

udemy-courses-dataset

January 31, 2024

0.1 Working on Real-Time Project with Python on ‘Udemy Courses Dataset’

0.1.1 Udemy Courses Dataset

This dataset contains all courses data for all subjects. We will analyze this using Pandas Library. Here, the Questions are given for the practice and learning purpose.

```
[ ]: import pandas as pd
```

```
[2]: data = pd.read_csv('D:/data analystics/Python for data analytics/Python_
↳Projects/Udamey Courses Dataset/file.csv')
```

```
[3]: data.head()
```

```
[3]:
```

	course_id	course_title	is_paid	\
0	288942	#1 Piano Hand Coordination: Play 10th Ballad i...	True	
1	1170074	#10 Hand Coordination - Transfer Chord Ballad ...	True	
2	1193886	#12 Hand Coordination: Let your Hands dance wi...	True	
3	1116700	#4 Piano Hand Coordination: Fun Piano Runs in ...	True	
4	1120410	#5 Piano Hand Coordination: Piano Runs in 2 ...	True	

	price	num_subscribers	num_reviews	num_lectures	level	\
0	35	3137	18	68	All Levels	
1	75	1593	1	41	Intermediate Level	
2	75	482	1	47	Intermediate Level	
3	75	850	3	43	Intermediate Level	
4	75	940	3	32	Intermediate Level	

	content_duration	published_timestamp	subject
0	1.5 hours	2014-09-18T05:07:05Z	Musical Instruments
1	1 hour	2017-04-12T19:06:34Z	Musical Instruments
2	1.5 hours	2017-04-26T18:34:57Z	Musical Instruments
3	1 hour	2017-02-21T23:48:18Z	Musical Instruments
4	37 mins	2017-02-21T23:44:49Z	Musical Instruments

0.1.2 Questions.1. What are the different subjects for which udemy is offering courses?

```
[4]: data.subject.unique()
```

```
[4]: array(['Musical Instruments', 'Business Finance', 'Graphic Design',  
        'Web Development'], dtype=object)
```

0.1.3 Question.2. Which subject has the maximum number of courses.

```
[7]: data.subject.value_counts()
```

```
[7]: subject  
Web Development      1200  
Business Finance     1199  
Musical Instruments   680  
Graphic Design        603  
Name: count, dtype: int64
```

0.1.4 Question.3. Show all the courses which are Free of Cost.

```
[8]: data[data.is_paid == False]
```

```
[8]:
```

	course_id	course_title	is_paid	\
41	286070	5 lecciones que todo guitarrista debe tomar	False	
49	696630	7 Ways A Beginner Guitarist Can Sound Better, ...	False	
57	955914	A beginner`s guide to fingerpicking and strumm...	False	
67	270976	A how to guide in HTML	False	
74	1214144	;Triunfar en La Bolsa de Valores No Requiere d...	False	
...	
3620	552598	WordPress in under an hour - Create/manage you...	False	
3638	1068590	Wordpress Website Mastery 2017	False	
3652	752706	Write quicker HTML5 and CSS 3; productivity ha...	False	
3674	1257976	Your First 10 Guitar Lessons - Learn how to pl...	False	
3680	1225194	Zoho Books Gestion Financière d'Entreprise pas...	False	

	price	num_subscribers	num_reviews	num_lectures	level	\
41	Free	4452	263	14	Beginner Level	
49	Free	4529	193	7	Beginner Level	
57	Free	3481	29	20	Beginner Level	
67	Free	7318	205	8	Beginner Level	
74	Free	338	7	6	Beginner Level	
...	
3620	Free	6474	86	15	All Levels	
3638	Free	5181	64	22	Beginner Level	
3652	Free	13016	286	15	All Levels	
3674	Free	924	4	18	Beginner Level	

```
3680  Free                229                0                33        All Levels
```

```

      content_duration  published_timestamp      subject
41          1 hour  2014-08-23T05:08:14Z  Musical Instruments
49          36 mins  2015-12-21T18:50:50Z  Musical Instruments
57          2 hours  2016-09-13T21:51:59Z  Musical Instruments
67          35 mins  2014-08-10T20:19:10Z    Web Development
74          1 hour  2017-05-30T14:30:12Z    Business Finance
...
3620         1 hour  2015-07-15T00:21:56Z    Web Development
3638         2.5 hours  2017-01-18T17:01:40Z    Web Development
3652         1.5 hours  2016-03-03T17:45:31Z    Web Development
3674          1 hour  2017-06-29T00:29:36Z  Musical Instruments
3680          2 hours  2017-05-26T16:45:55Z    Business Finance
```

```
[310 rows x 11 columns]
```

