

Datu bistaratze soluzioen garapena Smartcity proiektuetan

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2016-07-20

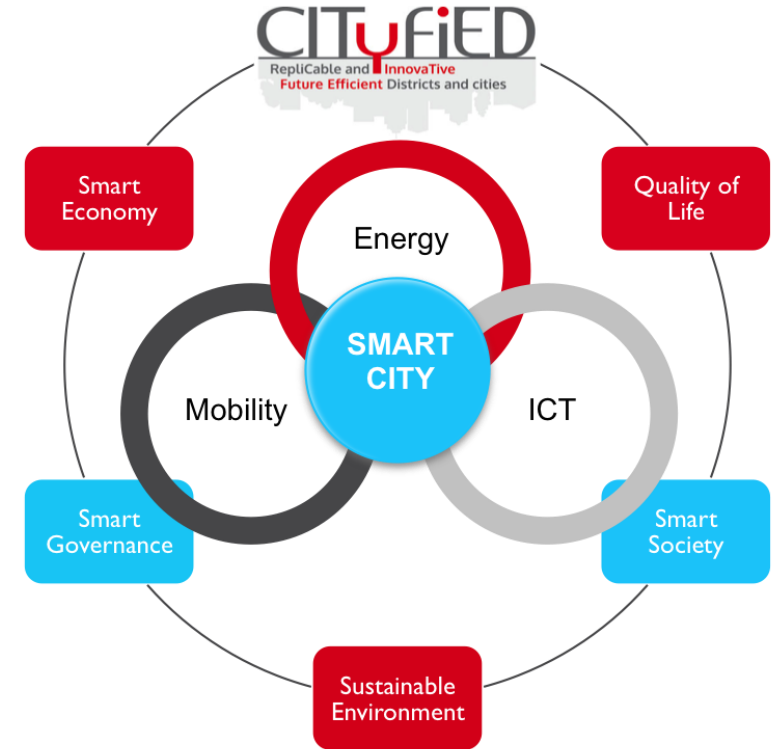
Mondragon Goi Eskola Politeknikoa - MU



EUROPYTHON
2016 Bilbao, 17-24 July

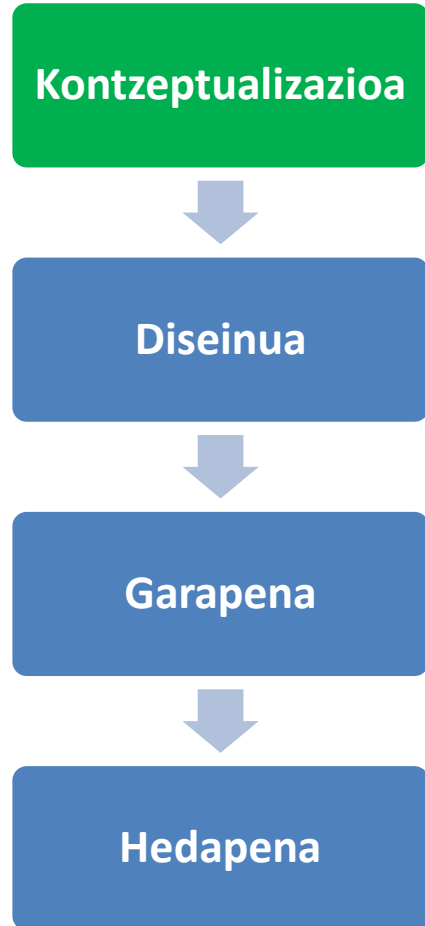
CITyFiED PROIEKTUA

- 21 Bazkide – 5 Europar herrialde
- 3 Frogapen gune (Suedia, Turkia eta Espainia)
- Finantziazioa - Europar Batasunaren VII Marco Programa
- Helburuak
 - Energia kontsumoaren/beharraren murrizketa
 - Distrituen berritze energetikoak
 - Kalefakzio sareak – Energia berriztagarriak
 - Metodologia eta prozedura berritzaileen garapena
 - Hedapen potentziala
- Monitorizazioa → BISTARATZE SOLUZIOAK

