



Insan-Bilgisayar Etkilesimi ve Gorsellik

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Gorsellik

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Amaclar

Gorsellik kavrami

Bilginin gorsellestirilmesi

Neden gorsellik

Gorsellestirmenin turleri

Gorsellestirme ornekleri

Gorsellik (Visualisation) kavrami

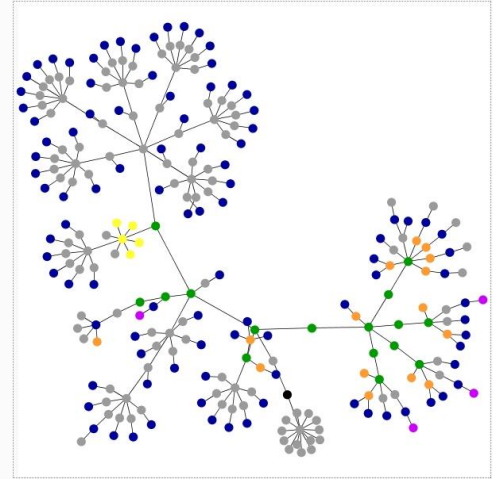
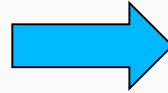
Semboligin geometrik yapiya donusumu

Ham verilerin gorulebilir ve anlasilabilir bir formata donusturulmesi

Bilginin gorsellestirilmesi

2D veya 3D alanda iyi tanımlanmış bir temsili olmayan verilerle ilgilidir (yani, “soyut veriler”)

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http://www.bu.edu/students/life/  
http://www.bu.edu/students/life/housing/  
http://www.bu.edu/students/life/dining-vending/  
http://www.bu.edu/students/life/phone/  
http://www.bu.edu/students/life/safety/  
http://www.bu.edu/students/life/transportation/  
http://www.bu.edu/students/life/activities/  
http://www.bu.edu/students/life/bu-global-orientation-registration/  
http://www.bu.edu/students/academics/  
http://www.bu.edu/students/academics/link/  
http://www.bu.edu/students/academics/admissions/  
http://www.bu.edu/students/academics/registration/  
http://www.bu.edu/students/academics/advising/  
http://www.bu.edu/students/academics/grades/  
http://www.bu.edu/students/academics/services/  
http://www.bu.edu/students/academics/support/  
http://www.bu.edu/students/health/  
http://www.bu.edu/students/health/services/  
http://www.bu.edu/students/health/counseling/  
http://www.bu.edu/students/health/facilities/  
http://www.bu.edu/students/health/clubsports/  
http://www.bu.edu/students/health/varsitysports/
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Bilginin gorsellestirilmesi

- Problem

Buyuk veri, veritabanlari: Nasil anlayacagiz?

- Cozum

Insan bilis (duyu ve algilar) sistemini tamamiyla kullanmak
Bilginin grafiksel bir sunuma donusturulmesi

