# Building a Website

> ⚠️ **Warning**
>
> This guide assumes **basic knowledge of Python (http://docs.python.org/2/tutorial/)**
> This guide assumes **an installed Odoo (../setup/install.html#setup-install)**

## Creating a basic module

In Odoo, tasks are performed by creating modules.
Modules customize the behavior of an Odoo installation, either by adding new behaviors or by altering existing ones (including behaviors added by other modules).
Odoo's scaffolding (../reference/cmdline.html#reference-cmdline-scaffold) can setup a basic module. To quickly get started simply invoke:

```
$ ./odoo-bin scaffold Academy my-modules
```

This will automatically create a **my-modules** *module directory* with an **academy** module inside. The directory can be an existing module directory if you want, but the module name must be unique within the directory.

## A demonstration module

We have a "complete" module ready for installation.
Although it does absolutely nothing we can install it:

start the Odoo server

```
$ ./odoo-bin --addons-path addons,my-modules
```

go to http://localhost:8069 (http://localhost:8069)

create a new database including demonstration data

to go Settings ‣ Modules ‣ Modules

in the top-right corner remove the *Installed* filter and search for *academy*

click the Install button for the *Academy* module

## To the browser

Controllers (../reference/http.html#reference-controllers) interpret browser requests and send data back.

Add a simple controller and ensure it is imported by `__init__.py` (so Odoo can find it):

*academy/controllers.py*

```
# -*- coding: utf-8 -*-
from odoo import http

class Academy(http.Controller):
    @http.route('/academy/academy/', auth='public')
    def index(self, **kw):
        return "Hello, world"

#    @http.route('/academy/academy/objects/', auth='public')
#    def list(self, **kw):
```
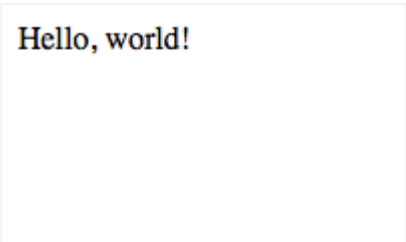
Shut down your server ( `^C` ) then restart it:

```
$ ./odoo-bin --addons-path addons,my-modules
```

and open a page to http://localhost:8069/academy/academy/ (http://localhost:8069/academy/academy/), you should see your "page" appear:

Hello, world!

# Templates

Generating HTML in Python isn't very pleasant.

The usual solution is templates (http://en.wikipedia.org/wiki/Web_template), pseudo-documents with placeholders and display logic. Odoo allows any Python templating system, but provides its own QWeb (../reference/qweb.html#reference-qweb) templating system which integrates with other features.

Create a template and ensure the template file is registered in the `__manifest__.py` manifest, and alter the controller to use our template:

*academy/controllers.py*

```
class Academy(http.Controller):
    @http.route('/academy/academy/', auth='public')
    def index(self, **kw):
        return http.request.render('academy.index', {
            'teachers': ["Diana Padilla", "Jody Caroll", "Lester Vaughn"],
        })

#       @http.route('/academy/academy/objects/', auth='public')
#       def list(self, **kw):
```

*academy/templates.xml*

```
<odoo>

        <template id="index">
            <title>Academy</title>
            <t t-foreach="teachers" t-as="teacher">
              <p><t t-esc="teacher"/></p>
            </t>
        </template>
        <!-- <template id="object"> -->
        <!--    <h1><t t-esc="object.display_name"/></h1> -->
        <!--    <dl> -->
```

The templates iterates ( **t-foreach** ) on all the teachers (passed through the *template context*), and prints each teacher in its own paragraph.

Finally restart Odoo and update the module's data (to install the template) by going to Settings ▸ Modules ▸ Modules ▸ Academy and clicking Upgrade.

> Alternatively, Odoo can be restarted **and update modules at the same time (../reference/cmdline.html#cmdoption-odoo-bin-u)**:
>
> ```
> $ odoo-bin --addons-path addons,my-modules -d academy -u academy
> ```

Going to http://localhost:8069/academy/academy/ (http://localhost:8069/academy/academy/) should now result in:

Diana Padilla

Jody Caroll

Lester Vaughn

## Storing data in Odoo

Odoo models (../reference/orm.html#reference-orm-model) map to database tables.

In the previous section we just displayed a list of string entered statically in the Python code. This doesn't allow modifications or persistent storage so we'll now move our data to the database.

