Supporting Multiple Languages in Django

Internationalization vs Localization

Internationalization and localization represent two sides to the same coin. Together, they allow you to deliver your web application's content to different locales.

- **Internationalization**, represented by i18n (18 is the number of letters between i and n), is the processing of developing your application so that it can be used by different locales. This process is generally handled by developers.
- **Localization**, represented by l10n (10 is the number of letters between l and n), on the other hand, is the process of translating your application to a particular language and locale. This is generally handled by translators.

For more details: https://www.w3.org/International/questions/qa-i18n

```
eman@django_locallibrary:sudo apt-get install gettext
```

For the LANGUAGE_CODE to take effect, USE_I18N must be True, which enables Django's translation system.in setting.py add below:

```
# Internationalization
# https://docs.djangoproject.com/en/3.2/topics/i18n/
# Localization setting:
# LANGUAGE_CODE = 'en-us'
LANGUAGE_CODE = 'en'
TIME_ZONE = 'UTC'

USE_I18N = True

USE_L10N = True

USE_TZ = True
```

'UTC' is the default TIME_ZONE.
Since USE_L10N is set to True, Django will display numbers and dates using the format of the current locale.
Finally, when USE_TZ is True, datetimes will be time zone-aware.

Then add languages you want to add in setting.py:

```
from django.utils.translation import gettext, ngettext
from django.utils.translation import gettext_lazy as _
LANGUAGES = (
    ('en', _('English')),
    ('fr', _('French')),
    ('ar', _('Arabic')),
)
```

See list of language identifiers for more. http://www.i18nguy.com/unicode/language-identifiers.html

Add django.middleware.locale.LocaleMiddleware to the MIDDLEWARE settings list. This middleware should come after the SessionMiddleware because the LocaleMiddleware needs to use the session data. It should also be placed before the CommonMiddleware because the CommonMiddleware needs the active language to resolve the URLs being requested. Hence, the order is very important.Then it will be like below:

```
MIDDLEWARE = [
    'django.middleware.security.SecurityMiddleware',
    'whitenoise.middleware.WhiteNoiseMiddleware',
    'django.contrib.sessions.middleware.SessionMiddleware',
    'django.middleware.locale.LocaleMiddleware', # localization and translation
    'django.middleware.common.CommonMiddleware',
    'django.middleware.csrf.CsrfViewMiddleware',
    'django.contrib.auth.middleware.AuthenticationMiddleware',
    'django.contrib.messages.middleware.MessageMiddleware',
    'django.middleware.clickjacking.XFrameOptionsMiddleware',
]
```

Add a locale path directory in setting.py for your application where message files will reside:

```
LOCALE_PATHS = [
    BASE_DIR / 'locale/',
]
```

You need to create the "locale" directory inside of your root project and add a new folder for each language:

```
locale
├── en
├── ar
└── fr
```

Open the shell and run the following command from your project directory to create a *.po* message file for each language:

```
(env)$ django-admin makemessages --all --ignore=env
```

You should now have:

```
locale
├── en
│   └── LC_MESSAGES
│       └── django.po
├── ar
│   └── LC_MESSAGES
│       └── django.po
└── fr
    └── LC_MESSAGES
        └── django.po
```

Take note of one of the *.po* message files:

1. `msgid`: represents the translation string as it appears in the source code.
2. `msgstr`: represents the language translation, which is empty by default. You'll have to supply the actual translation for any given string.

Currently, only the `LANGUAGES` from our *settings.py* file have been marked for translation. Therefore, for each `msgstr` under the "fr" and "es" directories, enter the French or Spanish equivalent of the word manually, respectively. You can edit *.po* files from your regular code editor; however, it's recommended to use an editor designed specifically for *.po* like Poedit.

Translating Templates, Models, and Forms

You can translate model field names and forms by marking them for translation using either the `gettext` or `gettext_lazy` function:

In each file you want to translate is need to import `gettext_lazy` function first

```
from django.utils.translation import gettext_lazy as _
```

and make each word need to translate as below: add _ (‘ word or paragraph‘) in setting file as below:

```
def my_view(request):
    output = _("Welcome to my site.")
    return HttpResponse(output)
```

You have to add **{% load i18n %}** at the top of the HTML file to use the translation templates tags.Add below in the top of each html file need to be translated:

```
{% load i18n %}
<h1>{% trans "hello this is Home page of book list view" %}</h1>
<p>{% trans "hello this is Home page of book list view" %}</p>
```

Don't forget to add `{% load i18n %}` to the top of the file.

```
(env)$ django-admin makemessages --all --ignore=env
```

Update the following `msgstr` translations:

In .po files for each language you added.