0.1.5 Question.4. Show all the courses which are Paid.

```
[9]: data[data.is_paid == True]
```

```

[9]:      course_id      course_title  is_paid \
0      288942  #1 Piano Hand Coordination: Play 10th Ballad i...  True
1      1170074  #10 Hand Coordination - Transfer Chord Ballad ...  True
2      1193886  #12 Hand Coordination: Let your Hands dance wi...  True
3      1116700  #4 Piano Hand Coordination: Fun Piano Runs in ...  True
4      1120410  #5 Piano Hand Coordination: Piano Runs in 2 ...  True
...
3676      498488  Your First Successful Forex Trades - With Case...  True
3677      328960  Your Own Site in 45 Min: The Complete Wordpres...  True
3678      552700  Your Second Course on Piano: Two Handed Playing  True
3679      631754  Zend Framework 2: Learn the PHP framework ZF2 ...  True
3681      964478  Zombie Apocalypse Photoshop Actions  True
```

```

      price  num_subscribers  num_reviews  num_lectures      level \
0         35           3137           18           68      All Levels
1         75           1593            1           41  Intermediate Level
2         75            482            1           47  Intermediate Level
3         75            850            3           43  Intermediate Level
4         75            940            3           32  Intermediate Level
...
3676      200           1079           34           16      All Levels
3677      120           1566           29           36      All Levels
3678       70           1018           12           22  Beginner Level
3679       40            723          130           37      All Levels
3681       50            12            1           15      All Levels
```

	content_duration	published_timestamp	subject
0	1.5 hours	2014-09-18T05:07:05Z	Musical Instruments
1	1 hour	2017-04-12T19:06:34Z	Musical Instruments
2	1.5 hours	2017-04-26T18:34:57Z	Musical Instruments
3	1 hour	2017-02-21T23:48:18Z	Musical Instruments
4	37 mins	2017-02-21T23:44:49Z	Musical Instruments
...
3676	2.5 hours	2015-05-26T20:48:48Z	Business Finance
3677	4 hours	2015-04-20T22:15:17Z	Web Development
3678	5 hours	2015-10-26T20:04:21Z	Musical Instruments
3679	6.5 hours	2015-11-11T18:55:45Z	Web Development
3681	1.5 hours	2016-09-26T22:19:48Z	Graphic Design

[3372 rows x 11 columns]

0.1.6 Question.5. Which are the Top Selling Courses?

```
[13]: data.sort_values('num_subscribers', ascending= False).head()
```

```
[13]:
```

	course_id	course_title	is_paid	\
2230	41295	Learn HTML5 Programming From Scratch	False	
776	59014	Coding for Entrepreneurs Basic	False	
3385	625204	The Web Developer Bootcamp	True	
640	173548	Build Your First Website in 1 Week with HTML5 ...	False	
3316	764164	The Complete Web Developer Course 2.0	True	

	price	num_subscribers	num_reviews	num_lectures	level	\
2230	Free	268923	8629	45	All Levels	
776	Free	161029	279	27	Beginner Level	
3385	200	121584	27445	342	All Levels	
640	Free	120291	5924	30	Beginner Level	
3316	200	114512	22412	304	All Levels	

	content_duration	published_timestamp	subject
2230	10.5 hours	2013-02-14T07:03:41Z	Web Development
776	3.5 hours	2013-06-09T15:51:55Z	Web Development
3385	43 hours	2015-11-02T21:13:27Z	Web Development
640	3 hours	2014-04-08T16:21:30Z	Web Development
3316	30.5 hours	2016-03-08T22:28:36Z	Web Development

0.1.7 Question.6. Which are the Least Selling Courses?

```
[14]: data.sort_values('num_subscribers', ascending= True).head()
```

```
[14]:
```

	course_id	course_title	is_paid	price	\
649	1233314	Building a Balanced Scorecard	True	50	

