Lesson 9 (Merging) The tables given below are generated by the `grades2.py` script located in the `Grades` data folder. You can use `%load '<path>/grades2.py'` to load the script into your Jupyter notebook.

profile

	name	ID	major	year
0	Hue	6518	MA	Y1
1	Ibu	1290	CS	Y3
2	Rao	0141	EE	Y2

tests

ID	name	T1	T2	T3
4915	Cox	67	63	65
6518	Hue	52	51	58
8711	Hue	70	74	73
1290	Ibu	82	88	81

quizzes

ID	name	Q1	Q2	Q3
4915	Cox	60	69	65
7621	Cox	53	57	52
6518	Hue	55	52	59
8711	Hue	73	77	74

(a) Explain what the dataframe method `.reset_index()` does?

(b) The following are examples of **one-to-one** joins. By default, the `merge` Pandas command uses the interesection of the columns of two dataframes as keys to merge on. Explain what each command is doing.

```
pd.merge(profile,tests.reset_index())
pd.merge(profile,tests.reset_index(),how='outer')
pd.merge(profile,tests.reset_index(),how='left')
pd.merge(profile,tests.reset_index(),how='right')
pd.merge(profile,tests.reset_index(),how='inner')
```

(c) The following is an example of a **one-to-many** join. Explain what the command below is doing.

```
pd.merge(profile,tests)
```

(d) The following are examples of **many-to-many** joins. Explain what the commands below are doing.

```
pd.merge(tests,quizzes)
pd.merge(tests,quizzes,how='outer')
```

(e) Explain what the command below does.

```
pd.merge(tests,quizzes,left_index=True,right_index=True,how='outer')
```