Compile the messages:

```
(env)$ django-admin compilemessages --ignore=env
```

Or we can Using Rosetta Translation Interface:

Rosetta is a Django application that facilitates the translation process of your Django projects.

https://django-rosetta.readthedocs.io/

```
pip3 install django-rosetta
```

edit setting.py as below:

```
# Application definition
INSTALLED_APPS = [
    'django.contrib.admin',
    'django.contrib.auth',#Core authentication framework and its default models.
    'django.contrib.contenttypes',#Django content type system
    (allows permissions to be associated with models).
    'django.contrib.sessions',
    'django.contrib.messages',
    'django.contrib.staticfiles',
     # Add our new application
    'catalog.apps.CatalogConfig',#This object was created for us in
/catalog/apps.py
    'rosetta', # NEW to tranlsator
]
```

You'll also need to add Rosetta's URL to your main URL configuration in *project/urls.py*:

```
urlpatterns = [
    path('admin/', admin.site.urls),
    path('catalog/', include('catalog.urls')),
    path('', views.index, name='index'),
    path('', RedirectView.as_view(url='catalog/', permanent=True)),
    #Add Django site authentication urls (for login, logout, password management)
    path('accounts/', include('django.contrib.auth.urls')),
    path('rosetta/', include('rosetta.urls')),  # NEW
]+ static(settings.STATIC_URL, document_root=settings.STATIC_ROOT)
```

Create and apply the migrations, and then run the server:

```
(env)$ python manage.py makemigrations
(env)$ python manage.py migrate
(env)$ python manage.py runserver
```

Make sure you're logged in as an admin, and then navigate to http://127.0.0.1:8000/rosetta/ in your browser:When you finish editing translations, click the "Save and translate next block" button to save the translations to their respective *.po* file. Rosetta will then compile the message file, so there's no need to manually run the

`django-admin compilemessages --ignore=env` command.

Note that after you add new translations in a production environment, you'll have to reload your server after running the `django-admin compilemessages --ignore=env` command, or after saving the translations with Rosetta, for changes to take effect.

Add Language Prefix to URLs:

Next, add the `i18n_patterns` function to *project/urls.py*:

```
from django.conf.urls.i18n import i18n_patterns
from django.utils.translation import gettext_lazy as _
urlpatterns = i18n_patterns(
    path('admin/', admin.site.urls),
    path('catalog/', include('catalog.urls')),
    path('', views.index, name='index'),
    path('', RedirectView.as_view(url='catalog/', permanent=True)),
    #Add Django site authentication urls (for login, logout, password management)
    path('accounts/', include('django.contrib.auth.urls')),
    path('rosetta/', include('rosetta.urls')),  # NEW
)+ static(settings.STATIC_URL, document_root=settings.STATIC_ROOT)
```

Run the development server again, and navigate to http://127.0.0.1:8000/ in your browser. You will be redirected to the requested URL, with the appropriate language prefix. Take a look at the URL in your browser; it should now look like http://127.0.0.1:8000/en/.

Change the requested URL from `en` to either `fr` or `es`. The heading should change.

