26  
## 58 42.12931 47.0000 10.3 73 6 27  
## 59 42.12931 98.0000 11.5 80 6 28  
## 60 42.12931 31.0000 14.9 77 6 29  
## 61 42.12931 138.0000 8.0 83 6 30  
## 62 135.00000 269.0000 4.1 84 7 1  
## 63 49.00000 248.0000 9.2 85 7 2  
## 64 32.00000 236.0000 9.2 81 7 3  
## 65 42.12931 101.0000 10.9 84 7 4  
## 66 64.00000 175.0000 4.6 83 7 5  
## 67 40.00000 314.0000 10.9 83 7 6  
## 68 77.00000 276.0000 5.1 88 7 7  
## 69 97.00000 267.0000 6.3 92 7 8  
## 70 97.00000 272.0000 5.7 92 7 9  
## 71 85.00000 175.0000 7.4 89 7 10  
## 72 42.12931 139.0000 8.6 82 7 11  
## 73 10.00000 264.0000 14.3 73 7 12  
## 74 27.00000 175.0000 14.9 81 7 13  
## 75 42.12931 291.0000 14.9 91 7 14  
## 76 7.00000 48.0000 14.3 80 7 15  
## 77 48.00000 260.0000 6.9 81 7 16  
## 78 35.00000 274.0000 10.3 82 7 17  
## 79 61.00000 285.0000 6.3 84 7 18  
## 80 79.00000 187.0000 5.1 87 7 19  
## 81 63.00000 220.0000 11.5 85 7 20  
## 82 16.00000 7.0000 6.9 74 7 21  
## 83 42.12931 258.0000 9.7 81 7 22  
## 84 42.12931 295.0000 11.5 82 7 23  
## 85 80.00000 294.0000 8.6 86 7 24  
## 86 108.00000 223.0000 8.0 85 7 25  
## 87 20.00000 81.0000 8.6 82 7 26  
## 88 52.00000 82.0000 12.0 86 7 27  
## 89 82.00000 213.0000 7.4 88 7 28  
## 90 50.00000 275.0000 7.4 86 7 29  
## 91 64.00000 253.0000 7.4 83 7 30  
## 92 59.00000 254.0000 9.2 81 7 31  
## 93 39.00000 83.0000 6.9 81 8 1  
## 94 9.00000 24.0000 13.8 81 8 2  
## 95 16.00000 77.0000 7.4 82 8 3  
## 96 78.00000 185.9315 6.9 86 8 4  
## 97 35.00000 185.9315 7.4 85 8 5  
## 98 66.00000 185.9315 4.6 87 8 6  
## 99 122.00000 255.0000 4.0 89 8 7  
## 100 89.00000 229.0000 10.3 90 8 8  
## 101 110.00000 207.0000 8.0 90 8 9  
## 102 42.12931 222.0000 8.6 92 8 10  
## 103 42.12931 137.0000 11.5 86 8 11  
## 104 44.00000 192.0000 11.5 86 8 12  
## 105 28.00000 273.0000 11.5 82 8 13  
## 106 65.00000 157.0000 