A1\_Predictive Analytics

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library(ISLR)

library(dplyr)

##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

library(glmnet)

## Loading required package: Matrix

## Loaded glmnet 4.1-8

library(caret)

## Loading required package: ggplot2

## Loading required package: lattice

data(Carseats)  
head(Carseats)

## Sales CompPrice Income Advertising Population Price ShelveLoc Age Education  
## 1 9.50 138 73 11 276 120 Bad 42 17  
## 2 11.22 111 48 16 260 83 Good 65 10  
## 3 10.06 113 35 10 269 80 Medium 59 12  
## 4 7.40 117 100 4 466 97 Medium 55 14  
## 5 4.15 141 64 3 340 128 Bad 38 13  
## 6 10.81 124 113 13 501 72 Bad 78 16  
## Urban US  
## 1 Yes Yes  
## 2 Yes Yes  
## 3 Yes Yes  
## 4 Yes Yes  
## 5 Yes No  
## 6 No Yes

library(dplyr)  
Carseats\_Filtered <- Carseats %>% select("Sales", "Price",  
"Advertising","Population","Age","Income","Education")  
Carseats\_Filtered

## Sales Price Advertising Population Age Income Education  
## 1 9.50 120 11 276 42 73 17  
## 2 11.22 83 16 260 65 48 10  
## 3 10.06 80 10 269 59 35 12  
## 4 7.40 97 4 466 55 100 14  
## 5 4.15 128 3 340 38 64 13  
## 6 10.81 72 13 501 78 113 16  
## 7 6.63 108 0 45 71 105 15  
## 8 11.85 120 15 425 67 81 10  
## 9 6.54 124 0 108 76 110 10  
## 10 4.69 124 0 131 76 113 17  
## 11 9.01 100 9 150 26 78 10  
## 12 11.96 94 4 503 50 94 13  
## 13 3.98 136 2 393 62 35 18  
## 14 10.96 86 11 29 53 28 18  
## 15 11.17 118 11 148 52 117 18  
## 16 8.71 144 5 400 76 95 18  
## 17 7.58 110 0 284 63 32 13  
## 18 12.29 131 13 251 52 74 10  
## 19 13.91 68 0 408 46 110 17  
## 20 8.73 121 16 58 69 76 12  
## 21 6.41 131 2 367 35 90 18  
## 22 12.13 109 12 239 62 29 18  
## 23 5.08 138 6 497 42 46 13  
## 24 5.87 109 0 292 79 31 10  
## 25 10.14 113 16 294 42 119 12  
## 26 14.90 82 0 176 54 32 11  
## 27 8.33 131 11 496 50 115 11  
## 28 5.27 107 0 19 64 118 17  
## 29 2.99 97 0 359 55 74 11  
## 30 7.81 102 15 226 58 99 17  
## 31 13.55 89 0 447 30 94 12  
## 32 8.25 131 16 241 44 58 18  
## 33 6.20 137 12 236 64 32 10  
## 34 8.77 128 13 317 50 38 16  
## 35 2.67 128 0 406 42 54 17  
## 36 11.07 96 11 29 44 84 17  
## 37 8.89 100 0 270 60 76 18  
## 38 4.95 110 5 412 54 41 10  
## 39 6.59 102 0 454 65 73 15  
## 40 3.24 138 0 144 38 60 10  
## 41 2.07 126 0 18 73 98 17  
## 42 7.96 124 0 403 58 53 16  
## 43 10.43 24 0 25 50 69 18  
## 44 4.12 134 11 16 59 42 13  
## 45 4.16 95 6 325 69 79 13  
## 46 4.56 135 0 168 44 63 12  
## 47 12.44 70 14 16 48 90 15  
## 48 4.38 108 0 173 55 98 16  
## 49 3.91 98 0 349 69 52 18  
## 50 10.61 149 0 51 32 93 17  
## 51 1.42 108 18 341 80 32 16  
## 52 4.42 108 0 150 75 90 16  
## 53 7.91 129 3 112 39 40 18  
## 54 6.92 119 13 39 61 64 17  
## 55 4.90 144 13 25 76 103 17  
## 56 6.85 154 5 60 61 81 18  
## 57 11.91 84 0 54 50 82 