- Sorunlar

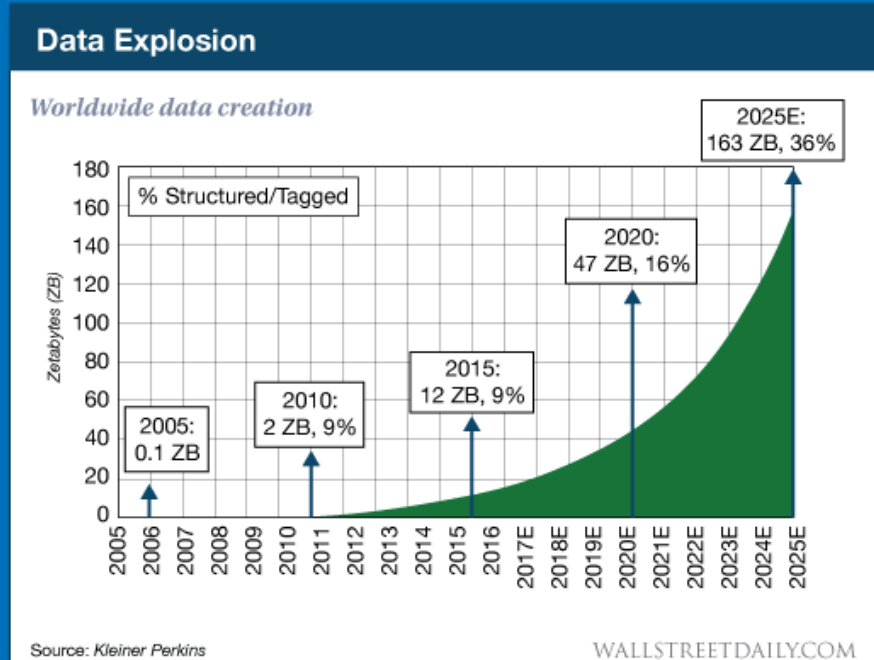
Soyut verileri nasil grafige cevirebiliriz?

Gorsellestirme diger metodlardan daha mi iyi?

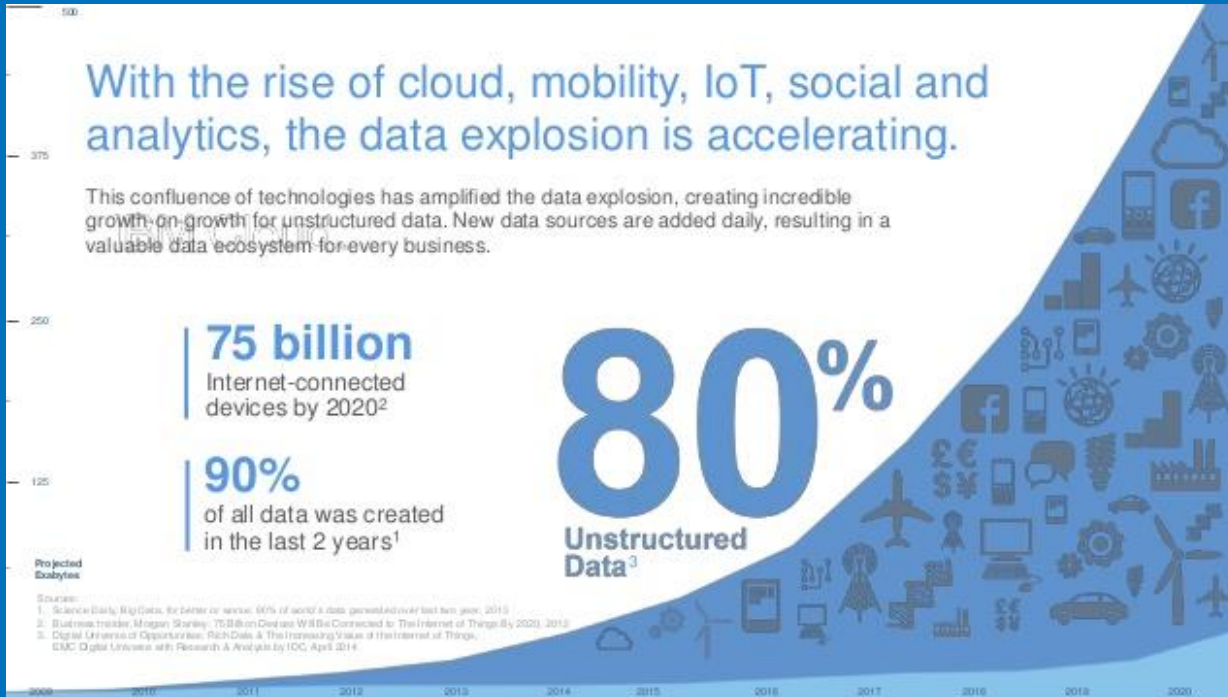
Gorsellestirmenin amaclari

- Buyuk veri kumelerini iliskili hale getirmek
- Bilgiyi kompakt bicimde sunmak
- Bilgiyi farkli acilardan sunmak
- Bilgiyi cesitli detay seviyelerinde sunmak (genelden ozele)
- Gorsel karsilastirmalar yapmak
- Veri hakkında bir hikaye anlatmak

