

Architecture des Systèmes d' Information

Listener





Web Application Event

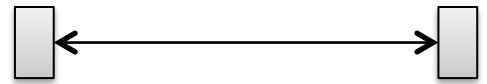
- Event is occurrence of something.
- in a web application an event can be :
 - initialization of application,
 - destroying an application,
 - request from client,
 - creating/destroying a session,
 - attribute modification in session
 -



Interactions

- Synchronous
 - Both ends are synchronised
 - Procedure calls
 - Remote Procedure Calls (RMI)

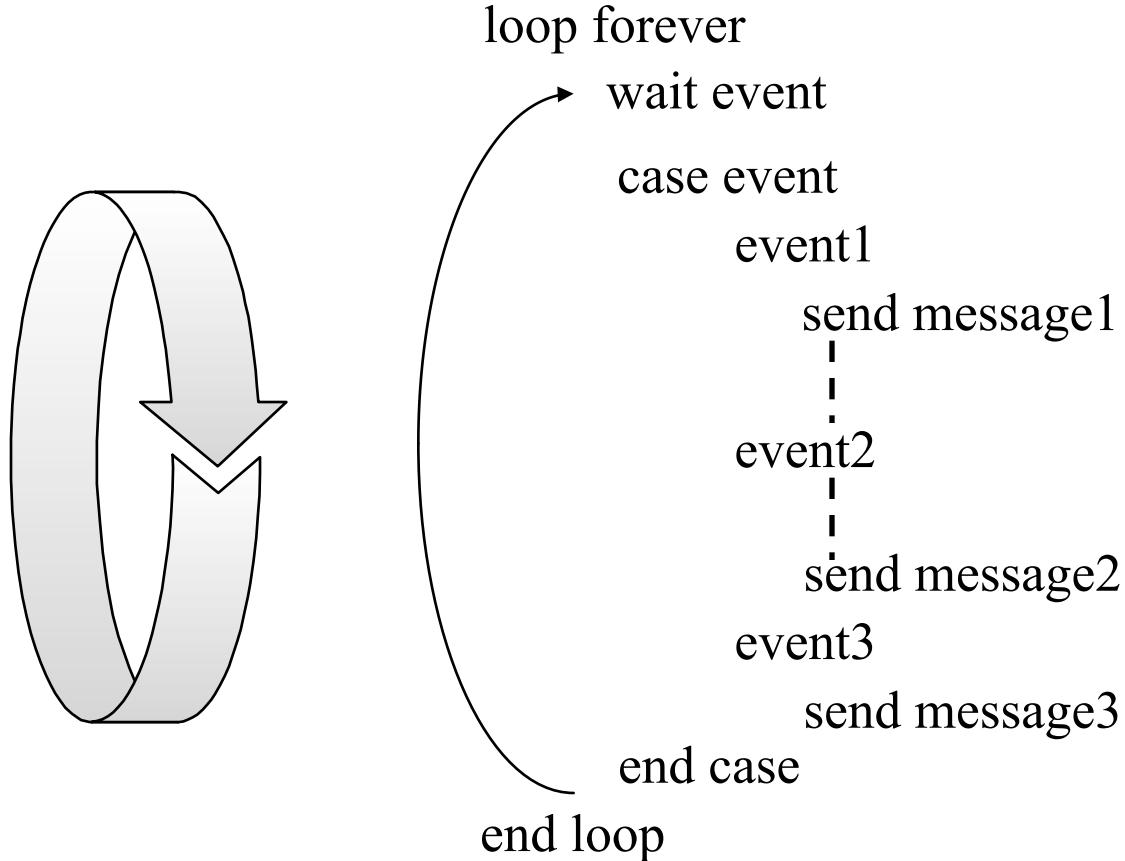
- Asynchronous
 - Both end are desynchronised
 - Event processing
 - Message passing (JMS)