## Defining the data model

Define a teacher model, and ensure it is imported from `__init__.py` so it is correctly loaded:

*academy/models.py*

```python
from odoo import models, fields, api

class Teachers(models.Model):
    _name = 'academy.teachers'

    name = fields.Char()
```

Then setup basic access control (../reference/security.html#reference-security-acl) for the model and add them to the manifest:

*academy/__manifest__.py*

```python
    # always loaded
    'data': [
        'security/ir.model.access.csv',
        'templates.xml',
    ],
    # only loaded in demonstration mode
```

*academy/security/ir.model.access.csv*

```
id,name,model_id:id,group_id:id,perm_read,perm_write,perm_create,perm_unlin
access_academy_teachers,access_academy_teachers,model_academy_teachers,,1,0
```

this simply gives read access ( `perm_read` ) to all users ( `group_id:id` left empty).

> **Data files (../reference/data.html#reference-data)** (XML or CSV) must be added to the module manifest, Python files (models or controllers) don't but have to be imported from `__init__.py` (directly or indirectly)

> ⚠ **Warning**
>
> the administrator user bypasses access control, they have access to all models even if not given access

## Demonstration data

The second step is to add some demonstration data to the system so it's possible to test it easily. This is done by adding a **demo** data file (../reference/data.html#reference-data), which must be linked from the manifest:

*academy/demo.xml*

```xml
<odoo>

        <record id="padilla" model="academy.teachers">
            <field name="name">Diana Padilla</field>
        </record>
        <record id="carroll" model="academy.teachers">
            <field name="name">Jody Carroll</field>
        </record>
        <record id="vaughn" model="academy.teachers">
            <field name="name">Lester Vaughn</field>
        </record>

</odoo>
```

> **Data files (../reference/data.html#reference-data)** can be used for demo and non-demo data. Demo data are only loaded in "demonstration mode" and can be used for flow testing and demonstration, non-demo data are always loaded and used as initial system setup.
>
> In this case we're using demonstration data because an actual user of the system would want to input or import their own teachers list, this list is only useful for testing.

## Accessing the data

The last step is to alter model and template to use our demonstration data:

1   fetch the records from the database instead of having a static list

2   Because **search()** (../reference/orm.html#odoo.models.Model.search) returns a set of records matching the filter ("all records" here), alter the template to print each teacher's **name**

*academy/controllers.py*

```python
class Academy(http.Controller):
    @http.route('/academy/academy/', auth='public')
    def index(self, **kw):
        Teachers = http.request.env['academy.teachers']
        return http.request.render('academy.index', {
            'teachers': Teachers.search([])
        })

#       @http.route('/academy/academy/objects/', auth='public')
```

*academy/templates.xml*

```
<template id="index">
    <title>Academy</title>
    <t t-foreach="teachers" t-as="teacher">
        <p><t t-esc="teacher.id"/> <t t-esc="teacher.name"/></p>
    </t>
</template>
<!-- <template id="object"> -->
```

Restart the server and update the module (in order to update the manifest and templates and load the demo file) then navigate to http://localhost:8069/academy/academy/ (http://localhost:8069/academy/academy/). The page should look slightly different: names should simply be prefixed by a number (the database identifier for the teacher).

# Website support

Odoo bundles a module dedicated to building websites.
So far we've used controllers fairly directly, but Odoo 8 added deeper integration and a few other services (e.g. default styling, theming) via the **website** module.

1   first, add **website** as a dependency to **academy**

2   then add the **website=True** flag on the controller, this sets up a few new variables on the request object (../reference/http.html#reference-http-request) and allows using the website layout in our template

3   use the website layout in the template

*academy/__manifest__.py*

```
'version': '0.1',

# any module necessary for this one to work correctly
'depends': ['website'],

# always loaded
'data': [
```

*academy/controllers.py*

```
from odoo import http


class Academy(http.Controller):
    @http.route('/academy/academy/', auth='public', website=True)
    def index(self, **kw):
        Teachers = http.request.env['academy.teachers']
        return http.request.render('academy.index', {
```