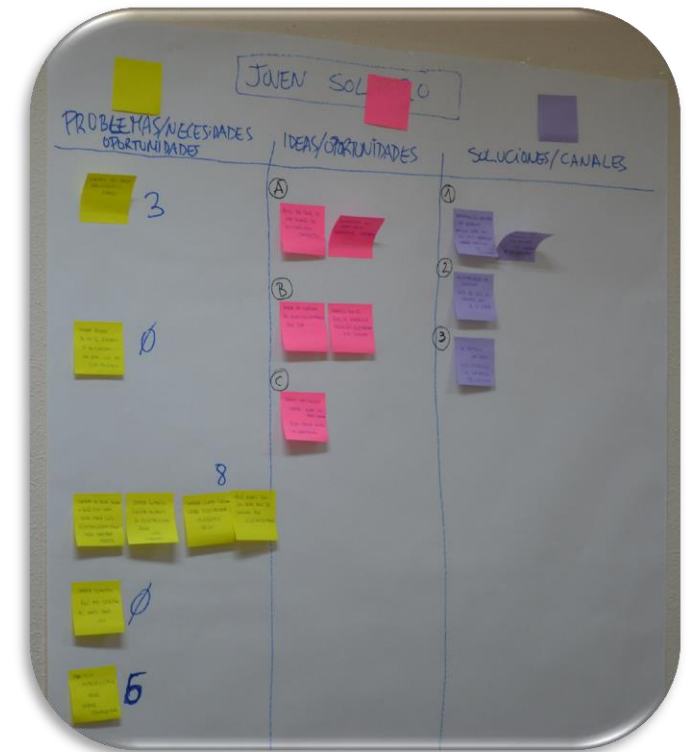


This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement No 609129

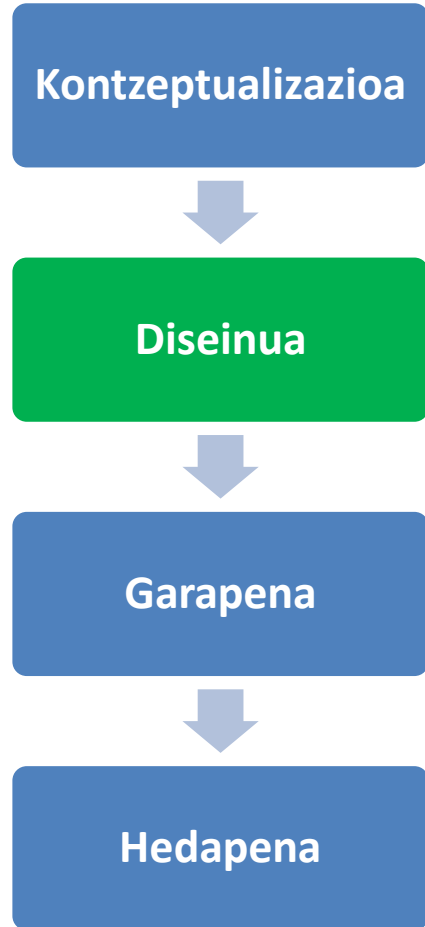
CITYFIED PROIEKTUA - METODOLOGIA



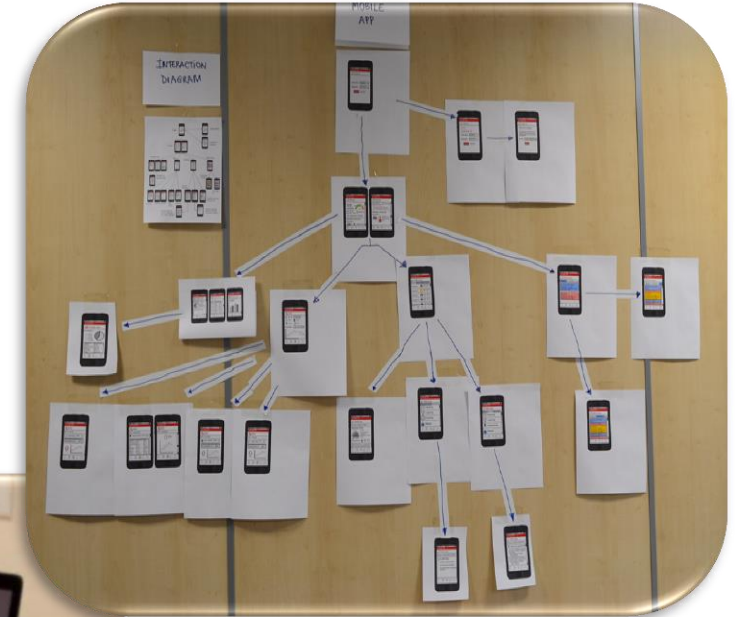
- Erabiltzaile eta soluzioen identifikazioa
- Identitate grafikoaren definizioa
- Teknologien identifikazioa
- Balio proposamena



CITYFIED PROIEKTUA - METODOLOGIA



- Esperientzia diseinua
- Diseinu estatikoa
- Diseinu analitikoa
- Erabiltzaileen testa
- Baldintza teknikoak