17  
## 58 0.91 117 0 22 75 91 11  
## 59 5.42 103 15 188 74 93 16  
## 60 5.21 114 4 148 80 71 13  
## 61 8.32 123 19 469 29 102 13  
## 62 7.32 107 0 358 26 32 13  
## 63 1.82 133 0 146 77 45 17  
## 64 8.47 101 10 170 61 88 13  
## 65 7.80 104 12 184 32 67 16  
## 66 4.90 128 0 197 55 26 13  
## 67 8.85 91 0 508 56 92 18  
## 68 9.01 115 14 152 47 61 16  
## 69 13.39 134 20 366 60 69 13  
## 70 7.99 99 0 339 65 59 12  
## 71 9.46 99 15 237 74 81 12  
## 72 6.50 150 16 148 58 51 17  
## 73 5.52 116 0 432 25 45 15  
## 74 12.61 104 10 54 31 90 11  
## 75 6.20 136 5 125 64 68 13  
## 76 8.55 92 23 480 36 111 16  
## 77 10.64 70 10 346 64 87 15  
## 78 7.70 89 12 44 67 71 18  
## 79 4.43 145 1 139 65 48 12  
## 80 9.14 90 0 286 41 67 13  
## 81 8.01 79 16 353 68 100 11  
## 82 7.52 128 0 237 70 72 13  
## 83 11.62 139 4 325 28 83 17  
## 84 4.42 94 7 468 56 36 11  
## 85 2.23 121 0 52 43 25 18  
## 86 8.47 112 0 304 49 103 13  
## 87 8.70 134 9 432 64 84 15  
## 88 11.70 126 7 272 54 67 16  
## 89 6.56 111 7 144 62 42 10  
## 90 7.95 119 3 493 45 66 16  
## 91 5.33 103 0 491 64 22 11  
## 92 4.81 107 11 267 80 46 15  
## 93 4.53 125 0 97 29 113 12  
## 94 8.86 104 0 67 55 30 17  
## 95 8.39 84 5 134 55 97 11  
## 96 5.58 148 10 237 59 25 13  
## 97 9.48 132 10 407 73 42 16  
## 98 7.45 129 5 287 33 82 16  
## 99 12.49 127 24 382 36 77 16  
## 100 4.88 107 3 220 56 47 16  
## 101 4.11 106 11 94 76 69 12  
## 102 6.20 118 0 89 34 93 18  
## 103 5.30 97 0 57 65 22 16  
## 104 5.07 96 0 334 78 91 17  
## 105 4.62 138 0 472 51 96 12  
## 106 5.55 97 8 398 61 100 11  
## 107 0.16 139 0 217 70 33 18  
## 108 8.55 108 0 104 60 107 12  
## 109 3.47 103 2 488 65 79 16  
## 110 8.98 90 0 217 60 65 17  
## 111 9.00 116 7 125 43 62 14  
## 112 6.62 151 12 272 43 118 14  
## 113 6.67 125 5 298 62 99 12  
## 114 6.01 127 11 335 33 29 12  
## 115 9.31 106 9 17 65 87 13  
## 116 8.54 129 0 95 42 35 13  
## 117 5.08 128 0 202 80 75 10  
## 118 8.80 119 0 507 41 53 12  
## 119 7.57 99 2 243 62 88 11  
## 120 7.37 128 8 137 64 94 12  
## 121 6.87 131 11 249 63 105 13  
## 122 11.67 87 10 380 28 89 10  
## 123 6.88 108 5 45 75 100 10  
## 124 8.19 155 0 125 29 103 15  
## 125 8.87 120 0 181 63 113 14  
## 126 9.34 49 0 181 43 78 15  
## 127 11.27 133 2 60 59 68 16  
## 128 6.52 116 3 192 51 48 14  
## 129 4.96 126 3 350 55 100 13  
## 130 4.47 147 7 279 40 120 10  
## 131 8.41 77 13 497 51 84 12  
## 132 6.50 94 3 208 77 69 16  
## 133 9.54 136 9 232 72 87 10  
## 134 7.62 97 2 265 62 98 12  
## 135 3.67 131 0 327 76 31 16  
## 136 6.44 120 14 384 36 94 18  
## 137 5.17 120 0 10 31 75 18  
## 138 6.52 118 0 436 80 42 11  
## 139 10.27 109 12 371 44 103 10  
## 140 12.30 94 10 310 30 62 13  
## 141 6.03 129 10 277 45 60 18  
## 142 6.53 131 0 331 28 42 15  
## 143 7.44 104 0 300 77 84 15  
## 144 0.53 159 7 36 28 88 17  