***academy/templates.xml***

```xml
<odoo>

    <template id="index">
        <t t-call="website.layout">
            <t t-set="title">Academy</t>
            <div class="oe_structure">
                <div class="container">
                    <t t-foreach="teachers" t-as="teacher">
                        <p><t t-esc="teacher.id"/> <t t-esc="teacher.na
                    </t>
                </div>
            </div>
        </t>
    </template>
    <!-- <template id="object"> -->
```
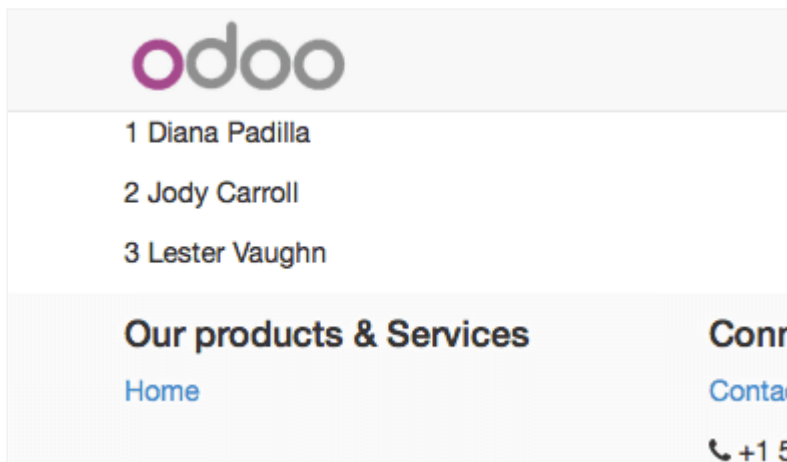
After restarting the server while updating the module (in order to update the manifest and template) access http://localhost:8069/academy/academy/ (http://localhost:8069/academy/academy/) should yield a nicer looking page with branding and a number of built-in page elements (top-level menu, footer, …)



The website layout also provides support for editing tools: click Sign In (in the top-right), fill the credentials in ( **admin** / **admin** by default) then click Log In.

You're now in Odoo "proper": the administrative interface. For now click on the Website menu item (top-left corner.

We're back in the website but as an administrator, with access to advanced editing features provided by the *website* support:

- a template code editor (Customize ▸ HTML Editor) where you can see and edit all templates used for the current page

- the Edit button in the top-left switches to "editing mode" where blocks (snippets) and rich text editing are available

a number of other features such as mobile preview or SEO (Search Engine Optimization)

# URLs and routing

Controller methods are associated with *routes* via the **route()**
(../reference/http.html#odoo.http.route) decorator which takes a routing string and a number of
attributes to customise its behavior or security.

We've seen a "literal" routing string, which matches a URL section exactly, but routing strings can
also use converter patterns (http://werkzeug.pocoo.org/docs/routing/#rule-format) which match
bits of URLs and make those available as local variables. For instance we can create a new
controller method which takes a bit of URL and prints it out:

*academy/controllers.py*

```
        'teachers': Teachers.search([])
    })

@http.route('/academy/<name>/', auth='public', website=True)
def teacher(self, name):
    return '<h1>{}</h1>'.format(name)



#    @http.route('/academy/academy/objects/', auth='public')
#    def list(self, **kw):
#        return http.request.render('academy.listing', {
```

restart Odoo, access http://localhost:8069/academy/Alice/
(http://localhost:8069/academy/Alice/) and http://localhost:8069/academy/Bob/
(http://localhost:8069/academy/Bob/) and see the difference.

As the name indicates, converter patterns (http://werkzeug.pocoo.org/docs/routing/#rule-format)
don't just do extraction, they also do *validation* and *conversion*, so we can change the new
controller to only accept integers:

*academy/controllers.py*

```
        'teachers': Teachers.search([])
    })

@http.route('/academy/<int:id>/', auth='public', website=True)
def teacher(self, id):
    return '<h1>{} ({})</h1>'.format(id, type(id).__name__)



#    @http.route('/academy/academy/objects/', auth='public')
```

Restart Odoo, access http://localhost:8069/academy/2 (http://localhost:8069/academy/2), note how the old value was a string, but the new one was converted to an integers. Try accessing http://localhost:8069/academy/Carol/ (http://localhost:8069/academy/Carol/) and note that the page was not found: since "Carol" is not an integer, the route was ignored and no route could be found.