CITYFIED PROIEKTUA - METODOLOGIA

Kontzeptualizazioa



Diseinua

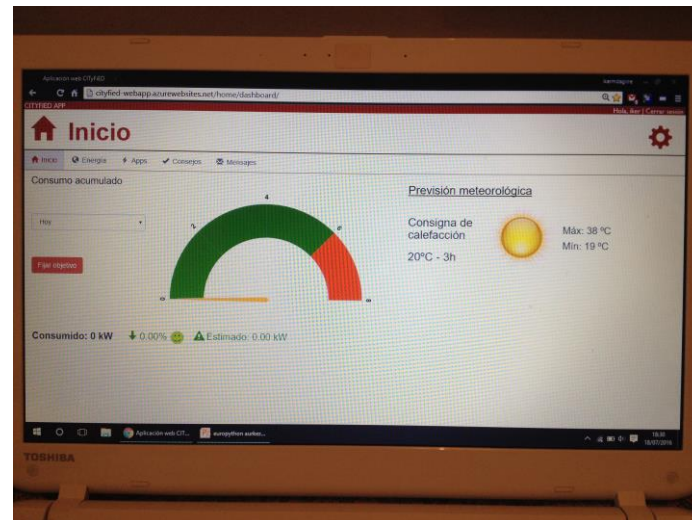


Garapena

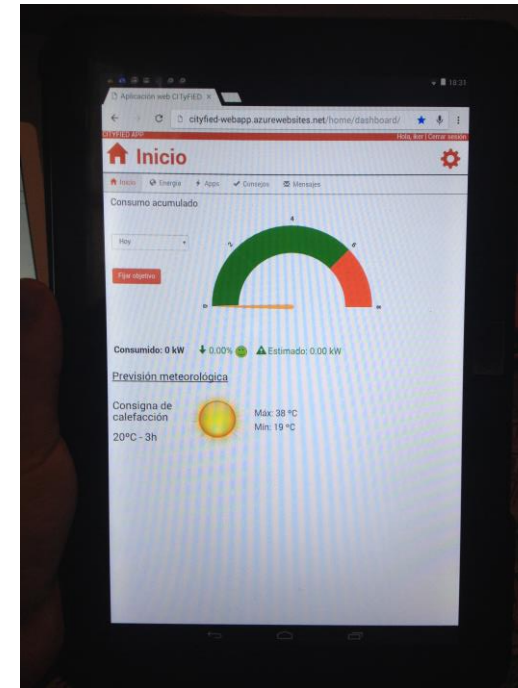


Hedapena

- Front End + Back End garapena
- Frogapena



PC



Tablet



Smartphone

CITYFIED PROIEKTUA - METODOLOGIA

Kontzeptualizazioa



Diseinua



Garapena



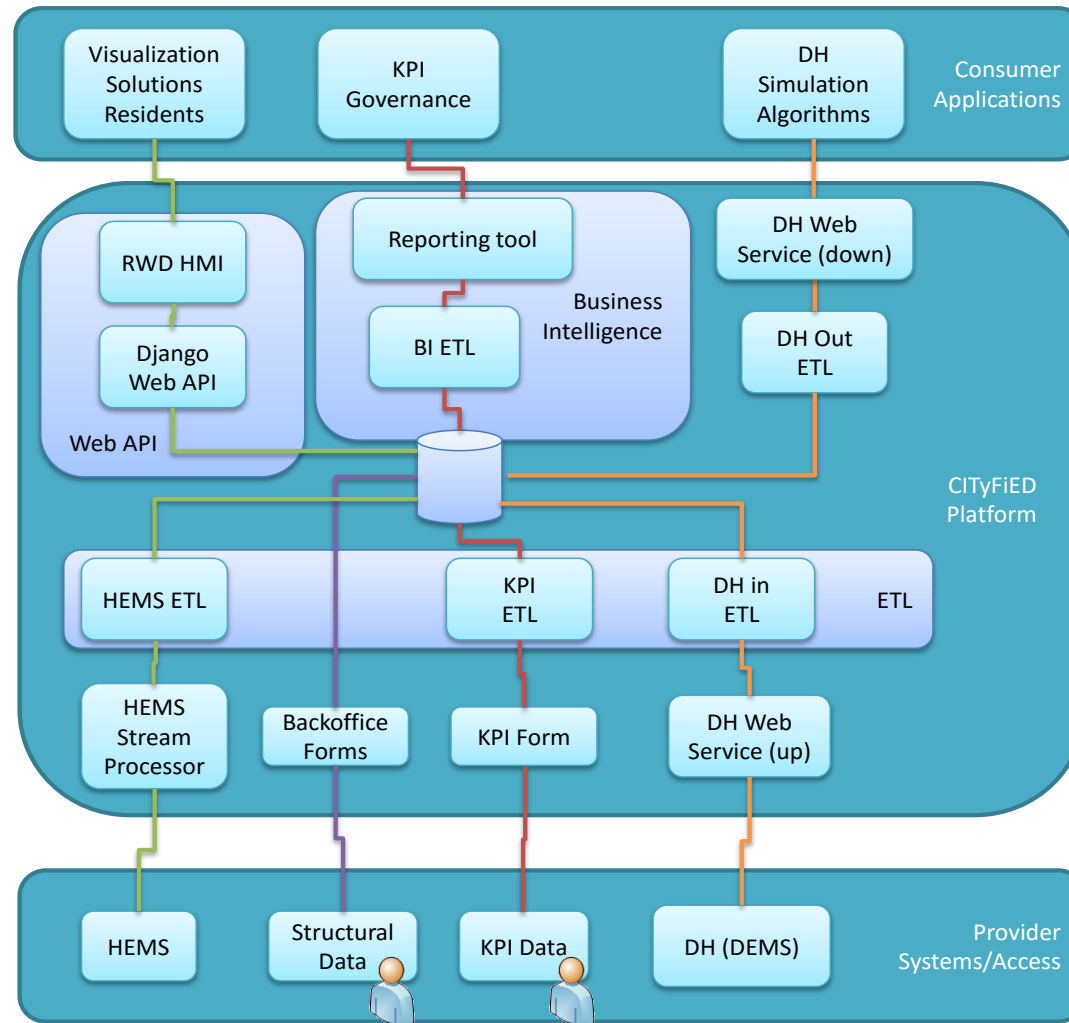
Hedapena

- Hedapena
- Monitorizazioa



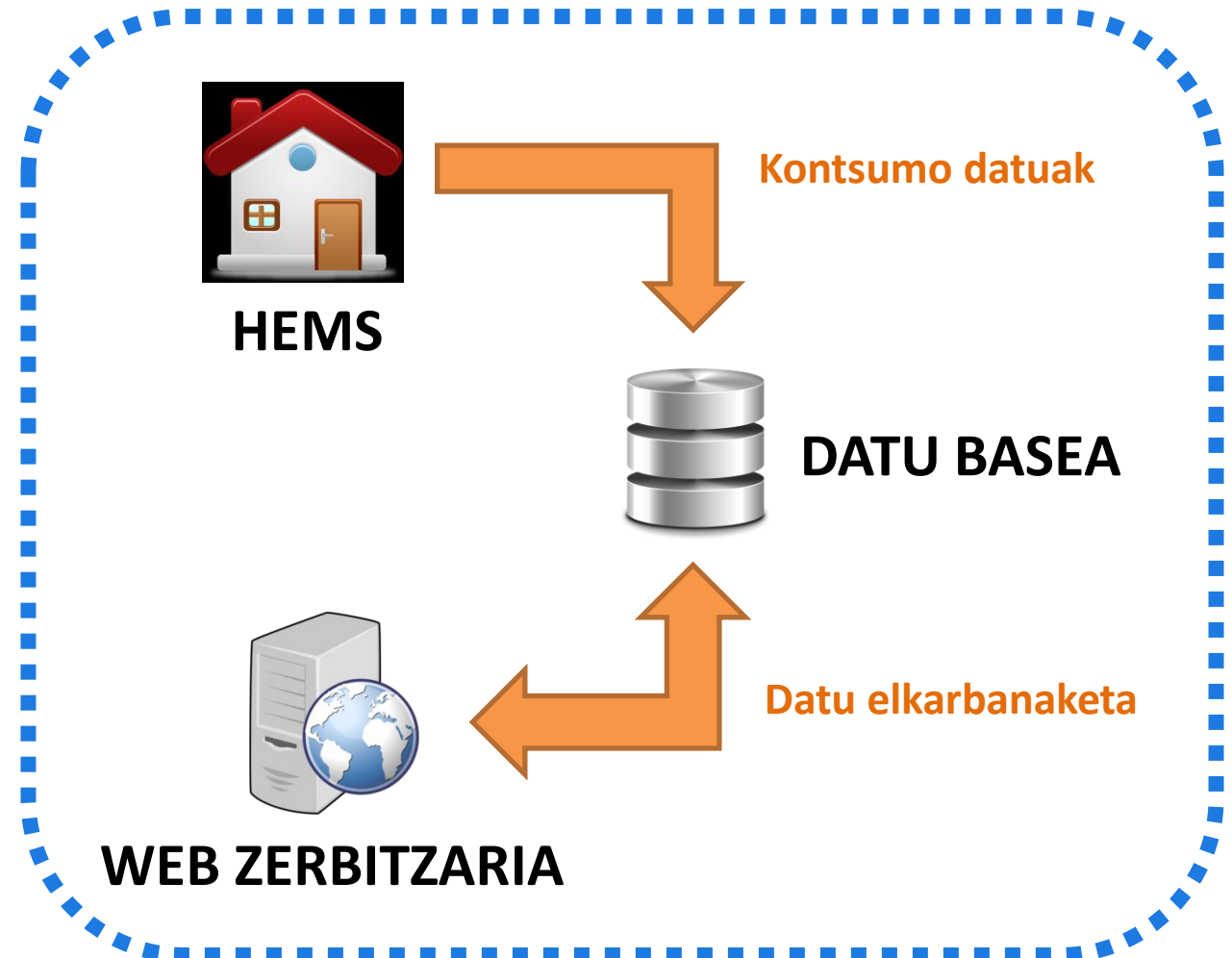
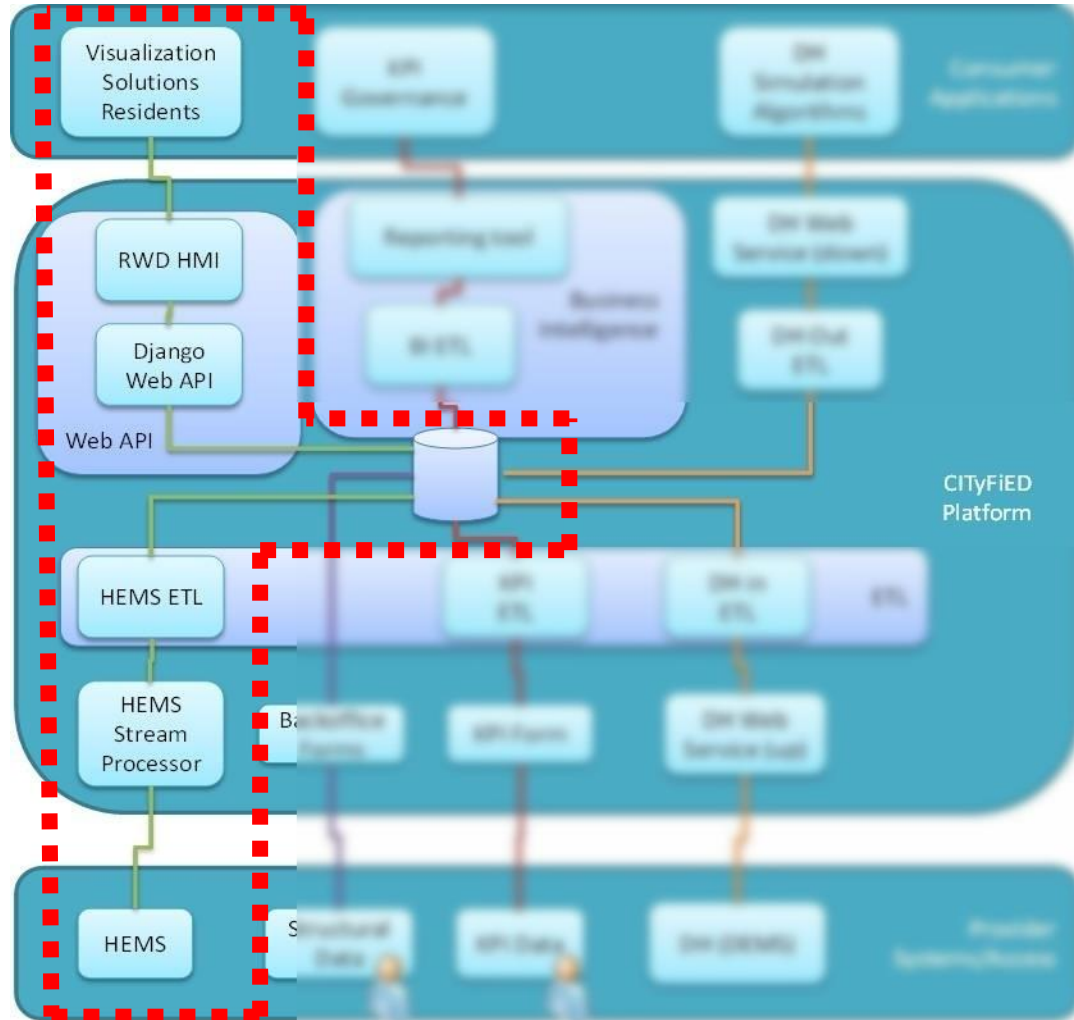
PROIEKTUAREN TESTUINGURUA - EKOSISTEMA