## 145 9.09 123 0 264 34 68 11  
## 146 8.77 117 11 27 47 63 17  
## 147 3.90 131 0 412 39 83 14  
## 148 10.51 119 9 402 41 54 16  
## 149 7.56 97 0 384 72 119 14  
## 150 11.48 87 13 140 56 120 11  
## 151 10.49 114 8 176 57 84 10  
## 152 10.77 103 17 407 75 58 17  
## 153 7.64 128 0 341 45 78 13  
## 154 5.93 150 7 488 25 36 17  
## 155 6.89 110 10 289 50 69 16  
## 156 7.71 69 0 59 65 72 16  
## 157 7.49 157 0 220 51 34 16  
## 158 10.21 90 8 249 48 58 13  
## 159 12.53 112 1 189 39 90 10  
## 160 9.32 70 0 372 30 60 18  
## 161 4.67 111 0 486 29 28 12  
## 162 2.93 160 5 81 67 21 12  
## 163 3.63 149 0 424 51 74 13  
## 164 5.68 106 0 40 39 64 17  
## 165 8.22 141 0 58 27 64 13  
## 166 0.37 191 7 100 27 58 15  
## 167 6.71 137 17 151 55 67 11  
## 168 6.71 93 0 216 60 73 13  
## 169 7.30 117 0 425 45 89 10  
## 170 11.48 77 15 492 73 41 18  
## 171 8.01 118 12 356 71 39 10  
## 172 12.49 55 12 416 75 106 15  
## 173 9.03 110 13 123 35 102 16  
## 174 6.38 128 5 207 66 91 18  
## 175 0.00 185 0 358 79 24 15  
## 176 7.54 122 0 38 25 89 12  
## 177 5.61 154 9 480 47 107 11  
## 178 10.48 94 0 148 27 72 17  
## 179 10.66 81 14 89 25 71 14  
## 180 7.78 116 3 70 77 25 18  
## 181 4.94 149 15 434 66 112 13  
## 182 7.43 91 0 79 68 83 11  
## 183 4.74 140 4 230 25 60 13  
## 184 5.32 102 6 426 80 74 18  
## 185 9.95 97 7 35 60 33 11  
## 186 10.07 107 11 449 64 100 10  
## 187 8.68 86 0 93 46 51 17  
## 188 6.03 96 0 142 62 32 17  
## 189 8.07 90 0 426 76 37 15  
## 190 12.11 104 18 509 26 117 15  
## 191 8.79 101 13 297 37 37 13  
## 192 6.67 173 13 170 74 42 14  
## 193 7.56 93 0 408 56 26 14  
## 194 13.28 96 7 71 61 70 10  
## 195 7.23 128 18 481 45 98 11  
## 196 4.19 112 4 420 66 93 11  
## 197 4.10 133 6 410 72 28 16  
## 198 2.52 138 0 333 76 61 16  
## 199 3.62 128 5 500 69 80 10  
## 200 6.42 126 5 335 64 88 14  
## 201 5.56 146 0 349 62 92 12  
## 202 5.94 134 0 139 54 83 18  
## 203 4.10 130 4 413 46 78 10  
## 204 2.05 157 0 132 25 82 14  
## 205 8.74 124 0 237 37 80 14  
## 206 5.68 132 1 317 28 22 12  
## 207 4.97 160 0 27 77 67 17  
## 208 8.19 97 0 466 61 105 10  
## 209 7.78 64 0 497 33 54 12  
## 210 3.02 90 11 326 76 21 11  
## 211 4.36 123 2 357 47 41 14  
## 212 9.39 120 14 445 32 118 15  
## 213 12.04 105 19 501 45 69 11  
## 214 8.23 139 5 220 33 84 10  
## 215 4.83 107 3 48 73 115 18  
## 216 2.34 144 15 170 71 83 11  
## 217 5.73 144 0 243 34 33 17  
## 218 4.34 111 0 481 70 44 14  
## 219 9.70 120 12 156 25 61 14  
## 220 10.62 116 19 359 58 79 17  
## 221 10.59 124 15 262 30 120 10  
## 222 6.43 107 0 125 80 44 11  
## 223 7.49 145 6 178 35 119 13  
## 224 3.45 125 9 276 62 45 14  
## 225 4.10 141 0 464 48 82 13  
## 226 6.68 82 0 412 36 25 14  
## 227 7.80 122 0 245 56 33 14  
## 228 8.69 101 10 68 57 64 16  
## 229 5.40 163 13 381 26 73 11  
## 230 11.19 72 0 404 