

To create a Django web application with login and signup functionality using Google, Facebook, and GitHub, you can follow these general steps:

1. Install the necessary packages:

- django-allauth: This package provides easy integration with social authentication providers, including Google, Facebook, and GitHub. Install it using pip:

```
...
```

```
pip install django-allauth
```

```
...
```

- social-auth-app-django: This package provides additional integration with social authentication providers. Install it using pip:

```
...
```

```
pip install social-auth-app-django
```

```
...
```

2. Add `allauth` and `social_django` to your `INSTALLED_APPS` in your `settings.py` file:

```
```python
INSTALLED_APPS = [
 # other apps
 'django.contrib.sites',
 'allauth',
 'allauth.account',
 'allauth.socialaccount',
 'allauth.socialaccount.providers.google',
 'allauth.socialaccount.providers.facebook',
 'allauth.socialaccount.providers.github',
 'social_django',
]
```
```

3. Add `sites` framework to your `MIDDLEWARE` in your `settings.py` file:

```
```python
MIDDLEWARE = [
 # other middleware
 'django.contrib.sites.middleware.CurrentSiteMiddleware',
]
```
```

4. Add the social authentication provider details to your `settings.py` file. You will need to obtain client IDs and secrets for each provider from their respective developer portals:

```
```python
SOCIALACCOUNT_PROVIDERS = {
 'google': {
 'APP': {
```

```

 'client_id': 'YOUR_GOOGLE_CLIENT_ID',
 'secret': 'YOUR_GOOGLE_CLIENT_SECRET',
 'key': "",
 },
 'SCOPE': [
 'profile',
 'email',
],
 'AUTH_PARAMS': {
 'access_type': 'online',
 }
},
'facebook': {
 'APP': {
 'client_id': 'YOUR_FACEBOOK_CLIENT_ID',
 'secret': 'YOUR_FACEBOOK_CLIENT_SECRET',
 'key': "",
 },
 'SCOPE': [
 'email',
 'public_profile',
],
 'METHOD': 'oauth2',
 'LOCALE_FUNC': lambda request: 'en_US',
 'VERIFIED_EMAIL': False,
 'VERSION': 'v10.0',
},
'github': {
 'APP': {
 'client_id': 'YOUR_GITHUB_CLIENT_ID',
 'secret': 'YOUR_GITHUB_CLIENT_SECRET',
 'key': "",
 },
 'SCOPE': [
 'user',
 'user:email',
],
}
}
...

```

5. Add the social authentication URLs to your project's `urls.py` file:

```

...python
from django.urls import path, include

```

```
from allauth.account.views import LoginView, SignupView

urlpatterns = [
 # other URLs
 path('accounts/', include('allauth.urls')),
 path('accounts/login/', LoginView.as_view(), name='account_login'),
 path('accounts/signup/', SignupView.as_view(), name='account_signup'),
]
...
```

6. Customize the templates used for login and signup:

- Copy the `account` folder from `allauth/templates` to your project's templates directory.
- Create new files called `login.html` and `signup.html` inside the `account` folder.
- Customize the templates as needed, including the social authentication buttons.

That's it! Your Django web application now has login and signup functionality with social authentication using Google, Facebook, and GitHub.