3259	1232282	The Cash Flow Statement - An Introduction	True	50
3261	1275872	The Complete Adobe Spark Course	True	150
910	726314	Create Beautiful Image Maps for Your Website	True	20
3328	715476	The Cuckoo Strategy to get European Funding	True	160

	num_subscribers	num_reviews	num_lectures	level	\
649	0	0	11	Intermediate Level	
3259	0	0	10	Beginner Level	
3261	0	0	29	All Levels	
910	0	0	8	Intermediate Level	
3328	0	0	6	All Levels	

	content_duration	published_timestamp	subject
649	2 hours	2017-07-03T21:38:22Z	Business Finance
3259	1.5 hours	2017-06-28T16:05:51Z	Business Finance
3261	2 hours	2017-07-03T17:39:57Z	Graphic Design
910	37 mins	2016-01-18T17:56:36Z	Graphic Design
3328	1 hour	2016-01-06T02:38:23Z	Business Finance

0.1.8 Question.7. Show all the courses of Graphic Design where the price is below 100?

```
[17]: data[(data.subject == 'Graphic Design') & (data.price < 100)]
```

```
[17]:
```

	course_id	course_title	is_paid	\
8	206592	:::Beginners Guide To Creating Amazing Images ...	True	
20	1165268	15 Motion Graphic Elements in After Effect (S...	True	
35	1164876	3DS MAX - Learn 3Ds MAX tutorial for Beginners...	True	
39	599652	48 Logo Designs and Techniques	True	
52	794036	8 Stunden professionelles Cinema 4D Training	True	
...	
3568	133968	Web Elements Design With Photoshop	True	
3588	1131780	Whiteboard Animation, Beginner To Expert - In ...	True	
3639	1122306	Wordpress: Comment utiliser le thème FABLE	True	
3671	144222	YOU can Draw, Shade and Paint a Mixed Media Gi...	True	
3681	964478	Zombie Apocalypse Photoshop Actions	True	

	price	num_subscribers	num_reviews	num_lectures	level	\
8	25.0	72	5	17	Beginner Level	
20	30.0	8	0	20	Intermediate Level	
35	20.0	785	2	29	All Levels	
39	20.0	113	9	48	All Levels	
52	50.0	18	1	38	All Levels	
...	
3568	45.0	5072	38	44	All Levels	
3588	20.0	1343	25	16	All Levels	
3639	20.0	1	0	10	Beginner Level	

3671	30.0	1249	44	19	Beginner Level
3681	50.0	12	1	15	All Levels

	content_duration	published_timestamp	subject
8	1 hour	2014-04-29T19:50:31Z	Graphic Design
20	3 hours	2017-04-11T04:27:34Z	Graphic Design
35	4.5 hours	2017-04-18T16:45:59Z	Graphic Design
39	9 hours	2015-09-15T00:23:14Z	Graphic Design
52	8.5 hours	2016-03-22T20:51:28Z	Graphic Design
...
3568	5 hours	2014-10-21T19:18:12Z	Graphic Design
3588	1 hour	2017-03-14T20:52:30Z	Graphic Design
3639	39 mins	2017-03-07T16:53:27Z	Graphic Design
3671	3 hours	2014-01-28T02:30:26Z	Graphic Design
3681	1.5 hours	2016-09-26T22:19:48Z	Graphic Design

[450 rows x 11 columns]

0.1.9 Question.8. List out all the Courses that are related with 'Python'.

```
[18]: data[data.course_title.str.contains('Python')]
```

```
[18]:
```

	course_id	course_title	is_paid	\
216	599504	Advanced Scalable Python Web Development Using...	True	
777	47963	Coding for Entrepreneurs: Learn Python, Django...	True	
814	631128	Complete Python Web Course: Build 8 Python Web...	True	
842	186096	Core: A Web App Reference Guide for Django, Py...	True	
1400	394832	Fun and creative web engineering with Python a...	False	
1932	1038538	Introduction to QGIS Python Programming	True	
1969	902888	Investment Portfolio Analysis with Python	True	
2294	391546	Learn Python and Django: Payment Processing	True	
2295	1063722	Learn Python Django - A Hands-On Course	True	
2341	546848	Learn to code in Python and learn Adobe Photos...	True	
2906	368340	Professional Python Web Development Using Flask	True	
2908	1035940	Professional RESTful API Design using Python F...	True	
2929	270808	Projects in Django and Python	True	
2952	1170894	Python Algo Stock Trading: Automate Your Trading!	True	
2953	1070886	Python Algo Trading: FX Trading with Oanda	True	
2954	1196544	Python Algo Trading: Sentiment Trading with News	True	
2955	822444	Python and Django Full Stack Web Developer Boo...	True	
2956	477702	Python for Beginners: Python Programming Langu...	True	
2957	1035472	Python for Finance: Investment Fundamentals & ...	True	
2958	529828	Python for Trading & Investing	True	
2959	70640	Python Programming: Create an Digital Marketpl...	True	
2960	523312	Python Web Programming	True	
2962	1088656	Quantitative Trading Analysis with Python	True	
3013	970600	REST APIs with Flask and Python	True	

