Chapter 2 - A toy app

What we'll learn this chapter:
- **Scaffolding** automatically (and quickly) creates large chunks of app code.
- Scaffolding is good for getting started quickly but is bad for understanding.
- Rails uses the Model-View-Controller (**MVC**) pattern for web applications.
- Rails' **REST architecture** includes a standard set of URLs and controller actions for interacting with data models.
- Rails supports **data validations** to constrain values of data model attributes.
- Use the **Rails console** to interact with your Rails app via command line.

2.1 Planning the application

Fire up Rails for a new app:

> *rails _5.0.1_ new toy_app*   # new Rails app
> *bundle install --without production*   # install gems, w/out production
> *bundle update*   # bundle install failed again

Setup git:

> *git init*
> *git add -A*
> *git commit -m "Initialize repository"*

Push repo to BitBucket

> # create toy_app repo at BitBucket
> *git remote add origin git@bitbucket.org:<username>/toy_app.git*
> *git push -u origin --all*

"It's never too early to deploy"

> # make hello, world edit
> *git commit -am "Add hello"*   # commit changes
> *heroku create*   # create app at Heroku
> *git push heroku master*   # push to deploy

2.2 The Users resource

Users data model; resource means auro CRUD
Generate with scaffold, then migrate changes to db

users	
id	integer
name	string
email	string

> *rails generate scaffold User name:string email:string*
> *rails db:migrate*

"Rake is Ruby make"; incorporated as a "rails" command in Rails 5

Test locally: *rails server -b $IP -p $PORT*

See Figure 2.11: A detailed diagram of MVC in Rails

For resource, add to routes.rb:

> *resources :users*
> *root 'users#index'*

Resource means means default URL's for Users pages

```
URL             Action      Purpose
/users          index       page to list all users
/users/1        show        page to show user with id 1
/users/new      new         page to make a new user
/users/1/edit   edit        page to edit user with id 1
```

Resource means default controller created: app/controllers/users_controller.rb

Resource means default REST-ful routes:

```
HTTP req    URL             Action      Purpose
GET         /users          index       page to list all users
GET         /users/1        show        page to show user with id 1
GET         /users/new      new         page to make a new user
POST        /users          create      create a new user
GET         /users/1/edit   edit page to edit user with id 1
PATCH       /users/1        update      update user with id 1
DELETE      /users/1        destroy     delete user with id 1
```

"**REST**", which is an acronym for REpresentational State Transfer;
means most app components modeled using CRUD paradigm

micposts	
id	integer
content	text
user_id	integer

2.3 The Microposts resource

Very similar to the Users stuff.

> *rails generate scaffold Micropost content:text user_id:integer*
> *rails db:migrate*

Add **validation** to data model: app/models/micropost.rb; 140 char limit to microposts

> *validates :content, length: { maximum: 140 }*

Relationships between data models: A user has_many microposts

> *has_many :microposts*   // in User data model, user.rb
> *belongs_to :user*   // in Micropost data model, micropost.rb

Control Rails from the command-line: *rails console*

Push to Bitbucket: *git add -A; git commit -m "Finish toy app"; git push*

Deploy to Heroku: git push heroku; heroku run rails db:migrate

Done. App is at:

profbill-toyapp.herokuapp.com