27 104 18  
## 231 5.16 114 0 119 38 60 14  
## 232 8.09 122 0 123 27 69 11  
## 233 13.14 105 10 24 61 80 15  
## 234 8.65 120 18 218 29 76 14  
## 235 9.43 129 11 289 56 62 16  
## 236 5.53 132 8 95 50 32 17  
## 237 9.32 108 16 361 69 34 10  
## 238 9.62 135 8 499 48 28 10  
## 239 7.36 133 0 200 73 24 13  
## 240 3.89 118 0 149 62 105 16  
## 241 10.31 121 0 362 26 80 18  
## 242 12.01 94 0 160 38 63 12  
## 243 4.68 135 0 199 52 46 14  
## 244 7.82 110 13 87 57 25 10  
## 245 8.78 100 0 391 26 30 18  
## 246 10.00 88 0 199 57 43 10  
## 247 6.90 90 20 266 78 56 18  
## 248 5.04 151 0 298 34 114 16  
## 249 5.36 101 0 12 61 52 11  
## 250 5.05 117 0 86 65 67 11  
## 251 9.16 156 10 435 72 105 14  
## 252 3.72 132 5 310 62 111 13  
## 253 8.31 117 0 70 32 97 16  
## 254 5.64 122 5 288 57 24 12  
## 255 9.58 129 23 353 37 104 17  
## 256 7.71 81 8 198 80 81 15  
## 257 4.20 144 0 277 73 40 10  
## 258 8.67 112 14 477 80 62 13  
## 259 3.47 81 0 251 72 38 14  
## 260 5.12 100 10 467 74 36 11  
## 261 7.67 101 8 400 36 117 10  
## 262 5.71 118 4 188 54 42 15  
## 263 6.37 132 15 86 48 77 18  
## 264 7.77 115 6 434 25 26 17  
## 265 6.95 159 5 324 31 29 15  
## 266 5.31 129 10 402 39 35 17  
## 267 9.10 112 12 343 73 93 17  
## 268 5.83 112 7 473 51 82 12  
## 269 6.53 105 0 66 39 57 11  
## 270 5.01 166 0 438 46 69 17  
## 271 11.99 89 0 284 26 26 10  
## 272 4.55 110 0 504 62 56 16  
## 273 12.98 63 0 14 38 33 12  
## 274 10.04 86 8 244 58 106 12  
## 275 7.22 119 2 67 34 93 11  
## 276 6.67 132 11 210 53 119 11  
## 277 6.93 130 14 296 73 69 15  
## 278 7.80 125 12 326 36 48 16  
## 279 7.22 151 2 129 40 113 15  
## 280 3.42 158 13 376 64 57 18  
## 281 2.86 145 10 496 51 86 10  
## 282 11.19 105 7 303 45 69 16  
## 283 7.74 154 0 80 61 96 11  
## 284 5.36 117 0 112 80 110 16  
## 285 6.97 96 11 414 79 46 17  
## 286 7.60 131 11 261 39 26 10  
## 287 7.53 113 11 429 67 118 18  
## 288 6.88 72 4 208 44 44 17  
## 289 6.98 97 0 74 76 40 15  
## 290 8.75 156 25 448 43 77 17  
## 291 9.49 103 14 400 41 111 11  
## 292 6.64 89 0 106 39 70 17  
## 293 11.82 74 16 322 76 66 15  
## 294 11.28 89 0 74 59 84 10  
## 295 12.66 99 3 126 60 76 11  
## 296 4.21 137 14 502 79 35 10  
## 297 8.21 123 13 160 63 44 18  
## 298 3.07 104 13 276 75 83 10  
## 299 10.98 130 0 312 63 63 15  
## 300 9.40 96 17 497 54 40 17  
## 301 8.57 99 1 158 45 78 11  
## 302 7.41 87 0 198 57 93 16  
## 303 5.28 110 13 388 74 77 14  
## 304 10.01 99 16 290 43 52 11  
## 305 11.93 134 12 408 29 98 10  
## 306 8.03 132 26 394 33 29 13  
## 307 4.78 133 1 85 48 32 12  
## 308 5.90 120 0 13 61 92 12  
## 309 9.24 126 19 436 52 80 10  
## 310 11.18 80 13 33 68 111 18  
## 311 9.53 166 29 419 53 65 12  
## 312 6.15 132 12 328 51 68 14  
## 313 6.80 135 5 337 38 117 10  
## 314 9.33 54 3 491 66 81 13  
## 315 7.72 129 10 333 71 33 14  
