

GIS (GEOGRAPHIC INFORMATION SYSTEM) WITH REACT

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WHAT IS GIS?

APA SIH GIS ITU?

Geographic Information System disingkat **GIS**) adalah sistem informasi khusus yang mengelola data yang memiliki informasi spasial (bereferensi keruangan) atau data geografis.

Sumber : wikipedia

GIS TIMELINE!!

GIS Timeline

Credit : Adipandang Yudono



The Beginning of GIS.
Pioneered by Roger Tomlinson in 1962

GIS

The term of "GIS" published by MF. Dacey & DF. Marble in 1965



ESRI Founded in 1969



Map overlay and statistical system developed by The US. Department of Interior in 1979



GRASS GIS (The 1st GIS Free Open Source Software) launched in 1985



ArcView[®] GIS
ArcView Released in 1991



Publication of Shapefile (SHP) Format by ESRI in 1998



QGIS released in 2002



Google Maps Launched in 2005

"VGI" Term published By MF. Goodchild in 2007



1960

Establishment of Urban and Regional Information System Association (URISA) in 1966

URISA

First LANDSAT Satellite launched in 1972

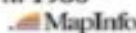
Landsat

1980

Arc Info Released and SPOT Image founded in 1982



Mapinfo founded in 1986



1990

First WebGIS developed by Steve Putz in the Xerox PARC Map viewer in 1993



ARC GIS by ESRI released in 1999



2000

OpenStreetMap Founded in 2004



Google Earth Released in 2005



2010

STUDY CASE:



Daloket



Gisbws
NT 1



SIAP
NTB



KQS APP



GIS

```
graph TD; GIS[GIS] --> GEOMETRY[GEOMETRY]; GIS --> PROPERTY[PROPERTY];
```

A hierarchical diagram with 'GIS' at the top level. Two lines descend from the bottom center of the 'GIS' box to the top center of two separate boxes below it. The left box is labeled 'GEOMETRY' and the right box is labeled 'PROPERTY'. All boxes are white with black outlines and text.

GEOMETRY

PROPERTY

GEOMETRY

```
graph TD; GEOMETRY[GEOMETRY] --> POINT[POINT]; GEOMETRY --> LINESTRING[LINE STRING]; GEOMETRY --> POLYGON[POLYGON]; GEOMETRY --> MULTIPOLYGON[MULTI POLYGON]; GEOMETRY --> MULTILINESTRING[MULTI LINESTRING];
```

