Mashing up with Google App Engine

http://bit.ly/8kqE0L

For example,
millidunsts.appspot.com

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Web page?
Nope, can't fetch data from other sites.
Plus, still need to host it somewhere.

Greasemonkey or other client program?
Yup, but severely limits your audience.
Harder to iterate.
Possibly slower because of repetitive data fetching.

PHP or CGI program?
Yup, but you need to pay for hosting.
And what happens if your app becomes popular or your server crashes?
Also, would probably require more code.

App Engine gives you lots for free

- Free hosting!
- Easy tools for development, deployment, versioning
- **Scalable**, **available,** and **managed** servers
- **Scalable, available,** and **adaptive** data storage
- Basic dashboard
- Simple APIs for: fetching URLs, editing images, writing a chat bot, sending mail, caching data, cron jobs, authentication

What's the catch?

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- Sandbox
- Various data store limitations
- Can eventually cost money
- Can't keep things in memory

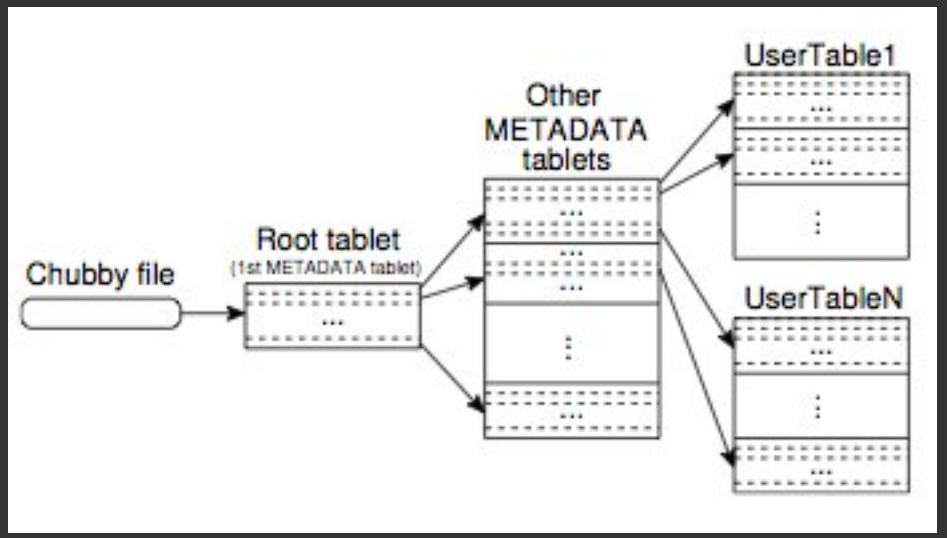
Scaling

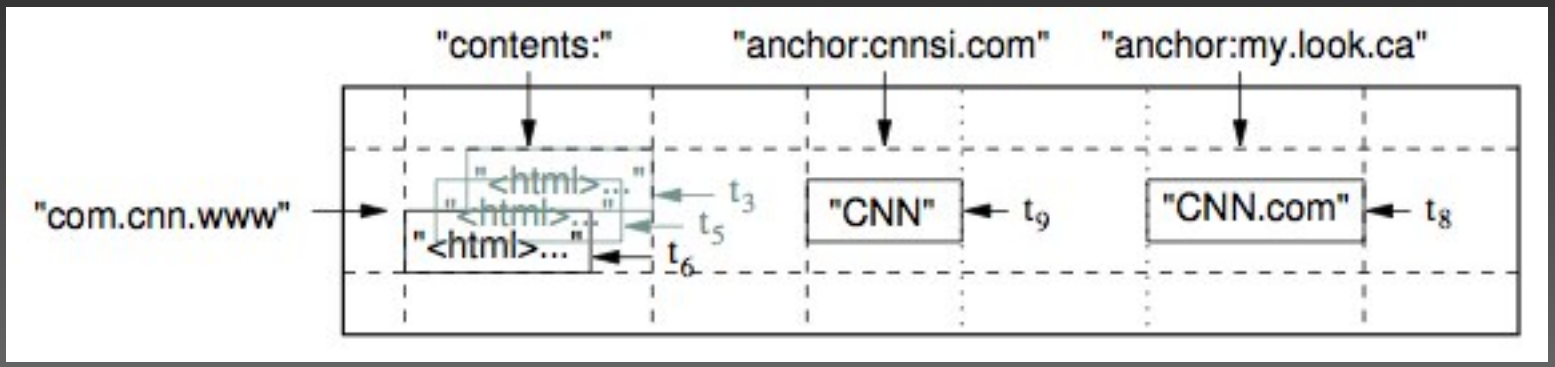
Scaling up: make one server beefier
Scaling out: run more servers

Scaling out:
- Done right, boundless and cheap.
- Find way to divide data or service into independent pieces.