- Frogapen gunea: Torrelago distritua, Laguna De Duero, Valladolid



PROIEKTUAREN TESTUINGURUA - EKOSISTEMA

- Frogapen gunea: Torrelago distritua, Laguna De Duero, Valladolid



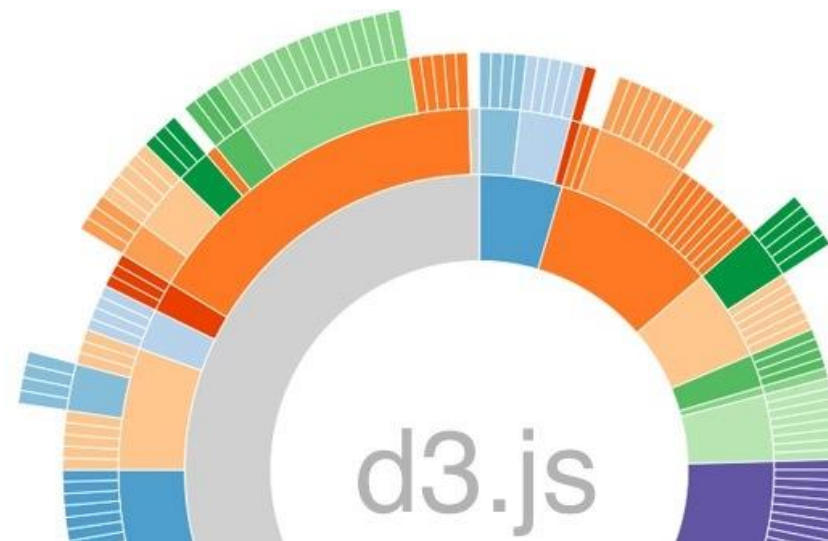
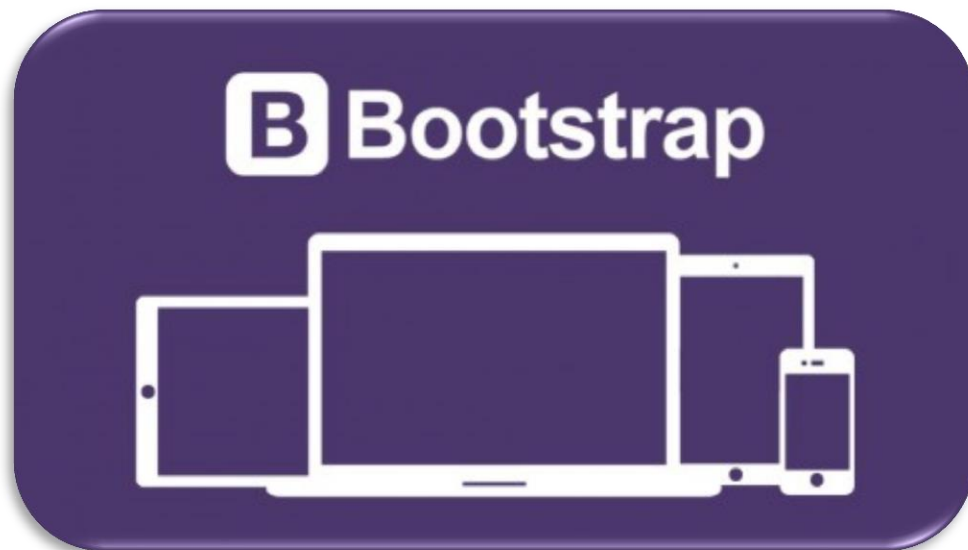
SOLUZIO TEKNOLOGIKOA: WEB APLIKAZIOA

- Web aplikazioa → Django Web Framework
- Gailu ezberdinetara moldakorra (Responsive Web Design)
- Edukia
 - Kontsumo energetikoa
 - Egunekoa & Hilabetekoa
 - Familiaka → Bilakaera
 - Etxetresnaka
 - Gomendioak
 - Orokorrak & Pertsonalizatuak
 - Alertak
 - Eguraldia & Kalefakzio gomendioa