9.7 80 8 14  
## 107 42.12931 64.0000 11.5 79 8 15  
## 108 22.00000 71.0000 10.3 77 8 16  
## 109 59.00000 51.0000 6.3 79 8 17  
## 110 23.00000 115.0000 7.4 76 8 18  
## 111 31.00000 244.0000 10.9 78 8 19  
## 112 44.00000 190.0000 10.3 78 8 20  
## 113 21.00000 259.0000 15.5 77 8 21  
## 114 9.00000 36.0000 14.3 72 8 22  
## 115 42.12931 255.0000 12.6 75 8 23  
## 116 45.00000 212.0000 9.7 79 8 24  
## 117 168.00000 238.0000 3.4 81 8 25  
## 118 73.00000 215.0000 8.0 86 8 26  
## 119 42.12931 153.0000 5.7 88 8 27  
## 120 76.00000 203.0000 9.7 97 8 28  
## 121 118.00000 225.0000 2.3 94 8 29  
## 122 84.00000 237.0000 6.3 96 8 30  
## 123 85.00000 188.0000 6.3 94 8 31  
## 124 96.00000 167.0000 6.9 91 9 1  
## 125 78.00000 197.0000 5.1 92 9 2  
## 126 73.00000 183.0000 2.8 93 9 3  
## 127 91.00000 189.0000 4.6 93 9 4  
## 128 47.00000 95.0000 7.4 87 9 5  
## 129 32.00000 92.0000 15.5 84 9 6  
## 130 20.00000 252.0000 10.9 80 9 7  
## 131 23.00000 220.0000 10.3 78 9 8  
## 132 21.00000 230.0000 10.9 75 9 9  
## 133 24.00000 259.0000 9.7 73 9 10  
## 134 44.00000 236.0000 14.9 81 9 11  
## 135 21.00000 259.0000 15.5 76 9 12  
## 136 28.00000 238.0000 6.3 77 9 13  
## 137 9.00000 24.0000 10.9 71 9 14  
## 138 13.00000 112.0000 11.5 71 9 15  
## 139 46.00000 237.0000 6.9 78 9 16  
## 140 18.00000 224.0000 13.8 67 9 17  
## 141 13.00000 27.0000 10.3 76 9 18  
## 142 24.00000 238.0000 10.3 68 9 19  
## 143 16.00000 201.0000 8.0 82 9 20  
## 144 13.00000 238.0000 12.6 64 9 21  
## 145 23.00000 14.0000 9.2 71 9 22  
## 146 36.00000 139.0000 10.3 81 9 23  
## 147 7.00000 49.0000 10.3 69 9 24  
## 148 14.00000 20.0000 16.6 63 9 25  
## 149 30.00000 193.0000 6.9 70 9 26  
## 150 42.12931 145.0000 13.2 77 9 27  
## 151 14.00000 191.0000 14.3 75 9 28  
## 152 18.00000 131.0000 8.0 76 9 29  
## 153 20.00000 223.0000 11.5 68 9 30

