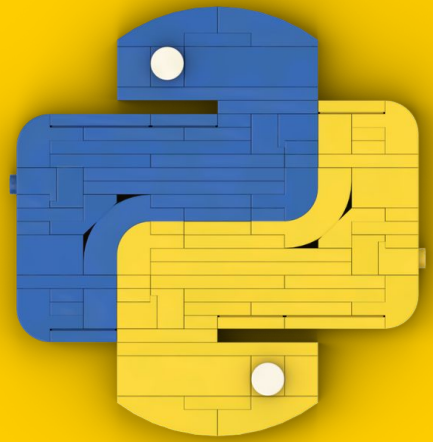


MFA/2FA

Sommaire

- Pourquoi la choisir?
- Les différentes solutions
- Un exemple simple

1 Pourquoi ?

173 000

19%

4 avantages

Sécurité des données

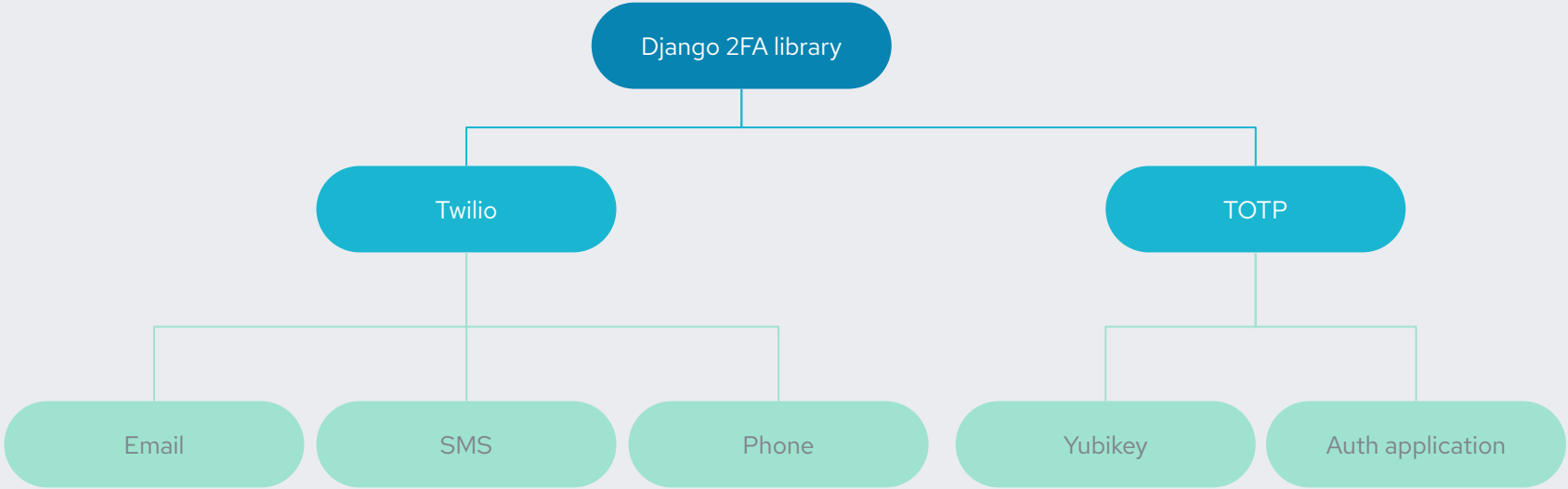
Conformité et normalisation

Outil marketing

Fluidité et facilité

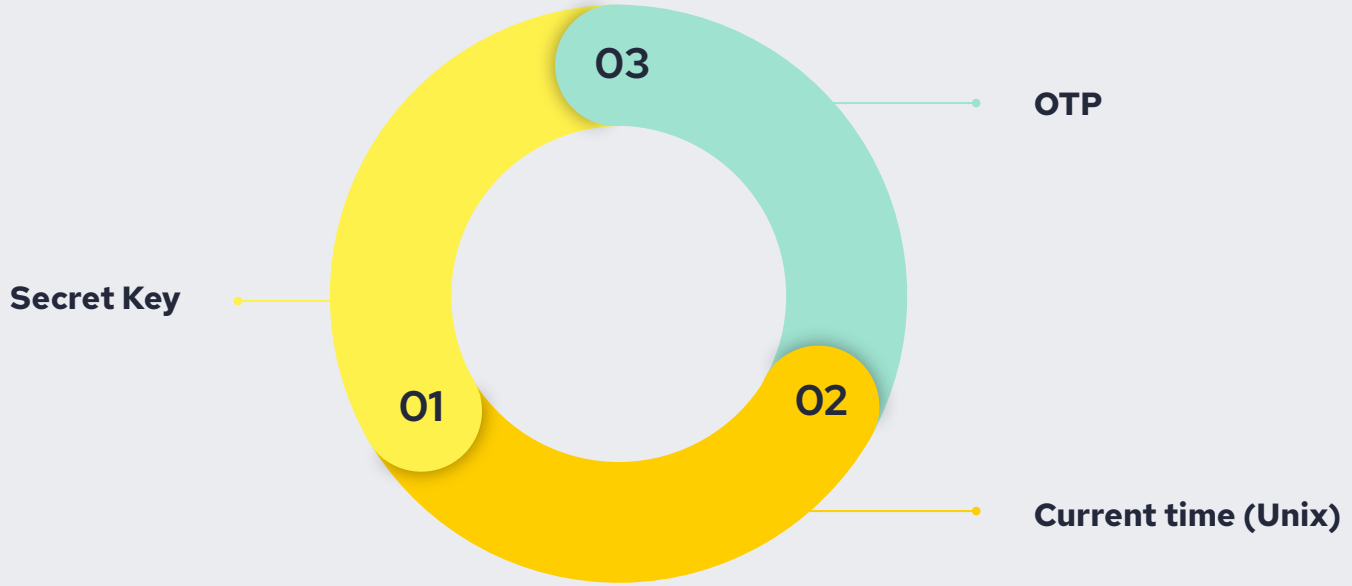
2 Les différentes manières de faire

Solution


Django 2FA library
Twilio
TOTP
Email
SMS
Phone
Yubikey
Auth application

3 Un exemple de TOTP

Le Time-based One Time Password



Exemple en code

```python
class UserModel(AbstractUser):