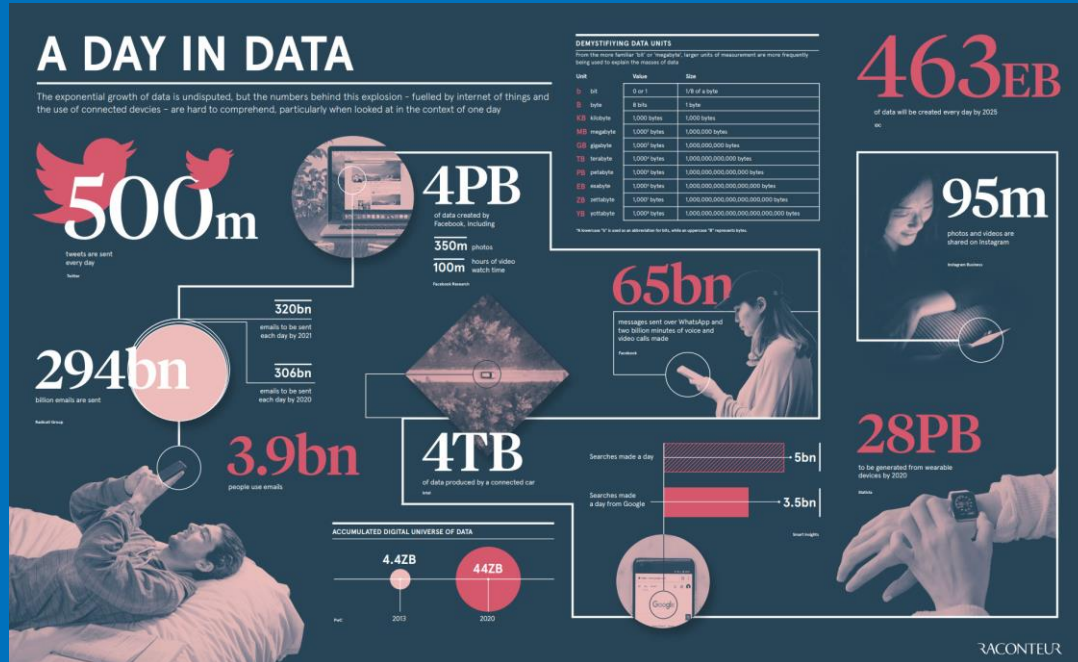
Neden gorsellik?



Neden gorsellik?



Peki veri nereden geliyor?