## Ozone Solar.R Wind Temp Month Day  
## 1 41.0 190.0000 7.4 67 5 1  
## 2 36.0 118.0000 8.0 72 5 2  
## 3 12.0 149.0000 12.6 74 5 3  
## 4 18.0 313.0000 11.5 62 5 4  
## 5 42.1 185.9315 14.3 56 5 5  
## 6 28.0 185.9315 14.9 66 5 6  
## 7 23.0 299.0000 8.6 65 5 7  
## 8 19.0 99.0000 13.8 59 5 8  
## 9 8.0 19.0000 20.1 61 5 9  
## 10 42.1 194.0000 8.6 69 5 10  
## 11 7.0 185.9315 6.9 74 5 11  
## 12 16.0 256.0000 9.7 69 5 12  
## 13 11.0 290.0000 9.2 66 5 13  
## 14 14.0 274.0000 10.9 68 5 14  
## 15 18.0 65.0000 13.2 58 5 15  
## 16 14.0 334.0000 11.5 64 5 16  
## 17 34.0 307.0000 12.0 66 5 17  
## 18 6.0 78.0000 18.4 57 5 18  
## 19 30.0 322.0000 11.5 68 5 19  
## 20 11.0 44.0000 9.7 62 5 20  
## 21 1.0 8.0000 9.7 59 5 21  
## 22 11.0 320.0000 16.6 73 5 22  
## 23 4.0 25.0000 9.7 61 5 23  
## 24 32.0 92.0000 12.0 61 5 24  
## 25 42.1 66.0000 16.6 57 5 25  
## 26 42.1 266.0000 14.9 58 5 26  
## 27 42.1 185.9315 8.0 57 5 27  
## 28 23.0 13.0000 12.0 67 5 28  
## 29 45.0 252.0000 14.9 81 5 29  
## 30 115.0 223.0000 5.7 79 5 30  
## 31 37.0 279.0000 7.4 76 5 31  
## 32 42.1 286.0000 8.6 78 6 1  
## 33 42.1 287.0000 9.7 74 6 2  
## 34 42.1 242.0000 16.1 67 6 3  
## 35 42.1 186.0000 9.2 84 6 4  
## 36 42.1 220.0000 8.6 85 6 5  
## 37 42.1 264.0000 14.3 79 6 6  
## 38 29.0 127.0000 9.7 82 6 7  
## 39 42.1 273.0000 6.9 87 6 8  
## 40 71.0 291.0000 13.8 90 6 9  
## 41 39.0 323.0000 11.5 87 6 10  
## 42 42.1 259.0000 10.9 93 6 11  
## 43 42.1 250.0000 9.2 92 6 12  
## 44 23.0 148.0000 8.0 82 6 13  
## 45 42.1 332.0000 13.8 80 6 14  
## 46 42.1 322.0000 11.5 79 6 15  
## 47 21.0 191.0000 14.9 77 6 16  
## 48 37.0 284.0000 20.7 72 6 17  
## 49 20.0 37.0000 9.2 65 6 18  
## 50 12.0 120.0000 11.5 73 6 19  
## 51 13.0 137.0000 10.3 76 6 20  
## 52 42.1 150.0000 6.3 77 6 21  
## 53 42.1 59.0000 1.7 76 6 22  
## 54 42.1 91.0000 4.6 76 6 23  
## 55 42.1 250.0000 6.3 76 6 24  
## 56 42.1 135.0000 8.0 75 6 25  
## 57 42.1 127.0000 8.0 78 6 26  
## 58 42.1 47.0000 10.3 73 6 27  
## 59 42.1 98.0000 11.5 80 6 28  
## 60 42.1 31.0000 14.9 77 6 29  
## 61 42.1 138.0000 8.0 83 6 30  
## 62 135.0 269.0000 4.1 84 7 1  
## 63 49.0 248.0000 9.2 85 7 2  
## 64 32.0 236.0000 9.2 81 7 3  
## 65 42.1 101.0000 10.9 84 7 4  
## 66 64.0 175.0000 4.6 83 7 5  
## 67 40.0 314.0000 10.9 83 7 6  
## 68 77.0 276.0000 5.1 88 7 7  
## 69 97.0 267.0000 6.3 92 7 8  
## 70 97.0 272.0000 5.7 92 7 9  
## 71 85.0 175.0000 7.4 89 7 10  
## 72 42.1 139.0000 8.6 82 7 11  
## 73 10.0 264.0000 14.3 73 7 12  
## 74 27.0 175.0000 14.9 81 7 13  
## 75 42.1 291.0000 14.9 91 7 14  
## 76 7.0 48.0000 14.3 80 7 15  
## 77 48.0 260.0000 6.9 81 7 16  