SOLUZIO TEKNOLOGIKOA – FRONT-END

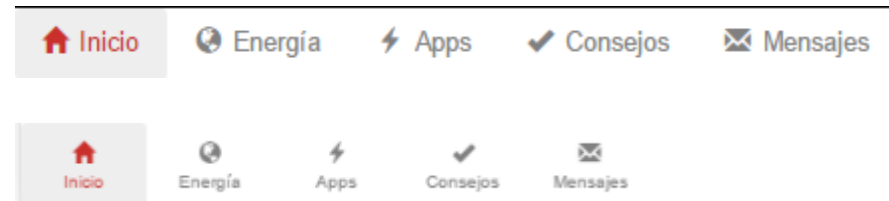
- Programazio lengoaiak: HTML – CSS – Javascript
- Mobile-First, Responsive Web Design → Telefono mugikorrek, tabletak, PC
- Baliabide grafikoak



SOLUZIO TEKNOLOGIKOA – FRONT-END

- Bootstrap

- Pantailaren egitura → Zutabeak
- Menuak
- Formularioak
- Botoiak, “select” elementuak



```
<div id="row-fluid">
  <div class="col-lg-7 col-sm-12 col-xs-12" id="home-main">
    <h5>{% trans "Already consumed" %}</h5>
    <div class="row" id="home-main">
      <div class="col-lg-4 col-sm-3 col-xs-5" id="home-options">
        <select class="form-control" id="time-selector" onchange="onSelectionChange(this)">
          <option value="1">{% trans "Today" %}</option>
          <option value="2">{% trans "This month" %}</option>
        </select>
        <button type="button" class="btn btn-danger" id="target-button">{% trans "Set target" %}</button>
      </div>
      <div class="col-lg-3 col-md-4 col-sm-4 col-xs-7" id="gauge-container">
        <div id="power-gauge"></div>
      </div>
    </div>
    <div id="home-info">
      <span id="home-used"></span>
      <div id="difference-section"></div>
      <div id="home-forecasted"></div>
    </div>
  </div>
</div>
```

SOLUZIO TEKNOLOGIKOA – FRONT-END

- d3.js
 - Datu eskaerak (GET)
 - Kontsumo grafikoak
 - “Angular gauge” → Egunerokotasuneko kontsumoa
 - Lerro grafikoak → Kontsumoaren bilakaera

```
// Parse the date / time
var parseDate = d3.time.format("%Y-%m-%d").parse;

// Set the ranges
var x = d3.time.scale().range([0, width]);
var y = d3.scale.linear().range([height, 0]);

// Define the axes
var xAxis = d3.svg.axis().scale(x)
    .orient("bottom");

var yAxis = d3.svg.axis().scale(y)
    .orient("left").ticks(5);

var valueline;
// Define the line
valueline = d3.svg.line()
    .x(function(d) { return x(d.date); })
    .y(function(d) { return y(d.bill); });

// Adds the svg canvas
var svg = d3.select("#trend-graph")
    .append("svg")
    .attr("width", width + margin.left + margin.right)
    .attr("height", height + margin.top + margin.bottom)
    .attr("width", width + margin.right)
    .attr("height", height + margin.bottom)
    .append("g")
    .attr("transform", "translate(" + margin.left + "," + margin.top + ")");
```

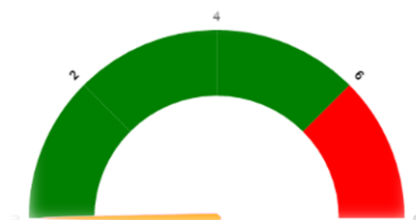
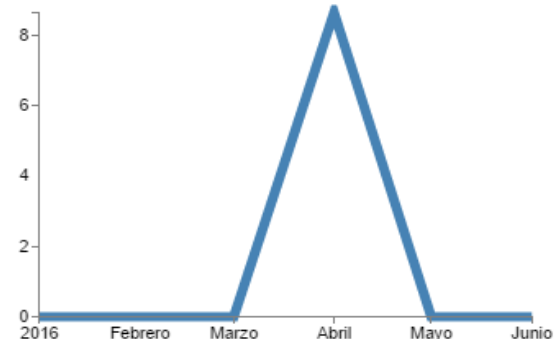
```
data.forEach(function(d) {
    d.date = parseDate(d.date);
    d.bill = +d.bill;
});

// Scale the range of the data
x.domain(d3.extent(data, function(d) { return d.date; }));
y.domain([0, d3.max(data, function(d) { return d.bill; })]);
// Add the valueline path.
svg.append("path")
    .attr("class", "line")
    .attr("d", valueline(data));

// Add the X Axis
svg.append("g")
    .attr("class", "x axis")
    .attr("transform", "translate(0," + height + ")")
    .call(xAxis);

// Add the Y Axis
svg.append("g")
    .attr("class", "y axis")
    .call(yAxis);
```