Gorsellestirmenin turleri

<https://datavizcatalogue.com>

<https://github.com/ft-interactive/visual-vocabulary>

<https://github.com/ft-interactive/chart-doctor>

<https://www.data-to-viz.com>

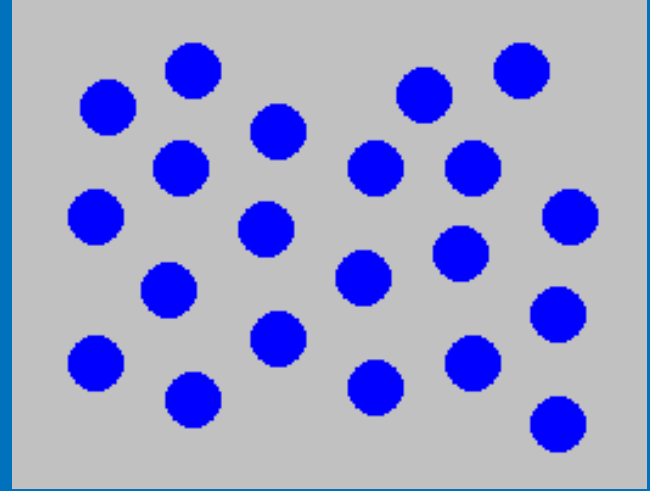
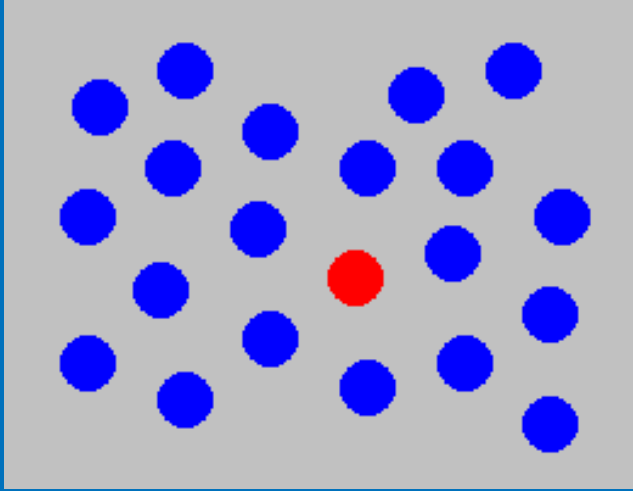
Dikkat oncesi (preattentive) isleme

Bazı özellikler dikkat oncesi islenebilir (dikkatli odaklanmaya gerek kalmadan)

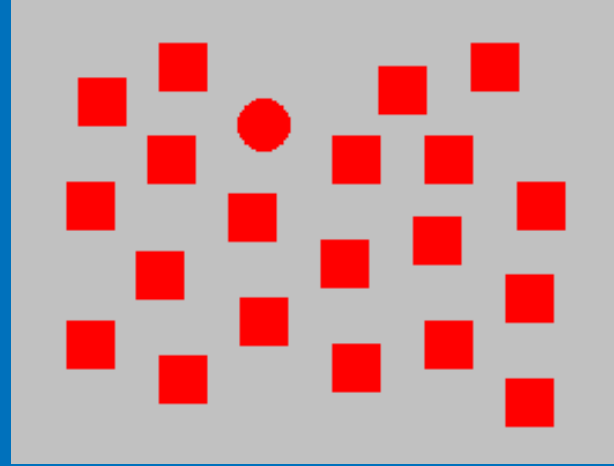
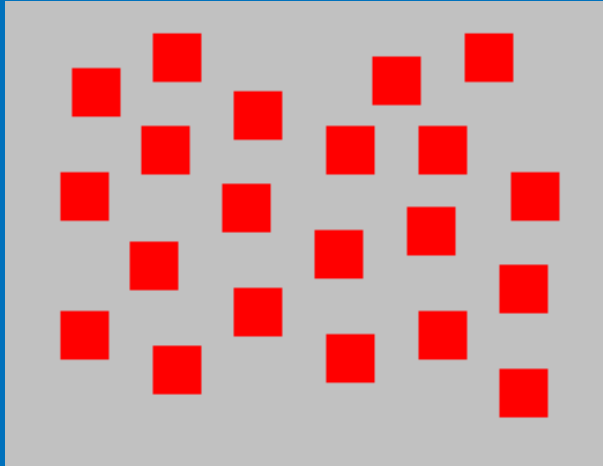
Gorsellestirme ve tasarim icin önemli

- Hemen ne algılanabilir?
- Hangi özellikler iyi bir ayırmacıdır?
- Kullanıcıları ne yönlendirebilir?