## 316 6.39 171 8 220 29 21 14  
## 317 15.63 72 5 369 35 36 10  
## 318 6.41 136 0 472 80 30 15  
## 319 10.08 130 10 456 41 72 14  
## 320 6.97 129 19 459 57 45 11  
## 321 5.86 152 12 171 44 70 18  
## 322 7.52 98 5 499 34 39 15  
## 323 9.16 139 10 300 60 50 15  
## 324 10.36 103 18 428 34 105 12  
## 325 2.66 150 4 133 53 65 13  
## 326 11.70 104 11 131 47 69 11  
## 327 4.69 122 0 152 53 30 17  
## 328 6.23 104 17 316 80 38 16  
## 329 3.15 111 1 65 55 66 11  
## 330 11.27 89 9 433 45 54 12  
## 331 4.99 112 0 501 32 59 14  
## 332 10.10 134 15 213 32 63 10  
## 333 5.74 104 20 354 61 33 12  
## 334 5.87 147 7 303 41 60 10  
## 335 7.63 83 9 489 42 117 13  
## 336 6.18 110 15 464 72 70 15  
## 337 5.17 143 6 60 28 35 18  
## 338 8.61 102 0 283 80 38 15  
## 339 5.97 101 0 164 45 24 11  
## 340 11.54 126 4 219 44 44 15  
## 341 7.50 91 0 105 43 29 16  
## 342 7.38 93 0 268 72 120 10  
## 343 7.81 118 13 422 71 102 10  
## 344 5.99 121 10 371 26 42 14  
## 345 8.43 126 0 108 70 80 13  
## 346 4.81 149 0 279 79 68 12  
## 347 8.97 125 0 144 33 107 13  
## 348 6.88 112 0 161 27 39 14  
## 349 12.57 107 20 459 49 102 11  
## 350 9.32 96 18 467 49 27 14  
## 351 8.64 91 17 266 63 101 17  
## 352 10.44 105 16 458 62 115 16  
## 353 13.44 122 14 288 61 103 17  
## 354 9.45 92 12 430 35 67 12  
## 355 5.30 145 1 80 42 31 18  
## 356 7.02 146 0 306 42 100 11  
## 357 3.58 164 0 111 72 109 12  
## 358 13.36 72 3 276 34 73 15  
## 359 4.17 118 10 71 69 96 11  
## 360 3.13 130 11 396 66 62 14  
## 361 8.77 114 7 265 52 86 15  
## 362 8.68 104 10 183 56 25 15  
## 363 5.25 110 0 26 79 55 12  
## 364 10.26 108 1 377 25 75 12  
## 365 10.50 131 16 488 30 21 14  
## 366 6.53 162 0 122 57 30 17  
## 367 5.98 134 11 447 53 56 12  
## 368 14.37 53 0 256 52 106 17  
## 369 10.71 79 10 348 74 22 14  
## 370 10.26 122 22 463 36 100 14  
## 371 7.68 119 22 403 42 41 12  
## 372 9.08 126 0 191 54 81 16  
## 373 7.80 98 0 508 65 50 11  
## 374 5.58 116 0 402 78 71 17  
## 375 9.44 118 7 90 47 47 12  
## 376 7.90 124 4 206 73 46 11  
## 377 16.27 92 19 319 44 60 11  
## 378 6.81 125 0 263 41 61 12  
## 379 6.11 119 3 105 79 88 12  
## 380 5.81 107 0 404 54 111 15  
## 381 9.64 89 10 17 68 64 17  
## 382 3.90 151 21 496 77 65 13  
## 383 4.95 121 19 315 66 28 14  
## 384 9.35 68 0 76 63 117 10  
## 385 12.85 112 15 348 28 37 12  
## 386 5.87 132 13 455 62 73 17  
## 387 5.32 160 0 170 39 116 16  
## 388 8.67 115 14 238 73 73 14  
## 389 8.14 78 11 245 79 89 16  
## 390 8.44 107 8 328 35 42 12  
## 391 5.47 111 9 61 67 75 12  
## 392 6.10 124 0 49 56 63 16  
## 393 4.53 130 13 315 34 42 13  
## 394 5.57 120 10 26 30 51 17  
## 395 5.35 139 19 366 33 58 16  
## 396 12.57 128 17 203 33 108 14  
## 397 6.14 120 3 37 55 23 11  
## 398 7.41 159 12 368 40 26 18  
## 399 5.94 95 7 284 50 79 12  
## 400 9.71 120 0 27 49 37 16