## 78 35.0 274.0000 10.3 82 7 17  
## 79 61.0 285.0000 6.3 84 7 18  
## 80 79.0 187.0000 5.1 87 7 19  
## 81 63.0 220.0000 11.5 85 7 20  
## 82 16.0 7.0000 6.9 74 7 21  
## 83 42.1 258.0000 9.7 81 7 22  
## 84 42.1 295.0000 11.5 82 7 23  
## 85 80.0 294.0000 8.6 86 7 24  
## 86 108.0 223.0000 8.0 85 7 25  
## 87 20.0 81.0000 8.6 82 7 26  
## 88 52.0 82.0000 12.0 86 7 27  
## 89 82.0 213.0000 7.4 88 7 28  
## 90 50.0 275.0000 7.4 86 7 29  
## 91 64.0 253.0000 7.4 83 7 30  
## 92 59.0 254.0000 9.2 81 7 31  
## 93 39.0 83.0000 6.9 81 8 1  
## 94 9.0 24.0000 13.8 81 8 2  
## 95 16.0 77.0000 7.4 82 8 3  
## 96 78.0 185.9315 6.9 86 8 4  
## 97 35.0 185.9315 7.4 85 8 5  
## 98 66.0 185.9315 4.6 87 8 6  
## 99 122.0 255.0000 4.0 89 8 7  
## 100 89.0 229.0000 10.3 90 8 8  
## 101 110.0 207.0000 8.0 90 8 9  
## 102 42.1 222.0000 8.6 92 8 10  
## 103 42.1 137.0000 11.5 86 8 11  
## 104 44.0 192.0000 11.5 86 8 12  
## 105 28.0 273.0000 11.5 82 8 13  
## 106 65.0 157.0000 9.7 80 8 14  
## 107 42.1 64.0000 11.5 79 8 15  
## 108 22.0 71.0000 10.3 77 8 16  
## 109 59.0 51.0000 6.3 79 8 17  
## 110 23.0 115.0000 7.4 76 8 18  
## 111 31.0 244.0000 10.9 78 8 19  
## 112 44.0 190.0000 10.3 78 8 20  
## 113 21.0 259.0000 15.5 77 8 21  
## 114 9.0 36.0000 14.3 72 8 22  
## 115 42.1 255.0000 12.6 75 8 23  
## 116 45.0 212.0000 9.7 79 8 24  
## 117 168.0 238.0000 3.4 81 8 25  
## 118 73.0 215.0000 8.0 86 8 26  
## 119 42.1 153.0000 5.7 88 8 27  
## 120 76.0 203.0000 9.7 97 8 28  
## 121 118.0 225.0000 2.3 94 8 29  
## 122 84.0 237.0000 6.3 96 8 30  
## 123 85.0 188.0000 6.3 94 8 31  
## 124 96.0 167.0000 6.9 91 9 1  
## 125 78.0 197.0000 5.1 92 9 2  
## 126 73.0 183.0000 2.8 93 9 3  
## 127 91.0 189.0000 4.6 93 9 4  
## 128 47.0 95.0000 7.4 87 9 5  
## 129 32.0 92.0000 15.5 84 9 6  
## 130 20.0 252.0000 10.9 80 9 7  
## 131 23.0 220.0000 10.3 78 9 8  
## 132 21.0 230.0000 10.9 75 9 9  
## 133 24.0 259.0000 9.7 73 9 10  
## 134 44.0 236.0000 14.9 81 9 11  
## 135 21.0 259.0000 15.5 76 9 12  
## 136 28.0 238.0000 6.3 77 9 13  
## 137 9.0 24.0000 10.9 71 9 14  
## 138 13.0 112.0000 11.5 71 9 15  
## 139 46.0 237.0000 6.9 78 9 16  
## 140 18.0 224.0000 13.8 67 9 17  
## 141 13.0 27.0000 10.3 76 9 18  
## 142 24.0 238.0000 10.3 68 9 19  
## 143 16.0 201.0000 8.0 82 9 20  
## 144 13.0 238.0000 12.6 64 9 21  
## 145 23.0 14.0000 9.2 71 9 22  
## 146 36.0 139.0000 10.3 81 9 23  
## 147 7.0 49.0000 10.3 69 9 24  
## 148 14.0 20.0000 16.6 63 9 25  
## 149 30.0 193.0000 6.9 70 9 26  
## 150 42.1 145.0000 13.2 77 9 27  
## 151 14.0 191.0000 14.3 75 9 28  
## 152 18.0 131.0000 8.0 76 9 29  
## 153 20.0 223.0000 11.5 68 9 30