    id = models.UUIDField(primary_key=True, default=uuid.uuid4, editable=False)
    name = models.CharField(max_length=50)
    email = models.EmailField(max_length=100, unique=True)
    password = models.CharField(max_length=32)
    otp_enabled = models.BooleanField(default=False)
    otp_verified = models.BooleanField(default=False)
    otp_base32 = models.CharField(max_length=255, null=True)
    otp_auth_url = models.CharField(max_length=255, null=True)
    username = None
```

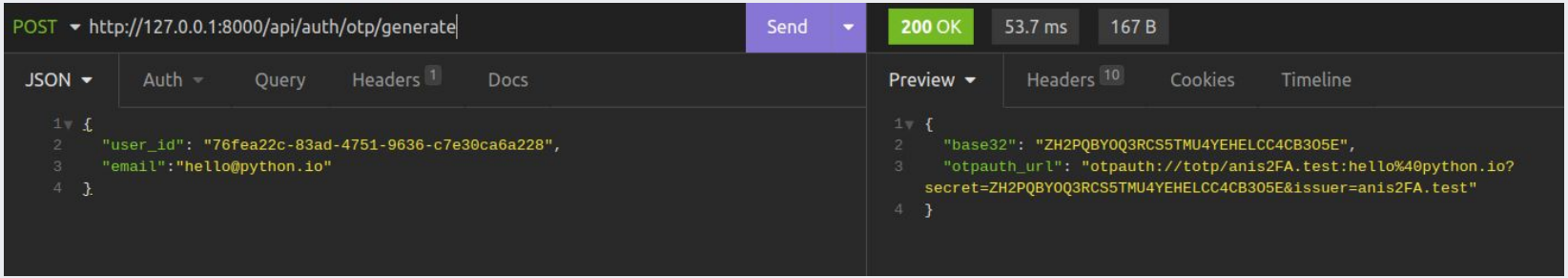
La première étape consiste à créer un modèle avec les attributs nécessaires

