Estimator Eval

Use the Estimator API to evaluate the regression model.

Chapter Goals:

- Use an `Estimator` object to evaluate a regression model

A. Evaluation

The `Estimator` object provides a function called `evaluate`, which is used for model evaluation.

Like the `train` function, `evaluate` also takes an input data function as its required argument. The input data function must follow the same format as the one used with `train`, although it can be configured differently (i.e. no shuffling, smaller batch size, etc.). We can also specify the number of steps to run evaluation for using the `steps` keyword argument.

The `evaluate` function will return a dictionary containing the final values for each evaluation metric. Each key is the name of a metric and each value is that metric's value. The dictionary metrics consist of the model loss (corresponding to key `'loss'`), as well as each metric we specified in `eval_metric_ops` when initializing the evaluation `ExampleSpec`. The dictionary will also include the final training iteration of the model, represented by `'global_step'`.

```
eval_dict = regressor.evaluate(
    input_fn, # lambda function
    steps=2)
```

Note that `evaluate` also creates a new `eval` directory inside the model checkpoint directory. In the code above, the `eval` directory is saved as a subdirectory within `model_dir`. The `eval` directory contains a single events file depicting the evaluation run, which can be used with TensorBoard.