Loading Data

Notes Based on: LINK
Official Loading Data Documentation: LINK

Loading CSV files

- Any csv could be imported into TensorFlow with either pandas or NumPy

Difference Between Features and Labels

- In summary; feature is the input and label is the output
- In This example below:

```
titanic_features = titanic.copy()
titanic_labels = titanic_features.pop('survived')
```

	sex	age	n_siblings_spouses	parch	fare	class	deck	embark_town	alone
0	male	22.0	1	0	7.2500	Third	unknown	Southampton	n
1	female	38.0	1	0	71.2833	First	C	Cherbourg	n
2	female	26.0	0	0	7.9250	Third	unknown	Southampton	y
3	female	35.0	1	0	53.1000	First	C	Southampton	n
4	male	28.0	0	0	8.4583	Third	unknown	Queenstown	y

Titanic Features First 5 values

```
0    0
1    1
2    1
3    1
4    0
Name: survived, dtype: int64
```

Titanic Labels first 5 values

- In the example above, whether the person survived in the label and the rest like age, parch, fare, class, etc.. is the feature
- In the code above, it pops out survived column from features and then added it to labels

Abalone Examples (Standard Data Types)

- This model tries to determine the age of the abalone by using different data like height, weight, length

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/af1a55ad-39a5-4b03-939a-795c77d7d7fd/loading_data_abolone.py

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/3f2af153-d7d4-4cff-bf5b-00e1eac38c61/loading_data_abolone.ipynb

Titanic Example (Mixed Data Types)

- This model tries to determine whether a person have survived the titanic by features like age, sex, and class

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Keras Functional API

- In the Titanic Example, to implement to preprocessing logic It's possible to either use:
  - Keras Functional API
  - Sub-classing
- This example would be using Functional API
- The code below gives an example of how to implement functional API in Keras

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/927a2941-07fa-4adb-95d5-82b7b097c5b2/preprocessing_functional_api.py

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/d084ceb2-d831-4ea7-b869-1eb76386c406/preprocessing_functional_API.ipynb

- Code for titanic example:

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/a92ba3a5-bf07-47c5-9532-a7fc6750ce42/loading_data_titanic.py

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/948dc41d-4be5-4126-a545-a466ced168c5/loading_data_titanic.ipynb

Making A TF Dataset From CSV

- The code in the example uses the csv from Titanic Example

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/ead3e0da-26a3-4b0e-981a-d0c0287ebe3e/loading_data_tfds.ipynb

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/d2cc4ab8-6f7a-4e54-87eb-ff162b47581e/loading_data_tfds.py