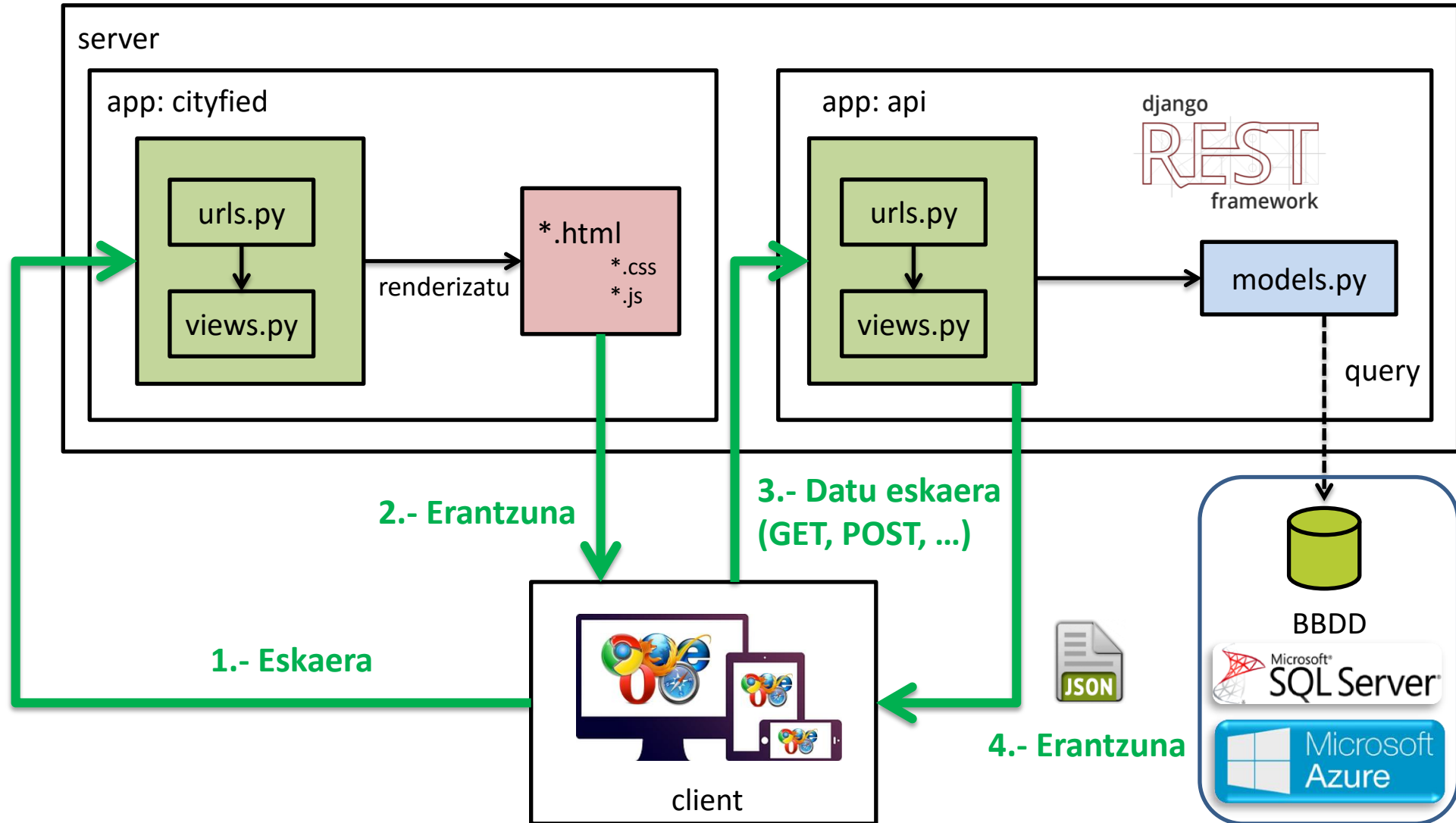
Tendencia del gasto (Últimos 6 meses)



```
function getMessages(mode){
    d3.json(url, function(error, json){
        if (error){
            return console.warn(error);
        }
        createMessagesList(json, mode);
    });
}
```

SOLUZIO TEKNOLOGIKOA – BACK-END

DJANGO – CITYFIED PROJECT



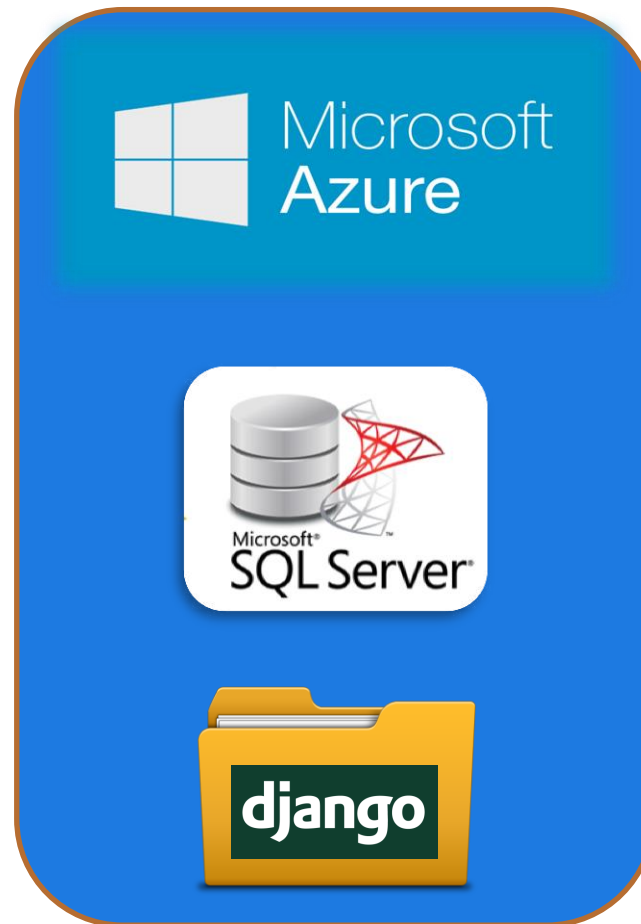
SOLUZIO TEKNOLOGIKOA – BACK-END

Funtzioa	Python paketeak
Django	django
Django REST	djangorestframework
SQL Server DB (Azure) konexioa	django-mssql, pyodbc, django-pyodbc-azure
Azure integrazioa	azure, azure-common, azure-mgmt, azure-mgmt-common, azure-mgmt-compute, azure-mgmt-network, azure-mgmt-nspkg, azure-mgmt-resource, azure-mgmt-storage, azure-nspkg, azure-servicebus, azure-servicemanagement-legacy, azure-storage
Pasahitzen enkriptazioa	bcrypt
Eguraldiaren iragarpenaren interpretazioa	lxml
Python “datetime” moduloak	python-dateutil
Itzulpenak	python-gettext
Cache (eguraldia)	python-memcached

