

Fun with sorting

How Python makes it easy to sort a list of
dictionaries

The problem

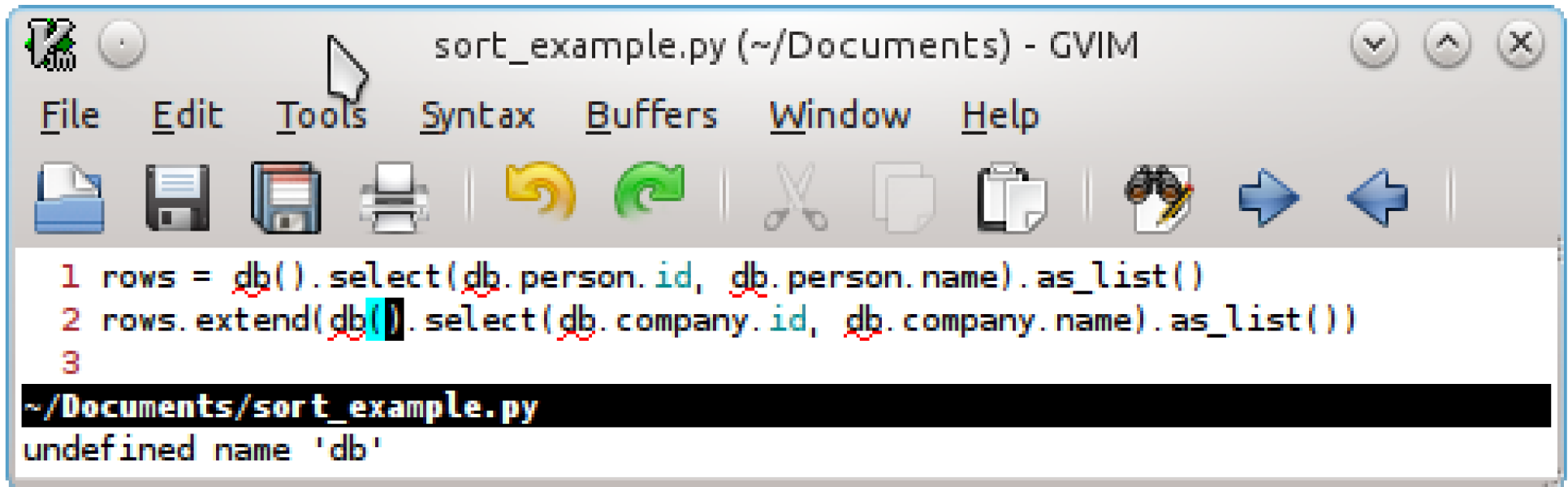
- Mix together and sort query results from two different tables
- Database driven web application
- Using Web2py framework
- Table.field: person.name, company.name

One SQL Solution

- Union query, something like
 - `SELECT name FROM person UNION SELECT name FROM company ORDER BY name`
- Not optimal with Web2py
 - Database Abstraction Layer does not support UNION
 - DAL will execute raw SQL, but the results are not DAL row objects. They can be converted, but the process does not seem intuitive.

as_list() to the rescue

- Hackish solution: make two queries and combine results.
- DAL rows do not support append() or extend().
- Need lists. These queries will do it:



The screenshot shows a Gvim window titled 'sort_example.py (~/Documents) - GVIM'. The menu bar includes File, Edit, Tools, Syntax, Buffers, Window, and Help. The toolbar contains icons for file operations and navigation. The code in the editor is as follows:

```
1 rows = db().select(db.person.id, db.person.name).as_list()  
2 rows.extend(db().select(db.company.id, db.company.name).as_list())  
3
```

The status bar at the bottom displays the file path '~/Documents/sort_example.py' and the error message 'undefined name 'db''.

Results:

```
>>> for r in rows: r
...
{'name': 'Fred', 'id': 1}
{'name': 'Carlos', 'id': 2}
{'name': 'Acme', 'id': 5}
{'name': 'Blouweb', 'id': 15}
>>> █
```

Sorting? Not so much.

```
>>>
>>> for r in sorted(rows): r
...
{'name': 'Fred', 'id': 1}
{'name': 'Carlos', 'id': 2}
{'name': 'Acme', 'id': 5}
{'name': 'Blouweb', 'id': 15}
>>>
>>>
>>> rows.sort()
>>> for r in rows: r
...
{'name': 'Fred', 'id': 1}
{'name': 'Carlos', 'id': 2}
{'name': 'Acme', 'id': 5}
{'name': 'Blouweb', 'id': 15}
>>> █
```

The key parameter does the trick

```
>>> for r in sorted(rows, key = lambda r: r['name']): r
...
{'name': 'Acme', 'id': 5}
{'name': 'Blouweb', 'id': 15}
{'name': 'Carlos', 'id': 2}
{'name': 'Fred', 'id': 1}
>>>
```

For more information

<http://wiki.python.org/moin/HowTo/Sorting/>

<http://stackoverflow.com/questions/72899/in-python-how-do-i-sort-a-list-of-dictionaries-by-values-of-the-dictionary>