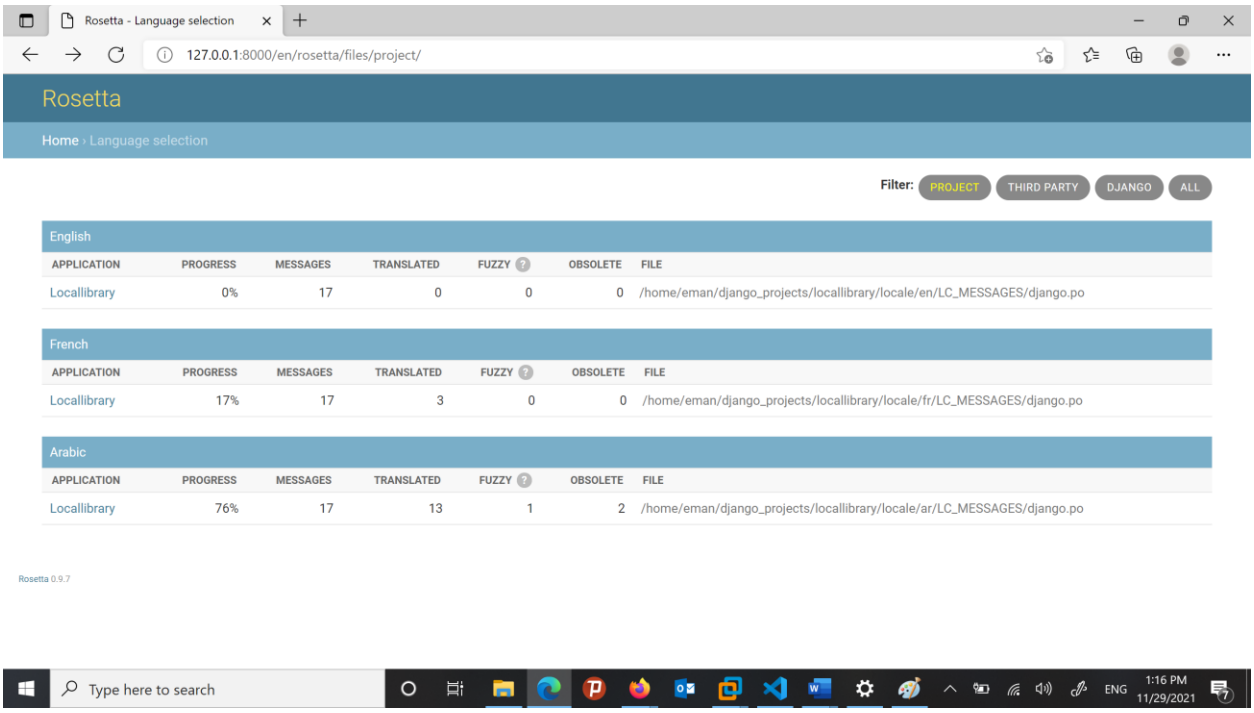
Allowing Users to Switch Languages

Update the *index.html* or *base_generic.html* file like so:

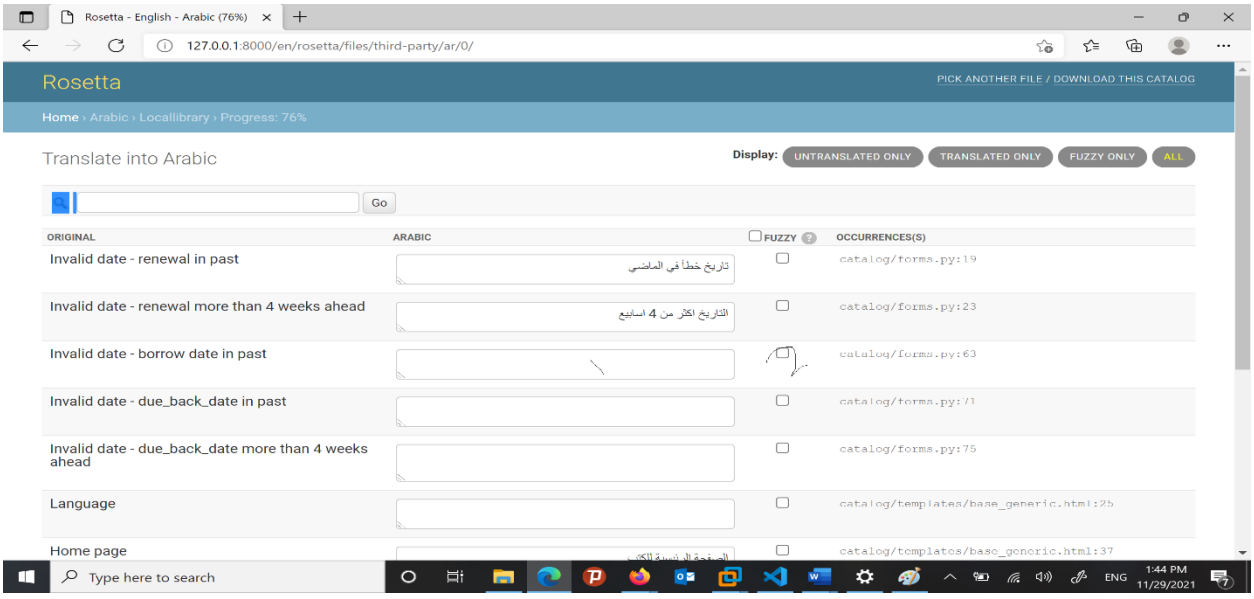
```
{% load i18n %}
<!DOCTYPE html>
<html lang="en">
<head>

  {% block title %}<title>First Home Page</title>{% endblock %}
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css"
integrity="sha384-
TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkgIXeMed4M0jlfIDPvg6uqKI2xXr2"
crossorigin="anonymous">
  <div class="container-fluid">
    <div class="row">
      <div class="col-sm-2">
      {% block sidebar %}
        <ul class="sidebar-nav">
      {% get_current_language as CURRENT_LANGUAGE %}
      {% get_available_languages as AVAILABLE_LANGUAGES %}
      {% get_language_info_list for AVAILABLE_LANGUAGES as languages %}
      <div class="languages">
        <p>{% trans "Language" %}:</p>
        <ul class="languages">
          {% for language in languages %}
            <li>
              <a href="/{{ language.code }}/"
           {% if language.code == CURRENT_LANGUAGE %} class="active"{% endif %}>
                {{ language.name_local }}
              </a>
            </li>
          {% endfor %}
        </ul>
      </div>
```

Working with rosetta:



1- write here the translated string:
2- check fuzzy on translation that means changes doesn't make effects.



When you finish editing translations, click the "Save and translate next block" button to save the translations to their respective *.po* file. Rosetta will then compile the message file, so there's no need to manually run the `django-admin compilemessages --ignore=env` command.