Python by example

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hello world

```python
def main():
    print "hello world"

if __name__ == '__main__':
    main()
```

command-line argument

```python
import sys

def main():
    print sys.argv[1]
    # what if sys.argv[1] is missing?

if __name__ == '__main__':
    main()
```

dispatch based on 1st argument

```python
import sys

def main():
    cmd = sys.argv[1]
    if cmd == 'add':
        text = sys.argv[2]
        print 'adding', text
    else:
        print 'unknown comand', cmd

if __name__ == '__main__':
    main()
```

set up flask-sqlalchemy

```
#$ pip install flask-sqlalchemy
import flask
from flask.ext.sqlalchemy import SQLAlchemy
app = flask.Flask(__name__)
app.config['SQLALCHEMY_DATABASE_URI'] = 'sqlite:////tmp/test.db'
db = SQLAlchemy(app)

def main():
    # ...

if __name__ == '__main__':
    app.app_context().push()
    db.create_all()
    main()
```

define database model, insert row

```python
class Item(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    text = db.Column(db.String)

def main():
    # ...
    if cmd == 'add':
        text = sys.argv[2]
        item = Item(text=text)
        db.session.add(item)
        db.session.commit()
    # ...
```

print existing rows

```python
def main():
    # ...
    elif cmd == 'list':
        for item in Item.query.all():
            print item.id, item.text
    # ...
```

extra column "done"

```python
class Item(db.Model):
    # ...
    done = db.Column(db.Boolean)


def main():
    # elif cmd == 'list': ...
        status = '[x]' if item.done else '[ ]'
        print item.id, status, item.text
    # ...
    elif cmd == 'done':
        id = int(sys.argv[2])
        item = Item.query.get(id)
        item.done = True
        db.session.commit()
    # ...
```

export as csv

```python
import csv

def main():
    # ...
    elif cmd == 'csv':
        writer = csv.writer(sys.stdout)
        writer.writerow(['id', 'done', 'text'])
        for item in Item.query.all():
            writer.writerow([item.id,
                             'y' if item.done else '',
                             item.text])
    # ...
```

export as json

```python
import json

def main():
    # ...
    elif cmd == 'json':
        data = []
        for item in Item.query.all():
            data.append({
                'id': item.id,
                'done': item.done,
                'text': item.text,
            })
        #print data
        print json.dumps(data, indent=2)
    # ...
```

load json into database

```python
import json

def main():
    # ...
    elif cmd == 'loadjson':
        print json.load(sys.stdin)
    # ...
```