3154	815482	Stock Technical Analysis with Python	True
3272	938560	The Complete Ethical Hacking Course 2.0: Pytho...	True
3460	76052	Try Django 1.9 Build a Blog and Learn Python...	True
3573	16646	Web Programming with Python	True
3574	574082	Web Scraping with Python, Ruby & import. io	True

	price	num_subscribers	num_reviews	num_lectures	level \
216	120.0	1299	56	71	Intermediate Level
777	195.0	23412	799	251	All Levels
814	110.0	7489	941	173	All Levels
842	195.0	2497	98	154	All Levels
1400	NaN	10917	319	25	All Levels
1932	85.0	197	26	28	Beginner Level
1969	50.0	209	13	37	All Levels
2294	70.0	17714	198	23	All Levels
2295	50.0	1339	21	18	Beginner Level
2341	50.0	1132	1	29	All Levels
2906	120.0	3420	489	102	Beginner Level
2908	120.0	578	25	36	Intermediate Level
2929	60.0	1764	53	28	All Levels
2952	95.0	1165	21	41	Beginner Level
2953	200.0	453	42	33	Intermediate Level
2954	200.0	294	19	42	All Levels
2955	200.0	11832	1883	191	All Levels
2956	150.0	6153	125	84	Beginner Level
2957	195.0	3811	278	103	All Levels
2958	95.0	638	25	36	All Levels
2959	195.0	4198	145	161	All Levels
2960	100.0	1020	46	60	Beginner Level
2962	50.0	256	17	49	All Levels
3013	110.0	5151	737	115	Intermediate Level
3154	50.0	409	35	46	All Levels
3272	195.0	7827	268	66	All Levels
3460	50.0	7407	172	147	All Levels
3573	50.0	35267	217	53	All Levels
3574	75.0	973	50	46	All Levels

	content_duration	published_timestamp	subject
216	14 hours	2016-08-11T22:09:24Z	Web Development
777	45 hours	2013-04-08T00:46:14Z	Web Development
814	16 hours	2015-11-08T20:57:35Z	Web Development
842	26 hours	2014-05-29T00:58:43Z	Web Development
1400	2 hours	2015-06-09T19:51:50Z	Web Development
1932	3.5 hours	2016-12-22T00:11:22Z	Web Development
1969	7 hours	2016-07-13T21:40:32Z	Business Finance
2294	3.5 hours	2015-02-09T15:37:56Z	Web Development
2295	2 hours	2017-01-18T21:53:34Z	Web Development

2341	2 hours	2015-07-08T00:15:12Z	Graphic Design
2906	14.5 hours	2015-03-04T00:10:36Z	Web Development
2908	4.5 hours	2017-01-11T21:15:25Z	Web Development
2929	6.5 hours	2014-10-21T07:58:07Z	Web Development
2952	2.5 hours	2017-05-28T23:41:03Z	Business Finance
2953	3 hours	2017-03-14T00:39:45Z	Business Finance
2954	7 hours	2017-04-28T16:41:44Z	Business Finance
2955	31.5 hours	2017-02-24T18:40:55Z	Web Development
2956	5 hours	2015-06-14T18:18:57Z	Web Development
2957	6.5 hours	2017-03-30T22:17:09Z	Business Finance
2958	5 hours	2015-06-17T22:23:31Z	Business Finance
2959	26 hours	2013-10-20T19:53:28Z	Web Development
2960	6 hours	2015-07-01T21:46:36Z	Web Development
2962	5.5 hours	2017-01-27T17:11:28Z	Business Finance
3013	12.5 hours	2016-11-06T19:00:38Z	Web Development
3154	8 hours	2016-04-12T00:40:03Z	Business Finance
3272	11 hours	2016-09-26T15:08:29Z	Web Development
3460	20 hours	2014-03-04T07:12:21Z	Web Development
3573	4 hours	2012-04-25T00:01:43Z	Web Development
3574	4.5 hours	2015-08-09T22:16:41Z	Web Development