## Ozone Solar.R Wind Temp Month Day  
## 1 41.0 190.0 7.4 67 5 1  
## 2 36.0 118.0 8.0 72 5 2  
## 3 12.0 149.0 12.6 74 5 3  
## 4 18.0 313.0 11.5 62 5 4  
## 5 42.1 185.9 14.3 56 5 5  
## 6 28.0 185.9 14.9 66 5 6  
## 7 23.0 299.0 8.6 65 5 7  
## 8 19.0 99.0 13.8 59 5 8  
## 9 8.0 19.0 20.1 61 5 9  
## 10 42.1 194.0 8.6 69 5 10  
## 11 7.0 185.9 6.9 74 5 11  
## 12 16.0 256.0 9.7 69 5 12  
## 13 11.0 290.0 9.2 66 5 13  
## 14 14.0 274.0 10.9 68 5 14  
## 15 18.0 65.0 13.2 58 5 15  
## 16 14.0 334.0 11.5 64 5 16  
## 17 34.0 307.0 12.0 66 5 17  
## 18 6.0 78.0 18.4 57 5 18  
## 19 30.0 322.0 11.5 68 5 19  
## 20 11.0 44.0 9.7 62 5 20  
## 21 1.0 8.0 9.7 59 5 21  
## 22 11.0 320.0 16.6 73 5 22  
## 23 4.0 25.0 9.7 61 5 23  
## 24 32.0 92.0 12.0 61 5 24  
## 25 42.1 66.0 16.6 57 5 25  
## 26 42.1 266.0 14.9 58 5 26  
## 27 42.1 185.9 8.0 57 5 27  
## 28 23.0 13.0 12.0 67 5 28  
## 29 45.0 252.0 14.9 81 5 29  
## 30 115.0 223.0 5.7 79 5 30  
## 31 37.0 279.0 7.4 76 5 31  
## 32 42.1 286.0 8.6 78 6 1  
## 33 42.1 287.0 9.7 74 6 2  
## 34 42.1 242.0 16.1 67 6 3  
## 35 42.1 186.0 9.2 84 6 4  
## 36 42.1 220.0 8.6 85 6 5  
## 37 42.1 264.0 14.3 79 6 6  
## 38 29.0 127.0 9.7 82 6 7  
## 39 42.1 273.0 6.9 87 6 8  
## 40 71.0 291.0 13.8 90 6 9  
## 41 39.0 323.0 11.5 87 6 10  
## 42 42.1 259.0 10.9 93 6 11  
## 43 42.1 250.0 9.2 92 6 12  
## 44 23.0 148.0 8.0 82 6 13  
## 45 42.1 332.0 13.8 80 6 14  
## 46 42.1 322.0 11.5 79 6 15  
## 47 21.0 191.0 14.9 77 6 16  
## 48 37.0 284.0 20.7 72 6 17  
## 49 20.0 37.0 9.2 65 6 18  
## 50 12.0 120.0 11.5 73 6 19  
## 51 13.0 137.0 10.3 76 6 20  
## 52 42.1 150.0 6.3 77 6 21  
## 53 42.1 59.0 1.7 76 6 22  
## 54 42.1 91.0 4.6 76 6 23  
## 55 42.1 250.0 6.3 76 6 24  
## 56 42.1 135.0 8.0 75 6 25  
## 57 42.1 127.0 8.0 78 6 26  
## 58 42.1 47.0 10.3 73 6 27  
## 59 42.1 98.0 11.5 80 6 28  
## 60 42.1 31.0 14.9 77 6 29  
## 61 42.1 138.0 8.0 83 6 30  
## 62 135.0 269.0 4.1 84 7 1  
## 63 49.0 248.0 9.2 85 7 2  
## 64 32.0 236.0 9.2 81 7 3  
## 65 42.1 101.0 10.9 84 7 4  
## 66 64.0 175.0 4.6 83 7 5  
## 67 40.0 314.0 10.9 83 7 6  
## 68 77.0 276.0 5.1 88 7 7  
## 69 97.0 267.0 6.3 92 7 8  
## 70 97.0 272.0 5.7 92 7 9  
## 71 85.0 175.0 7.4 89 7 10  
## 72 42.1 139.0 8.6 82 7 11  
## 73 10.0 264.0 14.3 73 7 12  
## 74 27.0 175.0 14.9 81 7 13  
## 75 42.1 291.0 14.9 91 7 14  
## 76 7.0 48.0 14.3 80 7 15  
## 77 48.0 260.0 6.9 81 7 16  