Odoo provides an additional converter called **model** which provides records directly when given their id. Let's use this to create a generic page for teacher biographies:

*academy/controllers.py*

```
        'teachers': Teachers.search([])
    })


@http.route('/academy/<model("academy.teachers"):teacher>/', auth='publ
def teacher(self, teacher):
    return http.request.render('academy.biography', {
        'person': teacher
    })



#     @http.route('/academy/academy/objects/', auth='public')
```

*academy/templates.xml*

```
                </div>
            </t>
        </template>
        <template id="biography">
            <t t-call="website.layout">
                <t t-set="title">Academy</t>
                <div class="oe_structure"/>
                <div class="oe_structure">
                    <div class="container">
                        <p><t t-esc="person.id"/> <t t-esc="person.name"/><
                    </div>
                </div>
                <div class="oe_structure"/>
            </t>
        </template>
        <!-- <template id="object"> -->
        <!--    <h1><t t-esc="object.display_name"/></h1> -->
        <!--    <dl> -->
```

then change the list of model to link to our new controller:

*academy/templates.xml*

```
<div class="oe_structure">
    <div class="container">
        <t t-foreach="teachers" t-as="teacher">
            <p><a t-attf-href="/academy/{{ slug(teacher) }}
              <t t-esc="teacher.name"/></a>
            </p>
        </t>
    </div>
</div>
```

```
<div class="oe_structure"/>
<div class="oe_structure">
    <div class="container">
        <h3><t t-esc="person.name"/></h3>
    </div>
</div>
<div class="oe_structure"/>
```

Restart Odoo and upgrade the module, then you can visit each teacher's page. As an exercise, try adding blocks to a teacher's page to write a biography, then go to another teacher's page and so forth. You will discover, that your biography is shared between all teachers, because blocks are added to the *template*, and the *biography* template is shared between all teachers, when one page is edited they're all edited at the same time.

# Field editing

Data which is specific to a record should be saved on that record, so let us add a new biography field to our teachers:

**academy/models.py**

```
_name = 'academy.teachers'

name = fields.Char()
biography = fields.Html()
```

**academy/templates.xml**

```
<div class="oe_structure">
    <div class="container">
        <h3><t t-esc="person.name"/></h3>
        <div><t t-esc="person.biography"/></div>
    </div>
</div>
<div class="oe_structure"/>
```

Restart Odoo and update the views, reload the teacher's page and... the field is invisible since it contains nothing.

For record fields, templates can use a special `t-field` directive which allows editing the field content from the website using field-specific interfaces. Change the *person* template to use `t-field`:

*academy/templates.xml*

```
<div class="oe_structure"/>
<div class="oe_structure">
    <div class="container">
        <h3 t-field="person.name"/>
        <div t-field="person.biography"/>
    </div>
</div>
<div class="oe_structure"/>
```

Restart Odoo and upgrade the module, there is now a placeholder under the teacher's name and a new zone for blocks in Edit mode. Content dropped there is stored in the corresponding teacher's `biography` field, and thus specific to that teacher.

The teacher's name is also editable, and when saved the change is visible on the index page.

`t-field` can also take formatting options which depend on the exact field. For instance if we display the modification date for a teacher's record:

*academy/templates.xml*

```
<div class="oe_structure">
    <div class="container">
        <h3 t-field="person.name"/>
        <p>Last modified: <i t-field="person.write_date"/><
        <div t-field="person.biography"/>
    </div>
</div>
```

it is displayed in a very "computery" manner and hard to read, but we could ask for a human-readable version:

*academy/templates.xml*

```
<div class="oe_structure">
    <div class="container">
        <h3 t-field="person.name"/>
        <p>Last modified: <i t-field="person.write_date" t-
        <div t-field="person.biography"/>
    </div>
</div>
```

or a relative display:

***academy/templates.xml***

```xml
<div class="oe_structure">
    <div class="container">
        <h3 t-field="person.name"/>
        <p>Last modified: <i t-field="person.write_date" t-
        <div t-field="person.biography"/>
    </div>
</div>
```

# Administration and ERP integration

## A brief and incomplete introduction to the Odoo administration

The Odoo administration was briefly seen during the website support section. We can go back to it using Administrator ▸ Administrator in the menu (or Sign In if you're signed out).