x <- Carseats\_Filtered[,-1]  
y <- Carseats\_Filtered$Sales

library(caret)  
normalized\_values <- preProcess(x,method = c("center", "scale"))  
x\_normalized <- predict(normalized\_values,x)

x\_matrix <- as.matrix(x\_normalized)  
sum(is.na(x\_matrix))

## [1] 0

y\_matrix <- as.matrix(y)  
sum(is.na(y\_matrix))

## [1] 0

install.packages("glmnet")

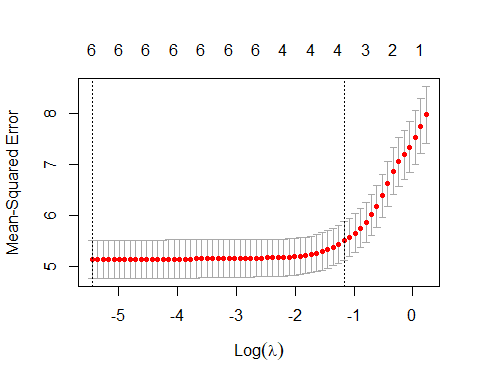
## Warning: package 'glmnet' is in use and will not be installed

library(glmnet)  
lasso\_fit <- glmnet(x\_normalized,y\_matrix,alpha = 1)

cv\_lasso <- cv.glmnet(x\_matrix, y\_matrix, alpha = 1)  
best\_lambda <- cv\_lasso$lambda.min  
print(best\_lambda)

## [1] 0.004305309

plot(cv\_lasso)



best\_model <- glmnet(x\_matrix, y\_matrix, alpha = 1, lambda = best\_lambda)  
coeff <- coef(best\_model)  
coeff

## 7 x 1 sparse Matrix of class "dgCMatrix"  
## s0  
## (Intercept) 7.49632500  
## Price -1.35384596  
## Advertising 0.82808291  
## Population -0.13062237  
## Age -0.78855156  
## Income 0.28931642  
## Education -0.09102494

price\_coefficient <- coeff["Price", ]  
print(price\_coefficient)

## [1] -1.353846

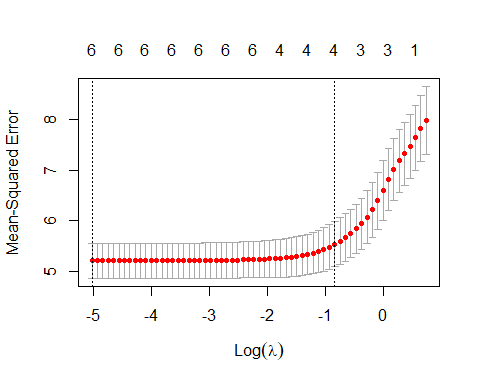
# Fit the Lasso model for lambda = 0.01  
model\_lambda\_0\_01 <- glmnet(x\_matrix, y\_matrix, alpha = 1, lambda = 0.01)  
coefficients\_0\_01 <- coef(model\_lambda\_0\_01)  
  
# Number of non-zero coefficients for lambda = 0.01  
non\_zero\_0\_01 <- sum(coefficients\_0\_01 != 0) - 1 # Subtract 1 to exclude the intercept  
  
# Fit the Lasso model for lambda = 0.1  
model\_lambda\_0\_1 <- glmnet(x\_matrix, y\_matrix, alpha = 1, lambda = 0.1)  
coefficients\_0\_1 <- coef(model\_lambda\_0\_1)  
  
# Number of non-zero coefficients for lambda = 0.1  
non\_zero\_0\_1 <- sum(coefficients\_0\_1 != 0) - 1 # Subtract 1 to exclude the intercept  
  
print(paste("Number of attributes with non-zero coefficients for lambda = 0.01:", non\_zero\_0\_01))

## [1] "Number of attributes with non-zero coefficients for lambda = 0.01: 6"

print(paste("Number of attributes with non-zero coefficients for lambda = 0.1:", non\_zero\_0\_1))

## [1] "Number of attributes with non-zero coefficients for lambda = 0.1: 4"

# Set seed for reproducibility  
set.seed(123)  
  
# Perform cross-validation for elastic-net with alpha = 0.6  
cv\_elastic\_net <- cv.glmnet(x\_matrix, y\_matrix, alpha = 0.6)  
plot(cv\_elastic\_net)



# Extract the best lambda value  
best\_lambda\_elastic\_net <- cv\_elastic\_net$lambda.min  
  
print(best\_lambda\_elastic\_net)

## [1] 0.006538062