Main Content

1.	Welco	me to D	L101	1
	a.	Lectur	re	4
	b.	Works	hop	5
	C.	All Top	pics	7
	d.	DL101	: Linear Regression	8
	e.	Course	e Journey	9
	f.	Facebo	ook Group	10
	g.	Docun	nent for DL101	11
2.	Al Ove	rview		12
	a.	Al and	Machine Learning	13
		i.	History of AI	15
		ii.	What is AI?	18
		iii.	AI, ML and DL	19
		iv.	Type of Machine Learning	20
		٧.	What is Supervised Learning?	22
		vi.	What is Unsupervised Learning?	23
		vii.	What is Reinforcement Learning	24
	b.	Super	vised Learning	27
		i.	Concept of Supervised Learning	28
		ii.	Regression and Classification	30
		iii.	Classification	31
		iv.	Regression	33
3.	Introd	uction		37
	a.	What i	s Linear Regression	39
	b.	Extens	sion to Neural Network	45
	C.	Real W	Vorld Application	49
4.	Model	Creatio	on	55
	a.	Data		59
		i.	Data Stating	61
		ii.	Data Requirement	69
	b.	Model		75
		i.	Assumption	77
		ii.	Real Face of the Model	80
		iii.	Cost function and Cost Landscape	90
		iv.	How to Create Model (Math)	98

			1. Least Square Method	100
			2. Calculation Example	109
		٧.	How to Create Model (Code)	116
		vi.	Further Reading	125
	C.	Predi	ction	131
		i.	1-Sample	135
		ii.	Multi-Sample	140
		iii.	Code	149
5.	Basic	Worksh	юр	157
	a.	Supe	rvised Learning Workflow	158
	b.	Code	Pipeline	159
		i.	Import Libraries	160
		ii.	Read Data	162
		iii.	Clean Data	164
			1. Handle Missing Values	165
			2. Handle Outliers	167
		iv.	Train/Test	169
		٧.	Data Preparation	171
			1. Type of Features	173
			2. Type of Categorical Features	175
			3. Ordinal Encoding	177
			4. One Hot Encoding	180
			5. Feature Scaling	184
		vi.	Create Model	186
			1. Setting Parameter	187
			2. Train Model	189
			3. Model's Weight & Bias	191
		vii.	Prediction	193
		viii.	Model Evaluation	195
			1. Scoring	196
			2. Scatter Plot between Predicted & Actual Values	199
		ix.	Model Deployment	202
	C.	Al in l	Marketing	205
		i.	Abstract	206
		ii.	Why this project important?	207
		iii.	Who this project is for?	208
		iv.	Ads Dataset	209

		٧.	What we learn from this project	? 211
		vi.	File	213
	d.	Al in l	nvestment	214
		i.	Abstract	215
		ii.	Why this project important?	216
		iii.	Who this project is for?	217
		iv.	SET50 Dataset	218
		٧.	What we learn from this project	?? 220
		vi.	File	222
	e.	Smart	Farm	224
		i.	Abstract	225
		ii.	Why this project important?	226
		iii.	Who this project is for?	227
		iv.	Rice Dataset	228
		٧.	What we learn from this project	? 231
		vi.	File	233
	f.	Al in E	Business	235
		i.	Abstract	236
		ii.	Why this project important?	237
		iii.	Who this project is for?	238
		iv.	Bike Sharing Dataset	239
		٧.	What we learn from this project	?? 242
		vi.	File	244
	g.	Al in l	nsurance	245
		i.	Abstract	246
		ii.	Why this project important?	247
		iii.	Who this project is for?	248
		iv.	Insurance Dataset	249
		٧.	What we learn from this project	? 251
		vi.	File	250
6.	Model	Improv	rement	258
	a.	Assun	nption	260
	b.	Proble	em with Linearly Dependent	313
	C.	Soluti	on	343
	d.	Regul	arization	379
		i.	What is Regularization?	376
		ii.	Ridge Regression	386

			I.	what is Ridge Regression?	387
			2.	Geometric View	389
			3.	Properties	403
			4.	Model Creation	409
			5.	How to find Lambda	409
			6.	Code	414
		iii.	Lasso	Regression	423
			1.	What is Lasso Regression?	424
			2.	Geometric View	426
			3.	Properties	439
			4.	Model Creation	447
			5.	How to find Lambda	453
			6.	Code	458
		iv.	Elastic	Net	466
			1.	What is Elastic Net?	467
			2.	Geometric View	469
			3.	Properties	474
			4.	Model Creation	483
			5.	How to find Lambda & $l1_{ratio}$	489
			6.	Code	494
		٧.	Conclu	ision	503
7.	Advan	ice Worl	kshop		507
	a.	Super	vised Le	arning Workflow	508
	b.	Code I	Pipeline		509
	C.	Al in C	ar Price		513
		i.	Abstra	ct	514
		ii.	Why th	nis project important?	515
		iii.	Who th	nis project is for?	516
		iv.	Ads Da	ataset	517
		٧.	What w	ve learn from this project?	519
		vi.	File		525