DJANGO – MICROSOFT AZURE



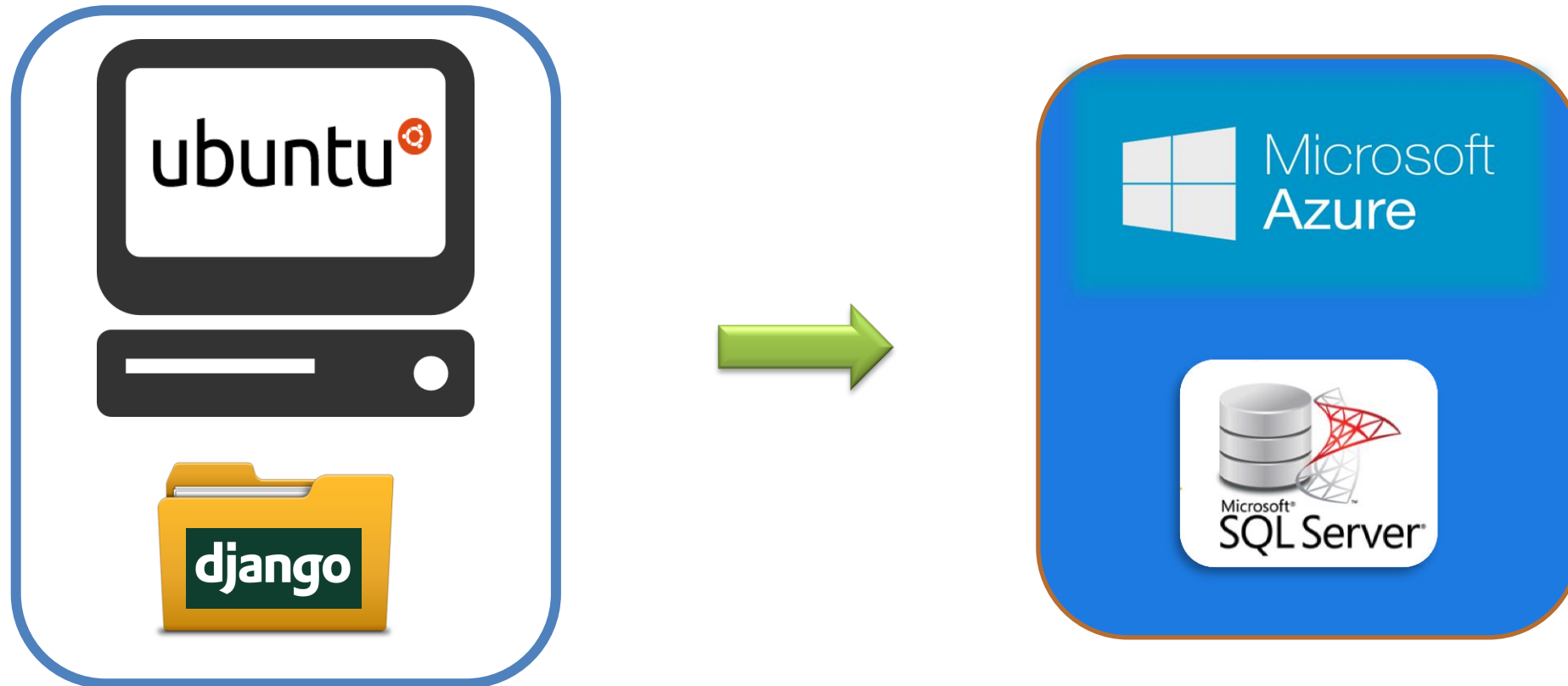
1. Eszenarioa



2. Eszenarioa

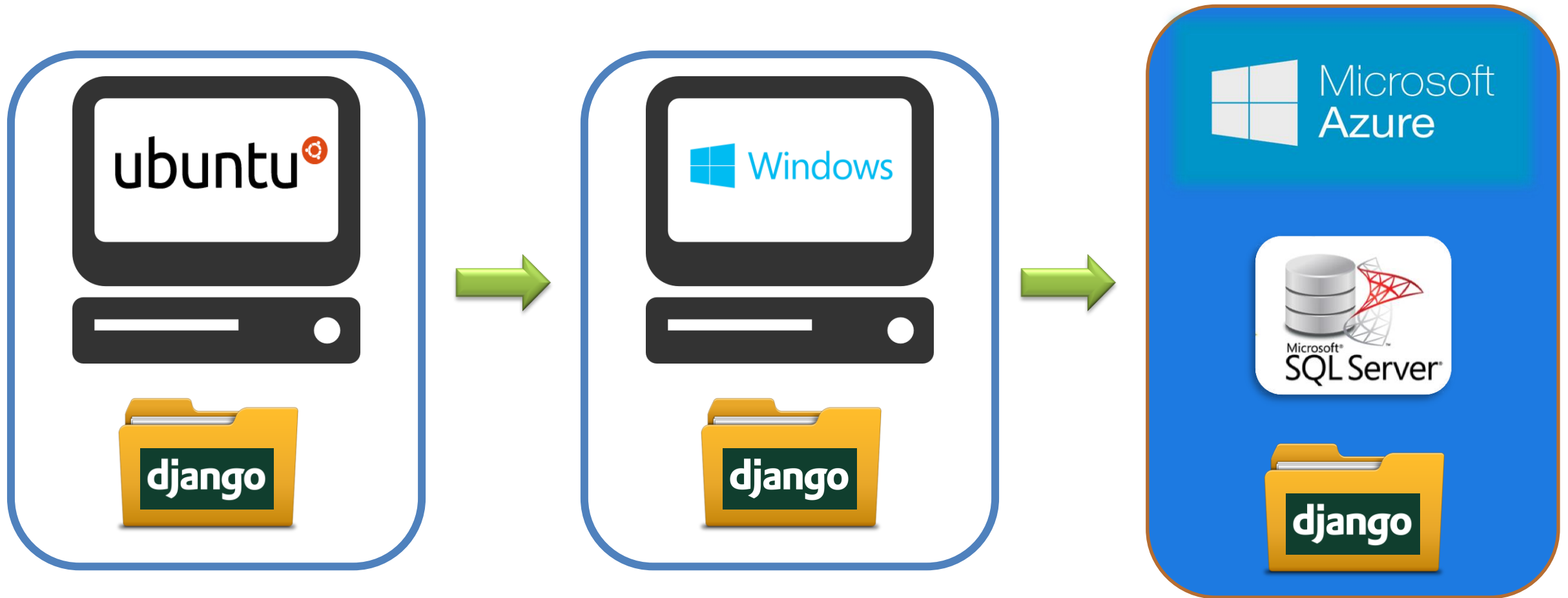
DJANGO – MICROSOFT AZURE

1. Pausoa: Django (Ubuntu) → SQL Server DB (Microsoft Azure)



DJANGO – MICROSOFT AZURE

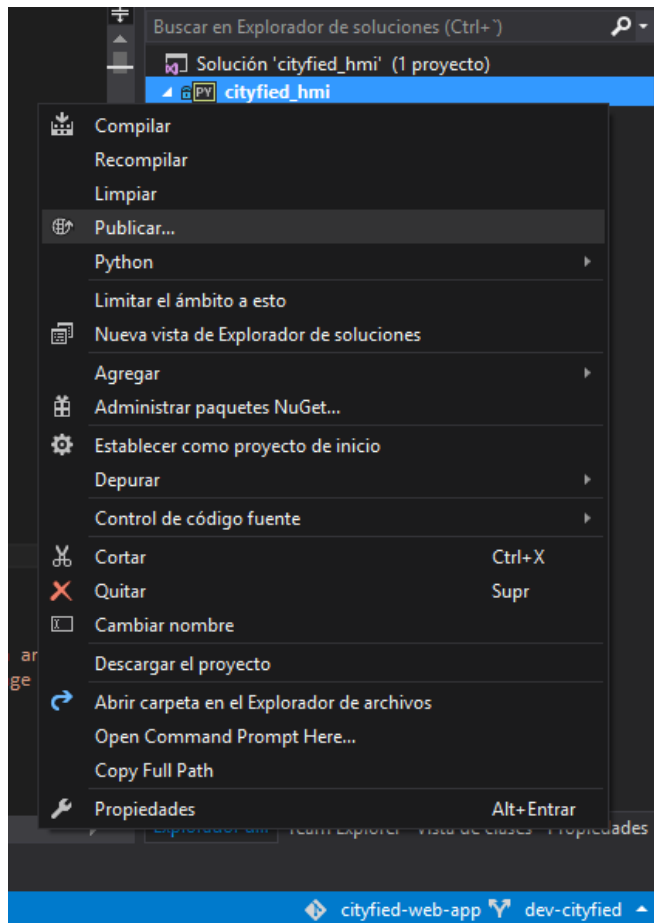
2. Pausoa: Django (Ubuntu) → Django (Windows) → Django & SQL Server (Microsoft Azure)