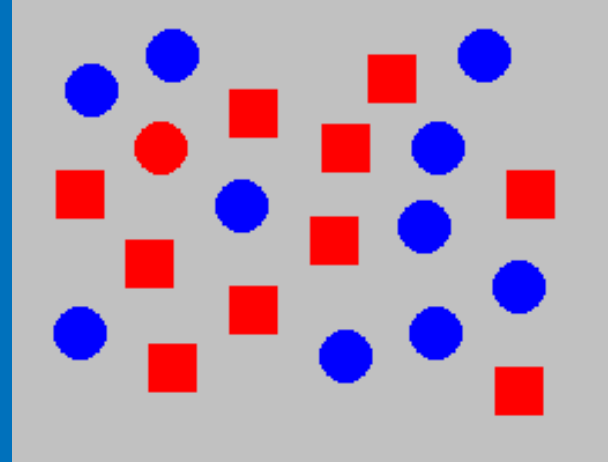
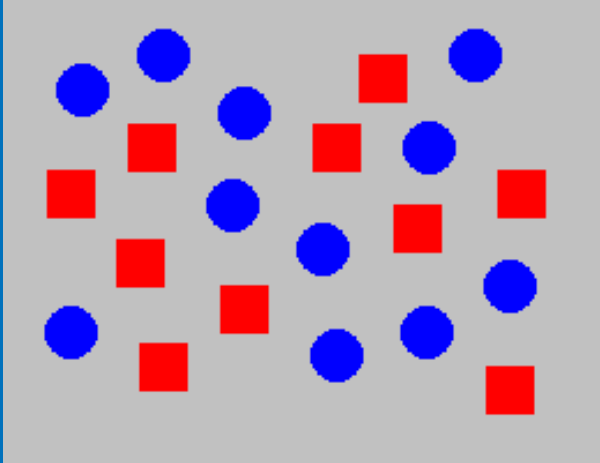
Ornek: Renk secimi