## 78 35.0 274.0 10.3 82 7 17  
## 79 61.0 285.0 6.3 84 7 18  
## 80 79.0 187.0 5.1 87 7 19  
## 81 63.0 220.0 11.5 85 7 20  
## 82 16.0 7.0 6.9 74 7 21  
## 83 42.1 258.0 9.7 81 7 22  
## 84 42.1 295.0 11.5 82 7 23  
## 85 80.0 294.0 8.6 86 7 24  
## 86 108.0 223.0 8.0 85 7 25  
## 87 20.0 81.0 8.6 82 7 26  
## 88 52.0 82.0 12.0 86 7 27  
## 89 82.0 213.0 7.4 88 7 28  
## 90 50.0 275.0 7.4 86 7 29  
## 91 64.0 253.0 7.4 83 7 30  
## 92 59.0 254.0 9.2 81 7 31  
## 93 39.0 83.0 6.9 81 8 1  
## 94 9.0 24.0 13.8 81 8 2  
## 95 16.0 77.0 7.4 82 8 3  
## 96 78.0 185.9 6.9 86 8 4  
## 97 35.0 185.9 7.4 85 8 5  
## 98 66.0 185.9 4.6 87 8 6  
## 99 122.0 255.0 4.0 89 8 7  
## 100 89.0 229.0 10.3 90 8 8  
## 101 110.0 207.0 8.0 90 8 9  
## 102 42.1 222.0 8.6 92 8 10  
## 103 42.1 137.0 11.5 86 8 11  
## 104 44.0 192.0 11.5 86 8 12  
## 105 28.0 273.0 11.5 82 8 13  
## 106 65.0 157.0 9.7 80 8 14  
## 107 42.1 64.0 11.5 79 8 15  
## 108 22.0 71.0 10.3 77 8 16  
## 109 59.0 51.0 6.3 79 8 17  
## 110 23.0 115.0 7.4 76 8 18  
## 111 31.0 244.0 10.9 78 8 19  
## 112 44.0 190.0 10.3 78 8 20  
## 113 21.0 259.0 15.5 77 8 21  
## 114 9.0 36.0 14.3 72 8 22  
## 115 42.1 255.0 12.6 75 8 23  
## 116 45.0 212.0 9.7 79 8 24  
## 117 168.0 238.0 3.4 81 8 25  
## 118 73.0 215.0 8.0 86 8 26  
## 119 42.1 153.0 5.7 88 8 27  
## 120 76.0 203.0 9.7 97 8 28  
## 121 118.0 225.0 2.3 94 8 29  
## 122 84.0 237.0 6.3 96 8 30  
## 123 85.0 188.0 6.3 94 8 31  
## 124 96.0 167.0 6.9 91 9 1  
## 125 78.0 197.0 5.1 92 9 2  
## 126 73.0 183.0 2.8 93 9 3  
## 127 91.0 189.0 4.6 93 9 4  
## 128 47.0 95.0 7.4 87 9 5  
## 129 32.0 92.0 15.5 84 9 6  
## 130 20.0 252.0 10.9 80 9 7  
## 131 23.0 220.0 10.3 78 9 8  
## 132 21.0 230.0 10.9 75 9 9  
## 133 24.0 259.0 9.7 73 9 10  
## 134 44.0 236.0 14.9 81 9 11  
## 135 21.0 259.0 15.5 76 9 12  
## 136 28.0 238.0 6.3 77 9 13  
## 137 9.0 24.0 10.9 71 9 14  
## 138 13.0 112.0 11.5 71 9 15  
## 139 46.0 237.0 6.9 78 9 16  
## 140 18.0 224.0 13.8 67 9 17  
## 141 13.0 27.0 10.3 76 9 18  
## 142 24.0 238.0 10.3 68 9 19  
## 143 16.0 201.0 8.0 82 9 20  
## 144 13.0 238.0 12.6 64 9 21  
## 145 23.0 14.0 9.2 71 9 22  
## 146 36.0 139.0 10.3 81 9 23  
## 147 7.0 49.0 10.3 69 9 24  
## 148 14.0 20.0 16.6 63 9 25  
## 149 30.0 193.0 6.9 70 9 26  
## 150 42.1 145.0 13.2 77 9 27  
## 151 14.0 191.0 14.3 75 9 28  
## 152 18.0 131.0 8.0 76 9 29  
## 153 20.0 223.0 11.5 68 9 30