The conceptual structure of the Odoo backend is simple:

1. first are menus, a tree (menus can have sub-menus) of records. Menus without children map to…

2. actions. Actions have various types: links, reports, code which Odoo should execute or data display. Data display actions are called *window actions*, and tell Odoo to display a given *model* according to a set of views…

3. a view has a type, a broad category to which it corresponds (a list, a graph, a calendar) and an *architecture* which customises the way the model is displayed inside the view.

## Editing in the Odoo administration

By default, an Odoo model is essentially invisible to a user. To make it visible it must be available through an action, which itself needs to be reachable, generally through a menu.

Let's create a menu for our model:

***academy/__manifest__.py***

```python
'data': [
    'security/ir.model.access.csv',
    'templates.xml',
    'views.xml',
],
# only loaded in demonstration mode
'demo': [
```

***academy/views.xml***

```
<odoo>

  <record id="action_academy_teachers" model="ir.actions.act_window">
    <field name="name">Academy teachers</field>
    <field name="res_model">academy.teachers</field>
  </record>

  <menuitem sequence="0" id="menu_academy" name="Academy"/>
  <menuitem id="menu_academy_content" parent="menu_academy"
            name="Academy Content"/>
  <menuitem id="menu_academy_content_teachers"
            parent="menu_academy_content"
            action="action_academy_teachers"/>
```

then accessing http://localhost:8069/web/ (http://localhost:8069/web/) in the top left should be a menu Academy, which is selected by default, as it is the first menu, and having opened a listing of teachers. From the listing it is possible to Create new teacher records, and to switch to the "form" by-record view.

If there is no definition of how to present records (a view (../reference/views.html#reference-views)) Odoo will automatically create a basic one on-the-fly. In our case it works for the "list" view for now (only displays the teacher's name) but in the "form" view the HTML **biography** field is displayed side-by-side with the **name** field and not given enough space. Let's define a custom form view to make viewing and editing teacher records a better experience:

*academy/views.xml*

```
    <field name="res_model">academy.teachers</field>
  </record>

  <record id="academy_teacher_form" model="ir.ui.view">
    <field name="name">Academy teachers: form</field>
    <field name="model">academy.teachers</field>
    <field name="arch" type="xml">
      <form>
        <sheet>
          <label for="name"/> <field name="name"/>
          <label for="biography"/>
          <field name="biography"/>
        </sheet>
      </form>
    </field>
  </record>

  <menuitem sequence="0" id="menu_academy" name="Academy"/>
  <menuitem id="menu_academy_content" parent="menu_academy"
            name="Academy Content"/>
```

## Relations between models

We have seen a pair of "basic" fields stored directly in the record. There are a number of basic fields (../reference/orm.html#reference-orm-fields-basic). The second broad categories of fields are relational (../reference/orm.html#reference-orm-fields-relational) and used to link records to one another (within a model or across models).

For demonstration, let's create a *courses* model. Each course should have a **teacher** field, linking to a single teacher record, but each teacher can teach many courses:

*academy/models.py*

```
    name = fields.Char()
    biography = fields.Html()

class Courses(models.Model):
    _name = 'academy.courses'

    name = fields.Char()
    teacher_id = fields.Many2one('academy.teachers', string="Teacher")
```

*academy/security/ir.model.access.csv*

```
id,name,model_id:id,group_id:id,perm_read,perm_write,perm_create,perm_unlin
access_academy_teachers,access_academy_teachers,model_academy_teachers,,1,0
access_academy_courses,access_academy_courses,model_academy_courses,,1,0,0,
```

let's also add views so we can see and edit a course's teacher:

*academy/views.xml*

```xml
        </field>
    </record>

    <record id="action_academy_courses" model="ir.actions.act_window">
        <field name="name">Academy courses</field>
        <field name="res_model">academy.courses</field>
    </record>
    <record id="academy_course_search" model="ir.ui.view">
        <field name="name">Academy courses: search</field>
        <field name="model">academy.courses</field>
        <field name="arch" type="xml">
            <search>
                <field name="name"/>
                <field name="teacher_id"/>
            </search>
        </field>
    </record>
    <record id="academy_course_list" model="ir.ui.view">
        <field name="name">Academy courses: list</field>
        <field name="model">academy.courses</field>
        <field name="arch" type="xml">
            <tree string="Courses">
                <field name="name"/>
                <field name="teacher_id"/>
            </tree>
        </field>
    </record>
    <record id="academy_course_form" model="ir.ui.view">
        <field name="name">Academy courses: form</field>
        <field name="model">academy.courses</field>
        <field name="arch" type="xml">
            <form>
                <sheet>
                    <label for="name"/>
                    <field name="name"/>
                    <label for="teacher_id"/>
                    <field name="teacher_id"/>
                </sheet>
            </form>
        </field>
    </record>

    <menuitem sequence="0" id="menu_academy" name="Academy"/>
    <menuitem id="menu_academy_content" parent="menu_academy"
              name="Academy Content"/>
    <menuitem id="menu_academy_content_courses"
              parent="menu_academy_content"
              action="action_academy_courses"/>
    <menuitem id="menu_academy_content_teachers"
```

```
            parent="menu_academy_content"
            action="action_academy_teachers"/>
```