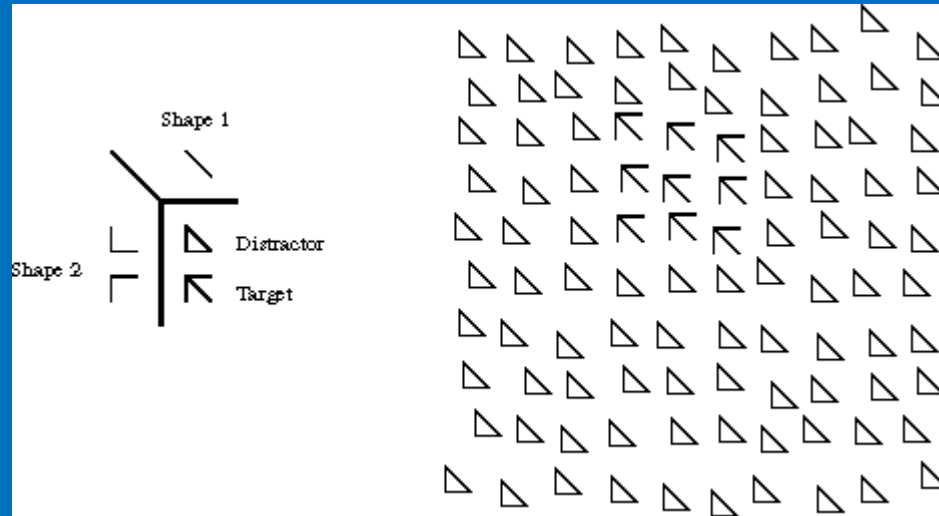
Ornek: Sekil secimi



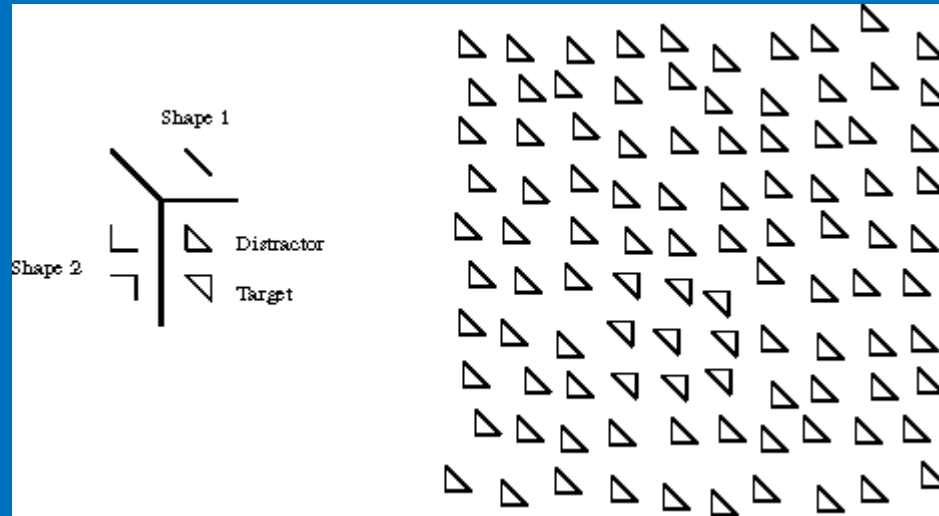
Ornek: Özelliklerin Birlesimi



Ornek: Belirgin Özellikler



Ornek: Belirgin Özellikler



Gorsel ozelliklerin yorumlanmasi

Bazi ozellikler digerlerine gore daha kolay ve anlamlı sekilde ayirt edilebilir

*Gorsel ilizyon: Kullanicilar kimi zaman uzunlugu,alani, parlakligi "gerektigi gibi" algilayamiyorlar

- Yogunluk (tonlama)

Daha karanlık > daha fazla anlamina gelir

- Boyut / Uzunluk / Alan

Daha büyük > daha fazla anlamina gelir

- Pozisyon

En sol, en ust > birinci, ilk anlamina gelir

Nicel Bilginin Görsel Gösterimi

Edward Tufte, Yale Üniversitesi Siyaset Bilimi, İstatistik ve Bilgisayar Bilimi profesörü. Veri gorsellestirmesi üzerine 4 klasik kitap yazdı.

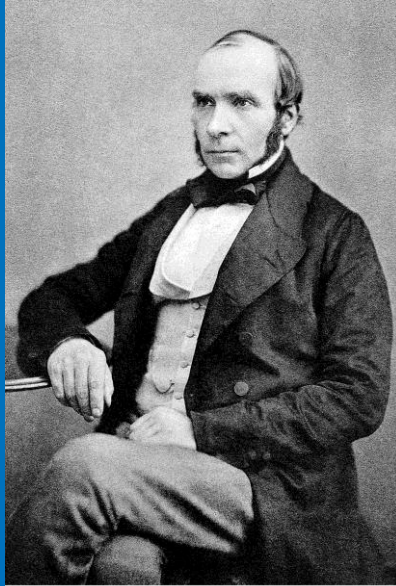
New York Times: "Verilerin Leonardo da Vinci'si"

Bloomberg: "Grafiklerin Galileo'su"