**Plots** #1:Barchart

## Ozone Solar.R Wind Temp Month Day  
## 1 41.0 190.0 7.4 67 5 1  
## 2 36.0 118.0 8.0 72 5 2  
## 3 12.0 149.0 12.6 74 5 3  
## 4 18.0 313.0 11.5 62 5 4  
## 5 42.1 185.9 14.3 56 5 5  
## 6 28.0 185.9 14.9 66 5 6



#Adding legend to chart?

#code eg. #legend(“topleft”,regions,cex=1.3,fill=(“green”,“pink”))

#2:**Pie chart**

#code

#pie(x,labels,radius,main,col,clockwise)

#x-vector that contains numeric value used in pie chart

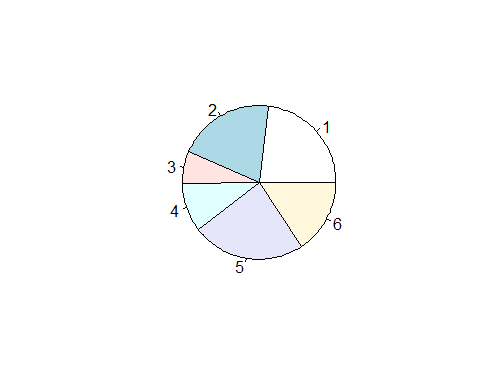
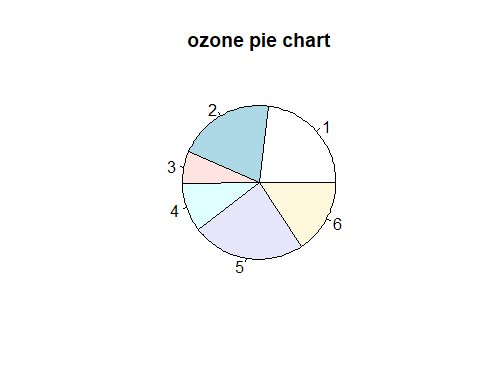
#labels-used to give description to slices

#radius-?

#Main-title

#Cot-colour of the palette

#clockwise-logical value that indicates the clockwise or anti-clockwise direction in which slices are drawn

 #Adding title to pie chart 

#3:**Boxplot** #measure of how data is distributed in a data set

#boxplot(x,data,notch,varwidth,names,main)

#x-vector or formula

#data-data frame

#Notch-logical value set as true to draw a notch

#varwidth-logical value set as true to draw width of box same as sample size.

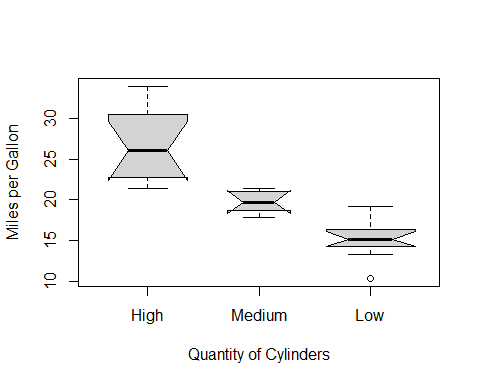
#names-is a group of labels that will be printed under each boxplot

#main-title

#Boxplot using Notch-helps find out how medians of different data groups match with each other.

#NB:Colour not applied below

## Warning in (function (z, notch = FALSE, width = NULL, varwidth = FALSE, : some  
## notches went outside hinges ('box'): maybe set notch=FALSE

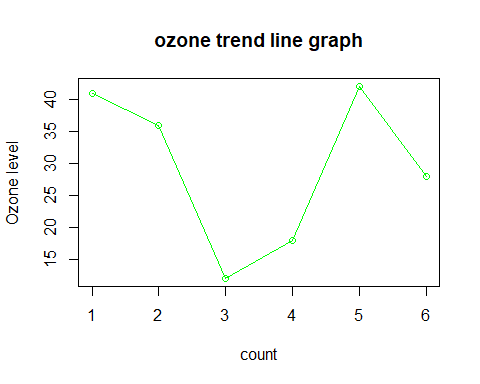


#4:**Line Graph** #Is a pictorial representation of information which changes over time.

#plot(v,type,col,xlb,ylab)

#v -vector containing numeric values

#type-this parameter takes only values ?l?to draw only line or?p? to draw the points and”o” to draw both point and line



#5:**Scatter plot**

#used to compare variables

#each point on the scatter plot defines value of two variables

#plot(x,y,main,xlab,ylab,xlim,ylim,axes)

#x- data set whose values are on the horizontal axis

#y-?

#main-?

#xlab-label of horizontal axis

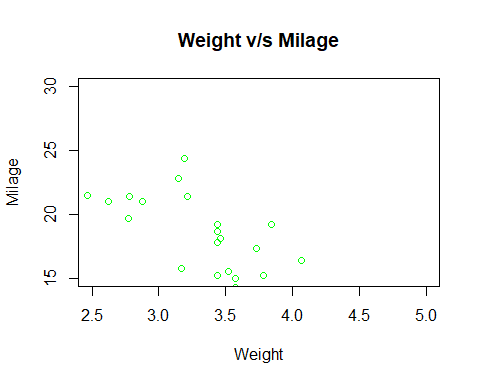
#ylab-?

#xlim-limit of x values which are used for plotting

#ylim-?

#axes-indicates if both axes should be drawn on the plot.