The App Engine datastore

- Based on Bigtable (NoSQL / distributed key-value)
- Each row is an independent blob, no schema = easy to split across machines, minimal overhead
- Indices automatically created





What does the code look like?

```
from google.appengine.api import urlfetch
from google.appengine.ext import webapp

MS_URL = 'http://search.live.com/xrank/results.aspx?q=%s&p1=
[GenericXRankAnswer+EntityType%%3d"celebrity"]
&wf=XRankListEntity&FORM=XZX2'

MS_RE = '<td class="SelectedTableCell0">(\d+)</td>'

class MainPage(webapp.RequestHandler):
  def get(self):
    query = self.request.get("q")
    result = urlfetch.fetch(MS_URL % q)
    m = re.compile(MS_RE).search(result.content)
    self.response.out.write(m.group(1))
```

Another example,
tgupt.com

Using the datastore

```
from google.appengine.ext import db

class Response(db.Model):
  test = db.ReferenceProperty(Test, required=True)
  question = db.IntegerProperty()
  response = db.BooleanProperty()

test = model.Test.get(test_id)
response = model.Response(test = test)
response.question = question_id
response.response = (responseText == "yes")
response.put()
```

Another example,
partychapp.appspot.com

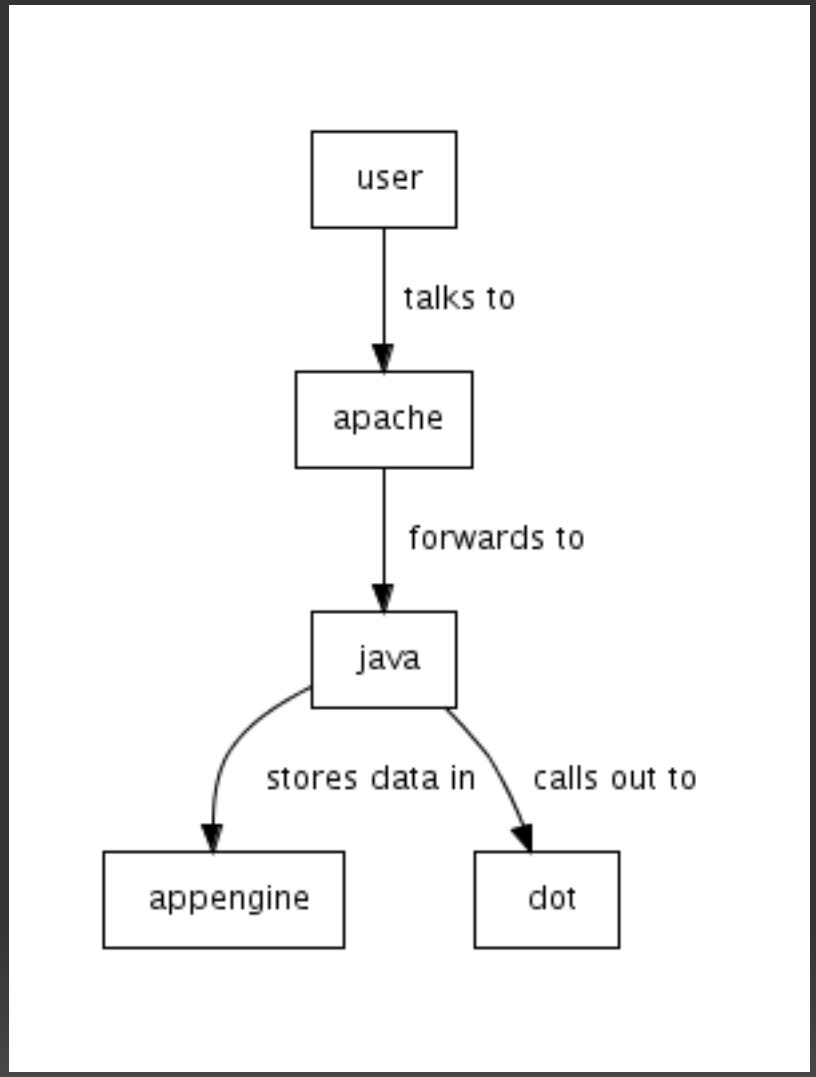
Using the chat APIs

```
XMPP.sendMessage(new MessageBuilder().withBody(msg)
.withFromJid(fromJID)
.withRecipientJids(toJIDs.toArray(new JID[]{}))
.build());
```

```
protected void doPost(HttpServletRequest req,
HttpServletResponse resp)
throws ServletException, IOException {
   XMPP = XMPPServiceFactory.getXMPPService();
   Message xmppMessage = XMPP.parseMessage(req);
}
```

Sometimes App Engine is just part of the puzzle, diagrammr.com

Fun example:
http://diagrammr.com/edit?key=dWo09ZNtD4k


user
talks to
apache
forwards to
java
stores data in
calls out to
appengine
dot

Download the Python SDK

http://code.google.com/appengine/downloads.html

http://code.google.com/appengine/docs/python/gettingstarted/helloworld.html