Tufte'nin grafik butunlugu



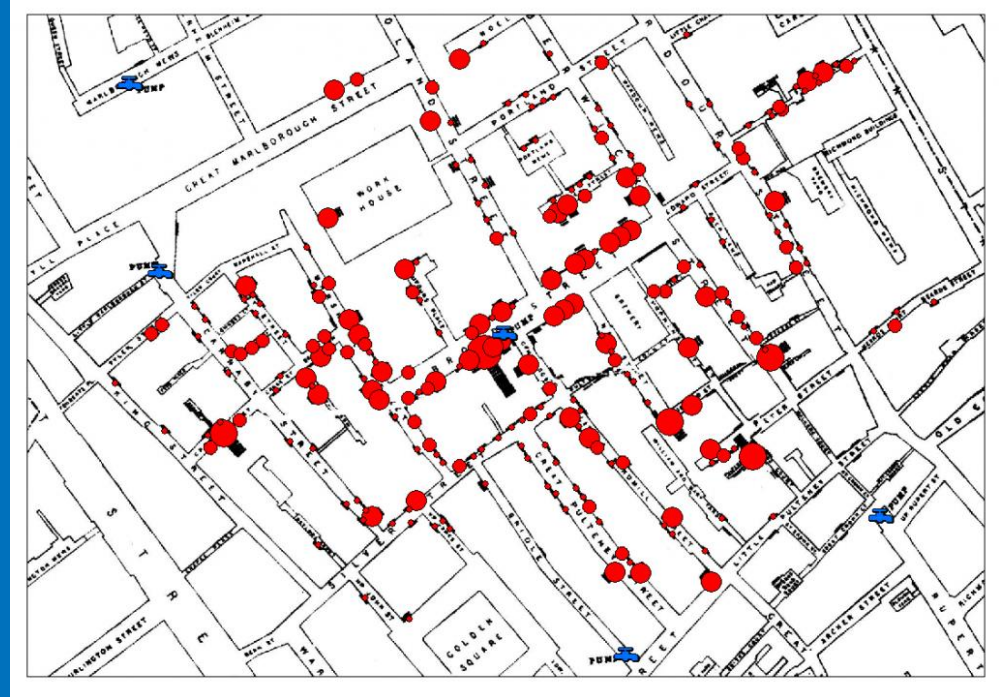
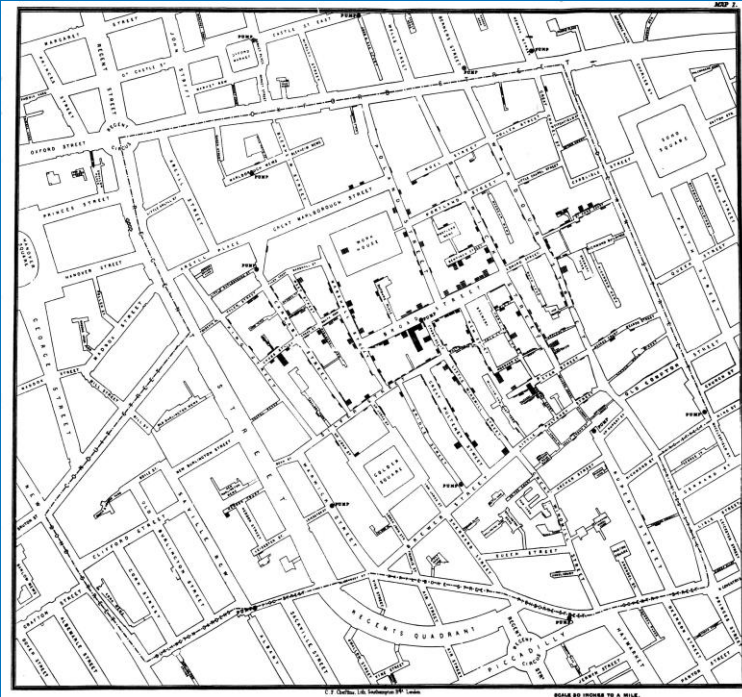
Gorsellestirmenin tarihteki yeri



John Snow

<https://youtu.be/INjrAXGRda4>

Gorsellestirmenin tarihteki yeri



Gorsellestirmenin Istanbul icin onemi

[http://cargocollective.com/bertan/
Istanbul-Railway-Network-Map](http://cargocollective.com/bertan/Istanbul-Railway-Network-Map)

Gorsellik ile ilgili calismalar

<https://d3js.org>

<https://vimeo.com/uwdata>

<https://youtu.be/5Zg-C8AAlGg>

<http://www.visualcomplexity.com>

<https://research.google/pubs/?area=human-computer-interaction-and-visualization>

<https://www.webdesignerdepot.com/2009/06/50-great-examples-of-data-visualization>