## wt mpg  
## Mazda RX4 2.620 21.0  
## Mazda RX4 Wag 2.875 21.0  
## Datsun 710 2.320 22.8  
## Hornet 4 Drive 3.215 21.4  
## Hornet Sportabout 3.440 18.7  
## Valiant 3.460 18.1  
## Duster 360 3.570 14.3  
## Merc 240D 3.190 24.4  
## Merc 230 3.150 22.8  
## Merc 280 3.440 19.2  
## Merc 280C 3.440 17.8  
## Merc 450SE 4.070 16.4  
## Merc 450SL 3.730 17.3  
## Merc 450SLC 3.780 15.2  
## Cadillac Fleetwood 5.250 10.4  
## Lincoln Continental 5.424 10.4  
## Chrysler Imperial 5.345 14.7  
## Fiat 128 2.200 32.4  
## Honda Civic 1.615 30.4  
## Toyota Corolla 1.835 33.9  
## Toyota Corona 2.465 21.5  
## Dodge Challenger 3.520 15.5  
## AMC Javelin 3.435 15.2  
## Camaro Z28 3.840 13.3  
## Pontiac Firebird 3.845 19.2  
## Fiat X1-9 1.935 27.3  
## Porsche 914-2 2.140 26.0  
## Lotus Europa 1.513 30.4  
## Ford Pantera L 3.170 15.8  
## Ferrari Dino 2.770 19.7  
## Maserati Bora 3.570 15.0  
## Volvo 142E 2.780 21.4



#6:**histogram**

#A histogram is a type of bar chart which shows frequency of values which are compared with a set of values range.

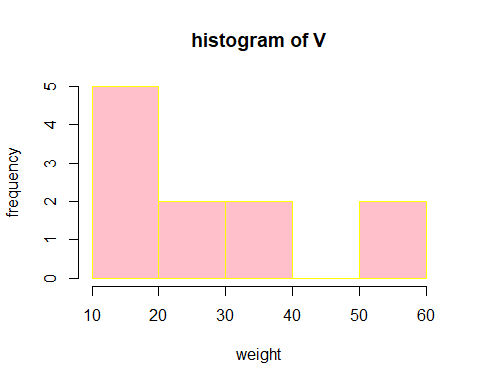
#Histogram is used for distibution whereas a barchart is used for comparing different entities

#hist(v,main,xlab,ylab,xlim,ylim,breaks,col,boarder)

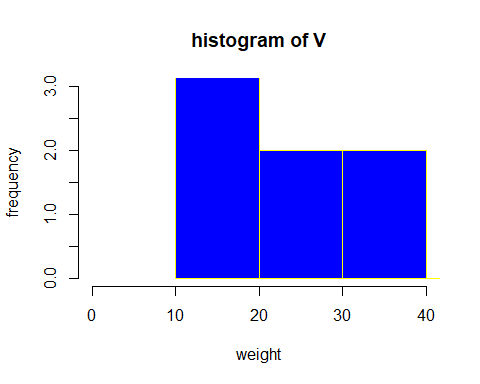
#v-vector with numeric values.

#Break-Used to mention the width of each bar.

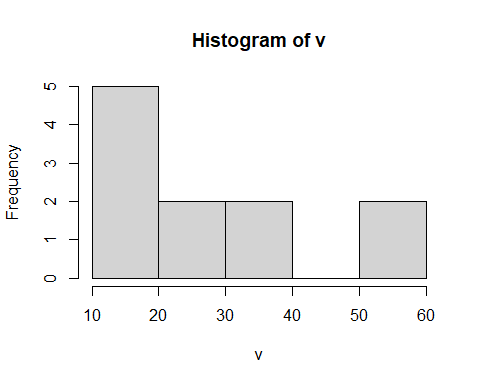
## [1] 12 24 16 38 21 13 55 17 39 10 60



#Using limits



#Finding return value of histogram



## $breaks  
## [1] 10 20 30 40 50 60  
##   
## $counts  
## [1] 5 2 2 0 2  
##   
## $density  
## [1] 0.04545455 0.01818182 0.01818182 0.00000000 0.01818182  
##   
## $mids  
## [1] 15 25 35 45 55  
##   
## $xname  
## [1] "v"  
##   
## $equidist  
## [1] TRUE  
##   
## attr(,"class")  
## [1] "histogram"

#ggplot syntax #ggplot(data=df,aes(x=?,y=?,group=1))+geom\_line(linetype=“dashed”)+geom\_point()