Main Content

1. Welcome to DL101 1
    a. Course Journey 3
    b. DL101 : Multiple Regression 5
    c. Lecture 6
    d. Workshop 7
    e. Facebook Group 11
    f. Document for DL101 12
2. AI Overview 13
    a. AI and Machine Learning 14
        i. History of AI 16
        ii. What is AI? 19
        iii. AI, ML and DL 20
        iv. Type of Machine Learning 21
        v. What is Supervised Learning? 23
        vi. What is Unsupervised Learning? 24
        vii. What is Reinforcement Learning 25
    b. Supervised Learning 28
        i. Concept of Supervised Learning 29
        ii. Regression and Classification 31
        iii. Classification 32
        iv. Regression 34
3. Introduction 38
    a. What is Multiple Regression 40
    b. Real World Application 46
4. Model Creation 52
    a. Data 56
        i. Data Stating 58
        ii. Data Requirement 66
    b. Model 72
        i. Assumption 74
        ii. How to create model 77
        iii. Further Reading 124
    c. Prediction 130
5. Basic Workshop 148
    a. Supervised Learning Workflow 149

b. Code Pipeline 150
i. Import Libraries 151
ii. Read Data 153
iii. Clean Data 155
1. Handle Missing Values 156
2. Handle Outliers 158
iv. Train/Test 160
v. Data Preparation 162
1. Type of Features 164
2. Type of Categorical Features 166
3. Ordinal Encoding 168
4. One Hot Encoding 171
5. Feature Scaling 175
vi. Create Model 177
vii. Prediction 179
viii. Model Evaluation 181
1. Scoring 182
2. Scatter Plot between Predicted & Actual Values 185
ix. Model Deployment 188
c. AI in Marketing 191
i. Abstract 192
ii. Why this project important? 193
iii. Who this project is for? 194
iv. Ads Dataset 195
v. What we learn from this project? 197
vi. File 199
d. AI in Investment 200
i. Abstract 201
ii. Why this project important? 202
iii. Who this project is for? 203
iv. SET50 Dataset 204
v. What we learn from this project? 206
vi. File 208
e. Smart Farm 210
i. Abstract 211
ii. Why this project important? 212
iii. Who this project is for? 213

iv. Rice Dataset 214
v. What we learn from this project? 217
vi. File 219
f. AI in Business 221
i. Abstract 222
ii. Why this project important? 223
iii. Who this project is for? 224
iv. Bike Sharing Dataset 225
v. What we learn from this project? 228
vi. File 230
g. AI in Insurance 231
i. Abstract 232
ii. Why this project important? 233
iii. Who this project is for? 234
iv. Insurance Dataset 235
v. What we learn from this project? 237
vi. File 241
6. Model Improvement 244
a. Assumption 246
b. Problem with Linearly Dependent 299
c. Solution 329
d. Regularization 365
i. What is Regularization? 366
ii. Ridge Regression 372
1. What is Ridge Regression? 373
2. Geometric View 375
3. Properties 389
4. Model Creation 391
5. How to find Lambda 395
6. Code 400
iii. Lasso Regression 409
1. What is Lasso Regression? 410
2. Geometric View 412
3. Properties 424
4. Model Creation 431
5. How to find Lambda 437
6. Code 442

iv. Elastic Net 450
1. What is Elastic Net? 451
2. Geometric View 453
3. Properties 458
4. Model Creation 467
5. How to find Lambda & l_{1_ratio} 473
6. Code 478
v. Conclusion 487
7. Advance Workshop 491
a. Supervised Learning Workflow 492
b. Code Pipeline 493
c. AI in Car Price 497
i. Abstract 498
ii. Why this project important? 499
iii. Who this project is for? 500
iv. Ads Dataset 501
v. What we learn from this project? 503
vi. File 509