ALL\_TRAIN.CSV(W24)

**Regression Analysis: orders versus year, day\_importance, day\_of\_year2, warehouse\_code, weekday, shops\_closed, holiday, school\_holidays, month, is\_leap\_year**

**Method**

|  |  |
| --- | --- |
| Categorical predictor coding | (1, 0) |

**Regression Equation**

|  |  |  |
| --- | --- | --- |
| orders | = | -1081297 + 0.0 warehouse\_code\_0 - 1722.9 warehouse\_code\_1 - 6117.4 warehouse\_code\_2 - 4098.4 warehouse\_code\_3 + 1248.0 warehouse\_code\_4 - 2132.4 warehouse\_code\_5 - 2568.6 warehouse\_code\_6 + 538.44 year + 0.0 holiday\_0 - 487.6 holiday\_1 + 0.0 weekday\_1 - 137.3 weekday\_2 - 152.6 weekday\_3 - 31.9 weekday\_4 + 558.0 weekday\_5 + 75.8 weekday\_6 - 188.7 weekday\_7 + 882.1 day\_importance + 0.0 month\_1 - 129.5 month\_2 - 151.5 month\_3 - 168.3 month\_4 - 367.8 month\_5 - 550.6 month\_6 - 801.9 month\_7 - 692.7 month\_8 - 413.2 month\_9 - 128.0 month\_10 + 176.5 month\_11 + 506.9 month\_12 - 1386 day\_of\_year2 + 0.0 is\_leap\_year\_0 + 82.4 is\_leap\_year\_1 |

**Coefficients**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Term** | **Coef** | **SE Coef** | **T-Value** | **P-Value** | **VIF** |
| Constant | -1081297 | 15342 | -70.48 | 0.000 |  |
| warehouse\_code |  |  |  |  |  |
| 1 | -1722.9 | 22.9 | -75.24 | 0.000 | 1.66 |
| 2 | -6117.4 | 27.8 | -219.68 | 0.000 | 1.45 |
| 3 | -4098.4 | 25.8 | -158.94 | 0.000 | 1.52 |
| 4 | 1248.0 | 22.7 | 55.02 | 0.000 | 1.67 |
| 5 | -2132.4 | 22.7 | -94.05 | 0.000 | 1.67 |
| 6 | -2568.6 | 22.7 | -113.29 | 0.000 | 1.67 |
| year | 538.44 | 7.59 | 70.97 | 0.000 | 1.25 |
| holiday |  |  |  |  |  |
| 1 | -487.6 | 43.0 | -11.35 | 0.000 | 1.17 |
| weekday |  |  |  |  |  |
| 2 | -137.3 | 23.9 | -5.74 | 0.000 | 1.73 |
| 3 | -152.6 | 23.9 | -6.39 | 0.000 | 1.73 |
| 4 | -31.9 | 23.9 | -1.34 | 0.182 | 1.73 |
| 5 | 558.0 | 23.9 | 23.30 | 0.000 | 1.73 |
| 6 | 75.8 | 23.9 | 3.17 | 0.002 | 1.73 |
| 7 | -188.7 | 25.8 | -7.31 | 0.000 | 1.62 |
| day\_importance | 882.1 | 42.9 | 20.56 | 0.000 | 1.19 |
| month |  |  |  |  |  |
| 2 | -129.5 | 31.8 | -4.06 | 0.000 | 2.08 |
| 3 | -151.5 | 32.7 | -4.63 | 0.000 | 2.13 |
| 4 | -168.3 | 35.8 | -4.70 | 0.000 | 2.08 |
| 5 | -367.8 | 35.2 | -10.45 | 0.000 | 2.08 |
| 6 | -550.6 | 35.4 | -15.57 | 0.000 | 2.06 |
| 7 | -801.9 | 35.3 | -22.72 | 0.000 | 2.15 |
| 8 | -692.7 | 35.0 | -19.78 | 0.000 | 2.14 |
| 9 | -413.2 | 35.0 | -11.81 | 0.000 | 2.13 |
| 10 | -128.0 | 35.0 | -3.66 | 0.000 | 2.16 |
| 11 | 176.5 | 35.1 | 5.02 | 0.000 | 2.13 |
| 12 | 506.9 | 34.1 | 14.88 | 0.000 | 2.40 |
| day\_of\_year2 | -1386 | 135 | -10.24 | 0.000 | 1.72 |
| is\_leap\_year |  |  |  |  |  |
| 1 | 82.4 | 26.5 | 3.11 | 0.002 | 1.32 |

**Model Summary**

|  |  |  |  |
| --- | --- | --- | --- |
| **S** | **R-sq** | **R-sq(adj)** | **R-sq(pred)** |
| 553.762 | 93.53% | 93.51% | 93.47% |

**Analysis of Variance**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Source** | **DF** | **Adj SS** | **Adj MS** | **F-Value** | **P-Value** |
| Regression | 28 | 32425447167 | 1158051685 | 3776.43 | 0.000 |
| warehouse\_code | 6 | 30150645801 | 5025107634 | 16386.99 | 0.000 |
| year | 1 | 1544651248 | 1544651248 | 5037.14 | 0.000 |
| holiday | 1 | 39489071 | 39489071 | 128.77 | 0.000 |
| weekday | 6 | 414340704 | 69056784 | 225.20 | 0.000 |
| day\_importance | 1 | 129584472 | 129584472 | 422.58 | 0.000 |
| month | 11 | 865719843 | 78701804 | 256.65 | 0.000 |
| day\_of\_year2 | 1 | 32152900 | 32152900 | 104.85 | 0.000 |
| is\_leap\_year | 1 | 2971982 | 2971982 | 9.69 | 0.002 |
| Error | 7309 | 2241320821 | 306652 |  |  |
| Total | 7337 | 34666767987 |  |  |  |