0.1.10 Question.9. Waht are courses that are published in year 2015?

```
[19]: data.dtypes
```

```
[19]: course_id          int64
      course_title      object
      is_paid           bool
      price             float64
      num_subscribers   int64
      num_reviews       int64
      num_lectures      int64
      level             object
      content_duration  object
      published_timestamp object
      subject           object
      dtype: object
```

```
[20]: data['published_timestamp'] = pd.to_datetime(data.published_timestamp)
```

```
[21]: data['Year'] = data['published_timestamp'].dt.year
```

```
[22]: data.head(2)
```

```
[22]:   course_id          course_title  is_paid \
0    288942  #1 Piano Hand Coordination: Play 10th Ballad i...    True
1    1170074  #10 Hand Coordination - Transfer Chord Ballad ...    True
```


	price	num_subscribers	num_reviews	num_lectures	level	\
0	35.0	3137	18	68	All Levels	
1	75.0	1593	1	41	Intermediate Level	

	content_duration	published_timestamp	subject	Year
0	1.5 hours	2014-09-18 05:07:05+00:00	Musical Instruments	2014
1	1 hour	2017-04-12 19:06:34+00:00	Musical Instruments	2017

```
[23]: data[data.Year == 2015]
```

```
[23]:
```

	course_id	course_title	is_paid	\
10	591880	1 - Concepts of Statistics For Beginners Step ...	True	
16	302450	10 Numbers Every Business Owner Should Know	True	
19	384928	101 Blues riffs - learn how the harmonica supe...	True	
23	550842	16 Guitar Chords to Jam With - (Beginner - Int...	True	
26	486240	2 Easy Steps To Investment And Avoiding Traps	True	
...	
3675	551170	Your First Course on Piano	True	
3676	498488	Your First Successful Forex Trades - With Case...	True	
3677	328960	Your Own Site in 45 Min: The Complete Wordpres...	True	
3678	552700	Your Second Course on Piano: Two Handed Playing	True	
3679	631754	Zend Framework 2: Learn the PHP framework ZF2 ...	True	

	price	num_subscribers	num_reviews	num_lectures	level	\
10	200.0	273	4	15	Beginner Level	
16	20.0	13	1	9	All Levels	
19	200.0	1350	65	55	Intermediate Level	
23	20.0	1224	19	20	Beginner Level	
26	20.0	828	1	20	All Levels	
...	
3675	70.0	2002	34	33	Beginner Level	
3676	200.0	1079	34	16	All Levels	
3677	120.0	1566	29	36	All Levels	
3678	70.0	1018	12	22	Beginner Level	
3679	40.0	723	130	37	All Levels	

	content_duration	published_timestamp	subject	Year
10	31 mins	2015-08-30 22:48:34+00:00	Business Finance	2015
16	1 hour	2015-03-08 19:11:24+00:00	Business Finance	2015
19	6.5 hours	2015-01-04 21:14:31+00:00	Musical Instruments	2015
23	1 hour	2015-07-10 19:53:56+00:00	Musical Instruments	2015
26	1 hour	2015-04-27 23:18:59+00:00	Business Finance	2015
...
3675	4 hours	2015-07-16 17:07:49+00:00	Musical Instruments	2015
3676	2.5 hours	2015-05-26 20:48:48+00:00	Business Finance	2015
3677	4 hours	2015-04-20 22:15:17+00:00	Web Development	2015

3678	5 hours	2015-10-26 20:04:21+00:00	Musical Instruments	2015
3679	6.5 hours	2015-11-11 18:55:45+00:00	Web Development	2015

[1014 rows x 12 columns]

0.1.11 Question.10. What are the Max.Number of Subscribers for each level of courses?

```
[24]: data.groupby('level')['num_subscribers'].max()
```

```
[24]: level
All Levels          268923
Beginner Level      161029
Expert Level         5172
Intermediate Level   29167
Name: num_subscribers, dtype: int64
```