It should also be possible to create new courses directly from a teacher's page, or to see all the courses they teach, so add **the inverse relationship** (../reference/orm.html#odoo.fields.One2many) to the *teachers* model:

*academy/models.py*

```
    name = fields.Char()
    biography = fields.Html()

    course_ids = fields.One2many('academy.courses', 'teacher_id', string="C

class Courses(models.Model):
    _name = 'academy.courses'
```

*academy/views.xml*

```
        <form>
          <sheet>
            <label for="name"/> <field name="name"/>

            <label for="biography"/>
            <field name="biography"/>

            <field name="course_ids">
              <tree string="Courses" editable="bottom">
                <field name="name"/>
              </tree>
            </field>
          </sheet>
        </form>
    </field>
```

## Discussions and notifications

Odoo provides technical models, which don't directly fulfill business needs but which add capabilities to business objects without having to build them by hand.

One of these is the *Chatter* system, part of Odoo's email and messaging system, which can add notifications and discussion threads to any model. The model simply has to **_inherit** (../reference/orm.html#odoo.models.Model._inherit) `mail.thread`, and add the `message_ids` field to its form view to display the discussion thread. Discussion threads are per-record.

For our academy, it makes sense to allow discussing courses to handle e.g. scheduling changes or discussions between teachers and assistants:

*academy/models.py*

```python
class Courses(models.Model):
    _name = 'academy.courses'
    _inherit = 'mail.thread'

    name = fields.Char()
    teacher_id = fields.Many2one('academy.teachers', string="Teacher")
```

*academy/views.xml*

```xml
            <label for="teacher_id"/>
            <field name="teacher_id"/>
          </sheet>
          <div class="oe_chatter">
            <field name="message_follower_ids" widget="mail_followers"/>
            <field name="message_ids" widget="mail_thread"/>
          </div>
        </form>
      </field>
    </record>
```

At the bottom of each course form, there is now a discussion thread and the possibility for users of the system to leave messages and follow or unfollow discussions linked to specific courses.

## Selling courses

Odoo also provides business models which allow using or opting in business needs more directly. For instance the `website_sale` module sets up an e-commerce site based on the products in the Odoo system. We can easily make course subscriptions sellable by making our courses specific kinds of products.

Rather than the previous classical inheritance, this means replacing our *course* model by the *product* model, and extending products in-place (to add anything we need to it).

First of all we need to add a dependency on `website_sale` so we get both products (via `sale` ) and the ecommerce interface:

*academy/__manifest__.py*

```
    'version': '0.1',

    # any module necessary for this one to work correctly
    'depends': ['website_sale'],

    # always loaded
    'data': [
```

restart Odoo, update your module, there is now a Shop section in the website, listing a number of pre-filled (via demonstration data) products.

The second step is to replace the *courses* model by **product.template** , and add a new category of product for courses:

*academy/\_\_manifest\_\_.py*

```
        'security/ir.model.access.csv',
        'templates.xml',
        'views.xml',
        'data.xml',
    ],
    # only loaded in demonstration mode
    'demo': [
```

*academy/data.xml*

```xml
<odoo>
  <record model="product.public.category" id="category_courses">
    <field name="name">Courses</field>
    <field name="parent_id" ref="website_sale.categ_others"/>
  </record>
</odoo>
```