POINT

LINE
STRING

POLYGON

MULTI POLYGON

MULTI
LINESTRING

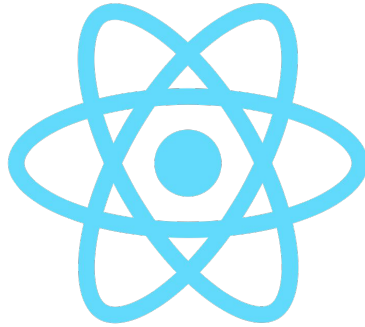
PROPERTY

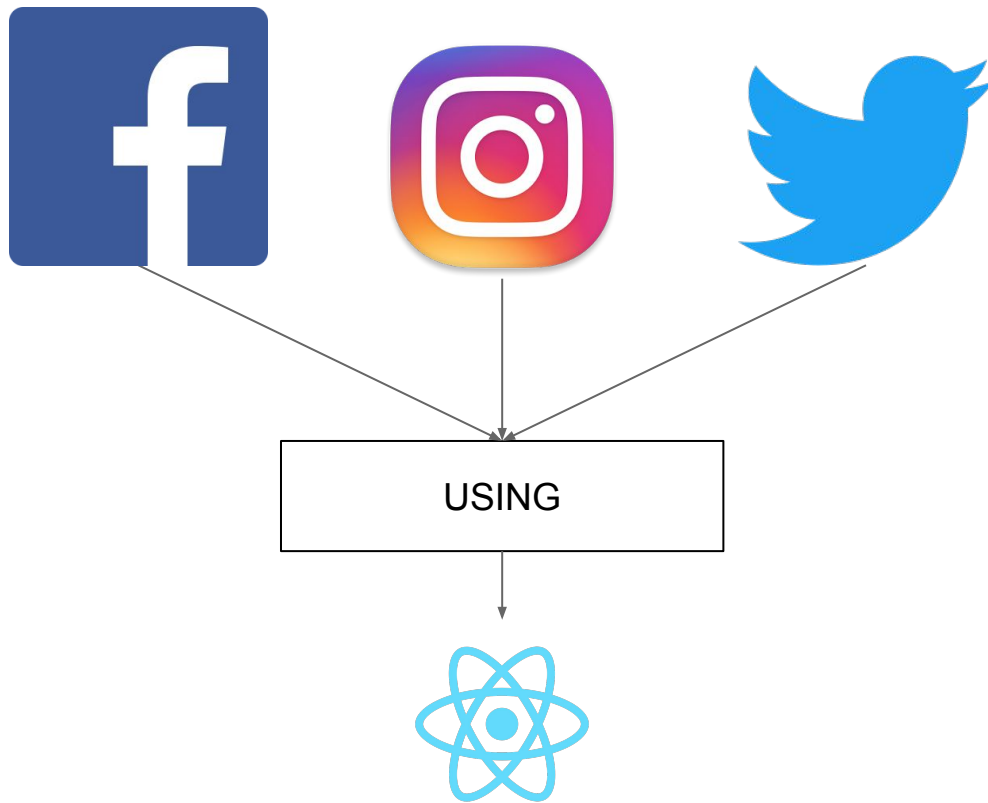
Data Geometry hanyalah bentuk angka-angka. Untuk menerangkan data tersebut dibutuhkan property untuk merepresentasikan data tersebut.

WEB GIS



REACT






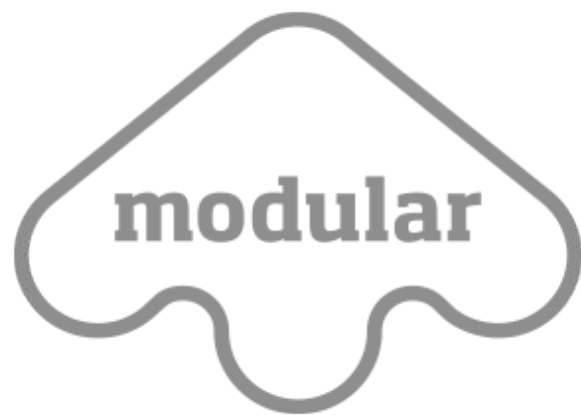
WHAT IS REACT?

React merupakan suatu pustaka(library) yang digunakan untuk membuat User Interface(UI).

WHY REACT?

The logo features the word "fast" in a bold, italicized, blue sans-serif font. To the left of the text are three horizontal blue lines of increasing length, creating a sense of motion or speed.

fast







GIS WITH REACT

Tools :

1. Sample API
2. React
3. Google Maps API with Key
(<https://console.developers.google.com>)
4. Text Editor

TODO:

1. Install React using CLI.
2. Menampilkan Map di project kita.
3. Setting Control Interaction.
4. Menampilkan data ke Map.
5. Mengambil data dari map berupa koordinat untuk disimpan ke dalam database.

INSTALL REACT USING CLI

1. Pastikan Nodejs sudah terinstall.
2. Install package 'create-react-app' menggunakan npm:
bash: npm install -g create-react-app
3. Install react menggunakan command berikut:
bash: create-react-app <app_name>
4. Masuk ke directory <app_name>
5. Jalankan perintah berikut :
bash: npm start

MENAMPILKAN MAP DI PROJECT

1. Pastikan anda sudah mendaftarkan account google anda di `console.developer.google.com` untuk dapat menggunakan google map API serta mendapatkan credentials key.
2. Tambahkan script berikut di `index.html` yang ada di directory public project anda.

```
<script src="https://maps.googleapis.com/maps/api/js?key=YOUR_API_KEY" async defer></script>
```
3. Membuat component dimana map akan ditampilkan.

SETTING CONTROL INTERACTION

See Instruction...!

Menampilkan data ke Map.

See Instruction...!

Mengambil Data Coordinate Dari Map

See Instruction...!

TERIMA KASIH
ATAS PERHATIANNYA.