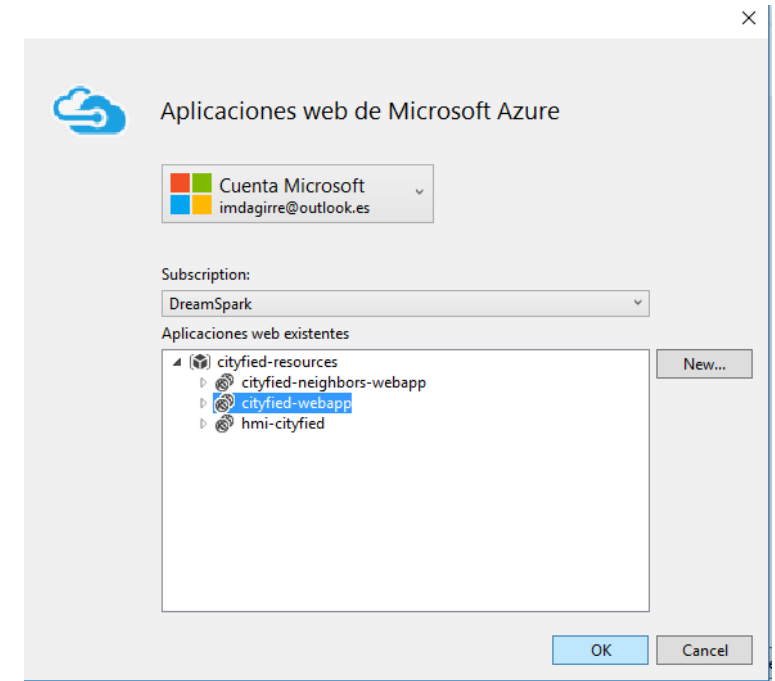
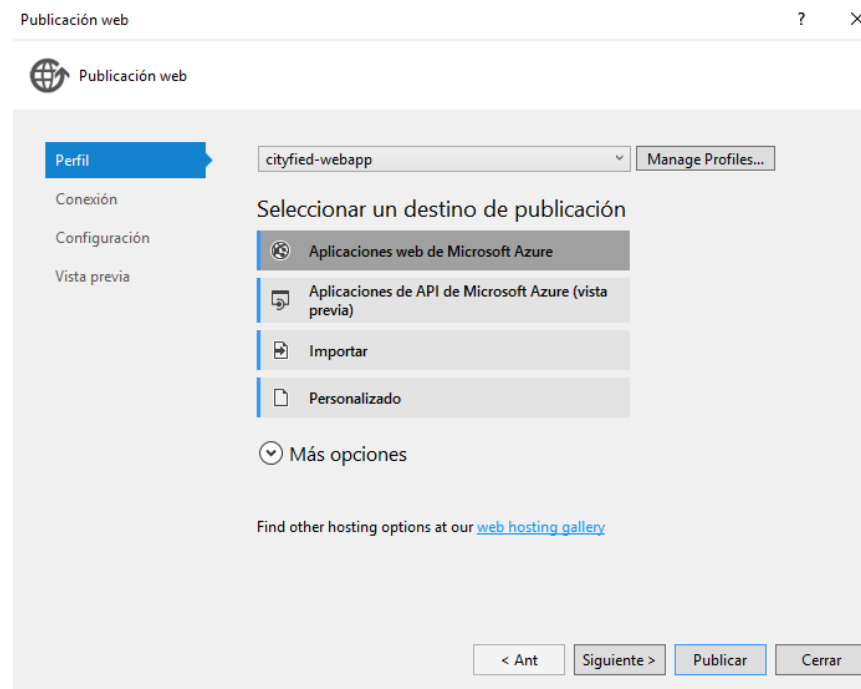
DJANGO – MICROSOFT AZURE



1.- Publikatu



2.- Web app aukeratu/sortu



DJANGO – MICROSOFT AZURE



3.- Konexio ezarpenak

Publicación web

Publicación web

Perfil

Conexión

Configuración

Vista previa

cityfied-webapp (4)

Publish method: Web Deploy

Server: cityfied-webapp.scm.azurewebsites.net:443

Site name: cityfied-webapp

User name: \$cityfied-webapp

Password: [Redacted]

☒ Save password

Destination URL: http://cityfied-webapp.azurewebsites.net

Validate Connection ☒

< Ant Siguiente > Publicar Cerrar

4.- Ezarpen gehigarriak + aurreikuspena

Publicación web

Publicación web

Perfil

Conexión

Configuración

Vista previa

cityfied-webapp (4)

Configuration: Release

☒ File Publish Options

☐ Remove additional files at destination

☐ Precompile during publishing [Configure](#)

☐ Exclude files from the App_Data folder

Databases

No databases found in the project

< Ant Siguiente > Publicar Cerrar

cityfied-webapp (4)

cityfied-webapp.scm.azurewebsites.net:443: cityfied-w... buscar

	Nombre	Acción	Fecha de modificación	Tamaño
<input checked="" type="checkbox"/>				

Comenzar previsualización

< Ant Siguiente > Publicar Cerrar

DJANGO – MICROSOFT AZURE



Aplicación web CITYfIED x ikermdagire

cityfied-webapp.azurewebsites.net/home/login/

CITYfIED APP

Inicio de sesión

Nombre de usuario:

Contraseña:

[¿Olvidado?](#)

CITYfIED
ReplíCable and InnovaTive
Future Efficient Districts and cities

ETORKIZUNeko ILDOAK

- **Errekomendazio & Mezu sistema automatizatu**
 - Erabiltzaileen kontsumoan oinarritua
- **Front-End optimizazioa**
 - Errekurtso grafiko gehiago erabili
 - RWD Ezaugarriak hobetu → Pantailen neurri tarte handitu
- **Back-End optimizazioa**
 - Django teknologian sakondu
 - Itzulpenerako tresna espezializatuak → Django Rosetta
 - Eguraldiaren datuak → Internazionalizazioa
 - Azure teknologian sakondu



ESKERRIK ASKO



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GOI ESKOLA
POLITEKNIKO
A
ESCUELA
POLITÉCNICA
SUPERIOR



EUROPYTHON
2016 Bilbao, 17-24 July