*academy/demo.xml*

```xml
                <field name="name">Lester Vaughn</field>
            </record>

            <record id="course0" model="product.template">
                <field name="name">Course 0</field>
                <field name="teacher_id" ref="padilla"/>
                <field name="public_categ_ids" eval="[(4, ref('academy.category
                <field name="website_published">True</field>
                <field name="list_price" type="float">0</field>
                <field name="type">service</field>
            </record>
            <record id="course1" model="product.template">
                <field name="name">Course 1</field>
                <field name="teacher_id" ref="padilla"/>
                <field name="public_categ_ids" eval="[(4, ref('academy.category
                <field name="website_published">True</field>
                <field name="list_price" type="float">0</field>
                <field name="type">service</field>
            </record>
            <record id="course2" model="product.template">
                <field name="name">Course 2</field>
                <field name="teacher_id" ref="vaughn"/>
                <field name="public_categ_ids" eval="[(4, ref('academy.category
                <field name="website_published">True</field>
                <field name="list_price" type="float">0</field>
                <field name="type">service</field>
            </record>

    </odoo>
```

*academy/models.py*

```python
    name = fields.Char()
    biography = fields.Html()

    course_ids = fields.One2many('product.template', 'teacher_id', string="

class Courses(models.Model):
    _inherit = 'product.template'

    teacher_id = fields.Many2one('academy.teachers', string="Teacher")
```

*academy/security/ir.model.access.csv*

```
id,name,model_id:id,group_id:id,perm_read,perm_write,perm_create,perm_unlin
access_academy_teachers,access_academy_teachers,model_academy_teachers,,1,0
```

**academy/views.xml**

```
        </field>
    </record>

    <menuitem sequence="0" id="menu_academy" name="Academy"/>
    <menuitem id="menu_academy_content" parent="menu_academy"
            name="Academy Content"/>
    <menuitem id="menu_academy_content_teachers"
            parent="menu_academy_content"
            action="action_academy_teachers"/>
```

With this installed, a few courses are now available in the Shop, though they may have to be looked for.

> to extend a model in-place, it's **inherited**
> **(../reference/orm.html#odoo.models.Model._inherit)** without giving it a new **_name**
> **(../reference/orm.html#odoo.models.Model._name)**
> `product.template` already uses the discussions system, so we can remove it from our extension model
> we're creating our courses as *published* by default so they can be seen without having to log in

## Altering existing views

So far, we have briefly seen:

the creation of new models

the creation of new views

the creation of new records

the alteration of existing models

We're left with the alteration of existing records and the alteration of existing views. We'll do both on the Shop pages.

View alteration is done by creating *extension* views, which are applied on top of the original view and alter it. These alteration views can be added or removed without modifying the original, making it easier to try things out and roll changes back.

Since our courses are free, there is no reason to display their price on the shop page, so we're going to alter the view and hide the price if it's 0. The first task is finding out which view displays the price, this can be done via Customize ▸ HTML Editor which lets us read the various templates involved in rendering a page. Going through a few of them, "Product item" looks a likely culprit. Altering view architectures is done in 3 steps:

1   Create a new view

2   Extend the view to modify by setting the new view's **`inherit_id`** to the modified view's
    external id

3   In the architecture, use the **`xpath`** tag to select and alter elements from the modified view

*academy/templates.xml*

```
          <div class="oe_structure"/>
      </t>
  </template>

  <template id="product_item_hide_no_price" inherit_id="website_sale.
      <xpath expr="//div[hasclass('product_price')]/b" position="attr
          <attribute name="t-if">product.price &gt; 0</attribute>
      </xpath>
  </template>

  <!-- <template id="object"> -->
  <!--   <h1><t t-esc="object.display_name"/></h1> -->
  <!--   <dl> -->
```

The second thing we will change is making the product categories sidebar visible by default:
Customize ‣ Product Categories lets you toggle a tree of product categories (used to filter the
main display) on and off.

This is done via the **`customize_show`** and **`active`** fields of extension templates: an extension
template (such as the one we've just created) can be *customize_show=True*. This choice will
display the view in the Customize menu with a check box, allowing administrators to activate or
disable them (and easily customize their website pages).

We simply need to modify the *Product Categories* record and set its default to *active="True"*:

*academy/templates.xml*

```
          </xpath>
  </template>

  <record id="website_sale.products_categories" model="ir.ui.view">
      <field name="active" eval="True"/>
  </record>

  <!-- <template id="object"> -->
  <!--   <h1><t t-esc="object.display_name"/></h1> -->
  <!--   <dl> -->
```

With this, the *Product Categories* sidebar will automatically be enabled when the *Academy* module
is installed.