Exemple en code

Génération du QR Code qui contient l'url à relier à l'authenticator (GoogleAuth par exemple)

```python
class GenerateOTP(generics.GenericAPIView):
    serializer_class = UserSerializer
    queryset = UserModel.objects.all()

    def post(self, request):
        data = request.data
        user_id = data.get('user_id', None)
        email = data.get('email', None)

        user = UserModel.objects.filter(id=user_id).first()
        if user == None:
            return Response({"status": "fail", "message": f"No user with Id: {user_id} found"}, status=status.HTTP_404_NOT_FOUND)

        otp_base32 = pyotp.random_base32()
        otp_auth_url = pyotp.totp.TOTP(otp_base32).provisioning_uri(
            name=email.lower(), issuer_name="anis2FA.test")

        user.otp_auth_url = otp_auth_url
        user.otp_base32 = otp_base32
        user.save()
        qrcode.make(otp_auth_url) .save("qr_auth.png")

        return Response({'base32': otp_base32, "otpauth_url": otp_auth_url})
```

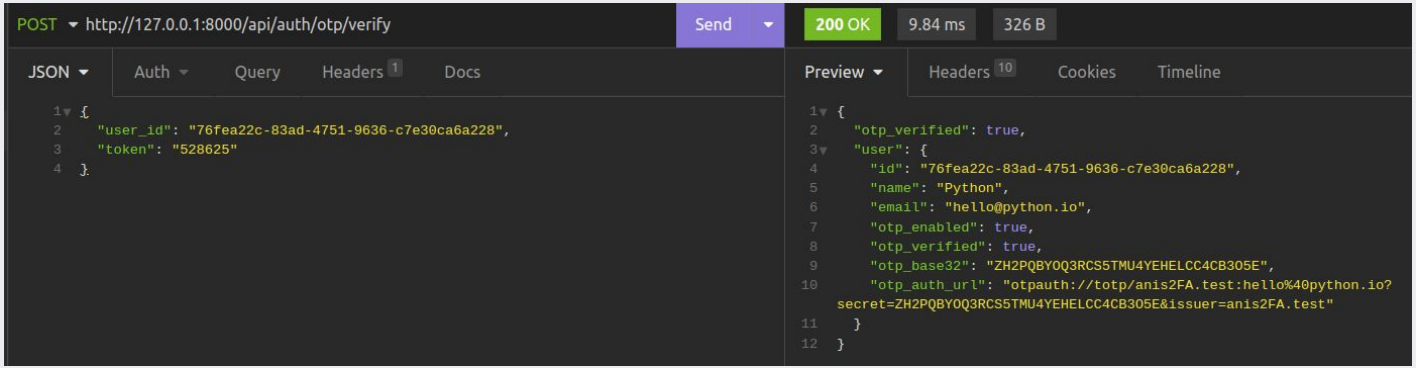
Exemple en code

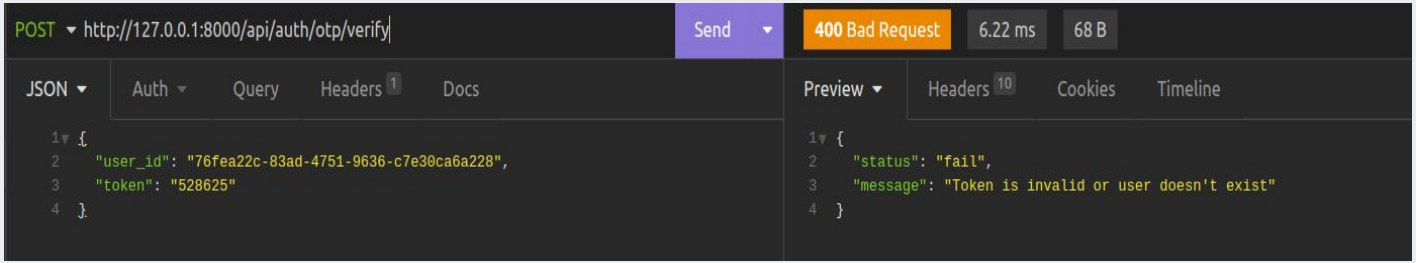


Exemple d'API Request afin d'obtenir l'url à ajouter dans l'application d'authentification

Exemple en code

Première request avec le token valide et la seconde 30sec plus tard qui est invalide





Thanks!

Sources:

- cybermalveillance.gouv.fr/
- wpcodevo/Django_2FA_Project
- django-two-factor-auth.readthedocs