Application Software Architecture

Main Loop Event Processing



Asynchronous



Application Software Architecture

Loop Event Processing

loop forever

 wait event

 case event

 event1

 send message1

 event2

 send message2

 event3

 send message3

 end case

end loop

Asynchronous

Sequential Event Processing

begin

 wait event1

 send message1

 |

 wait event2

 send message2

 |

 wait event3

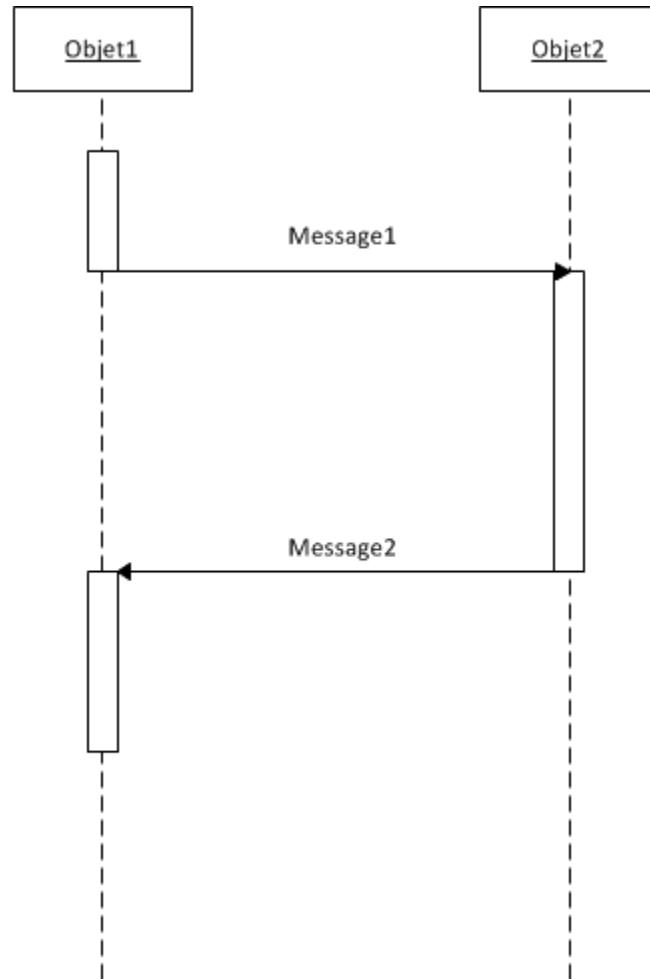
 send message3

end

Synchronous

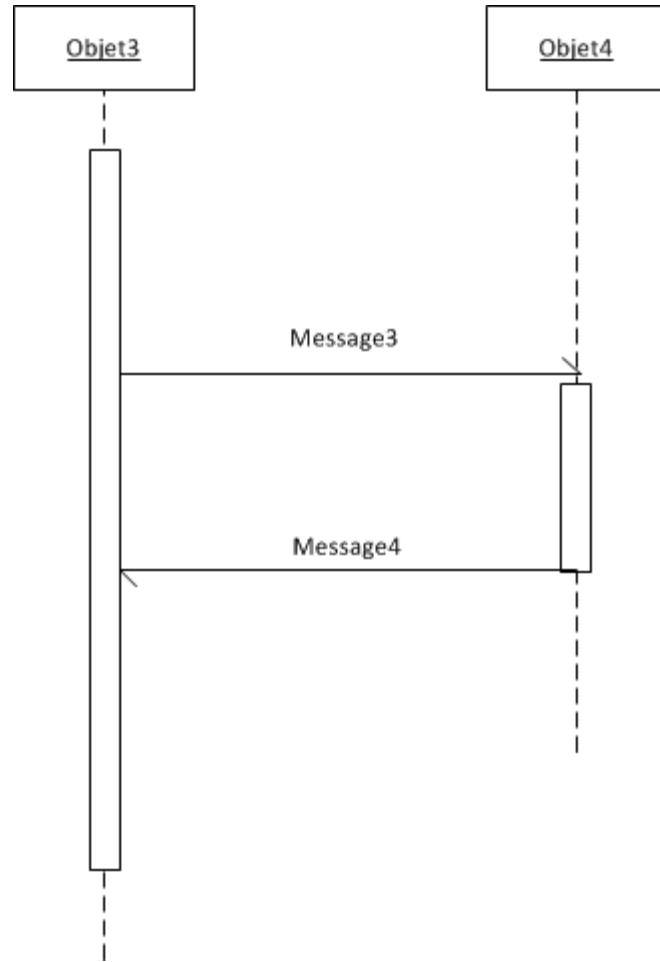


Synchronous relationship



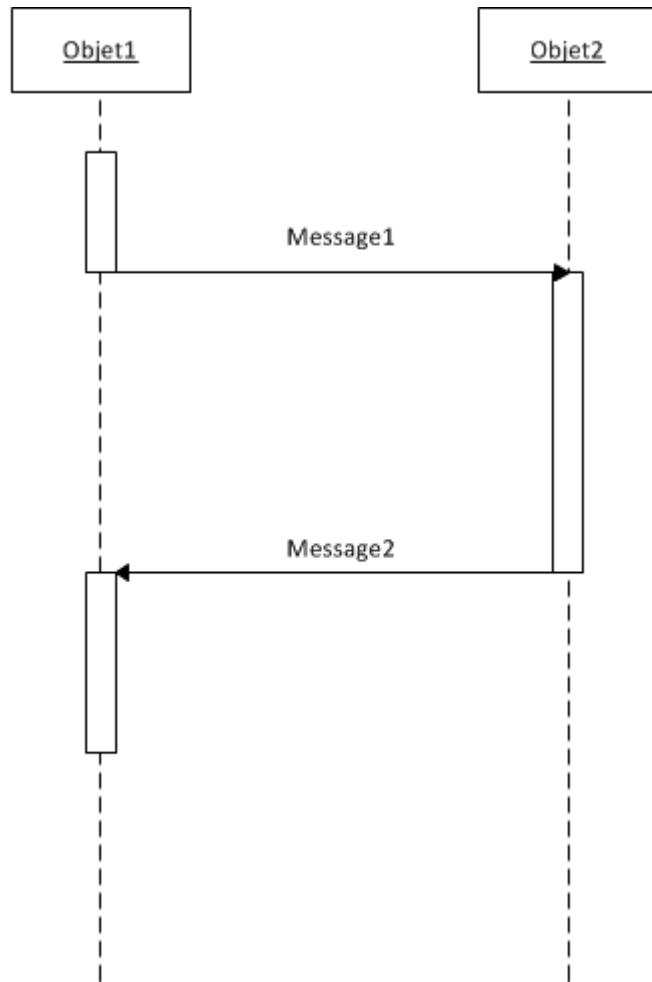
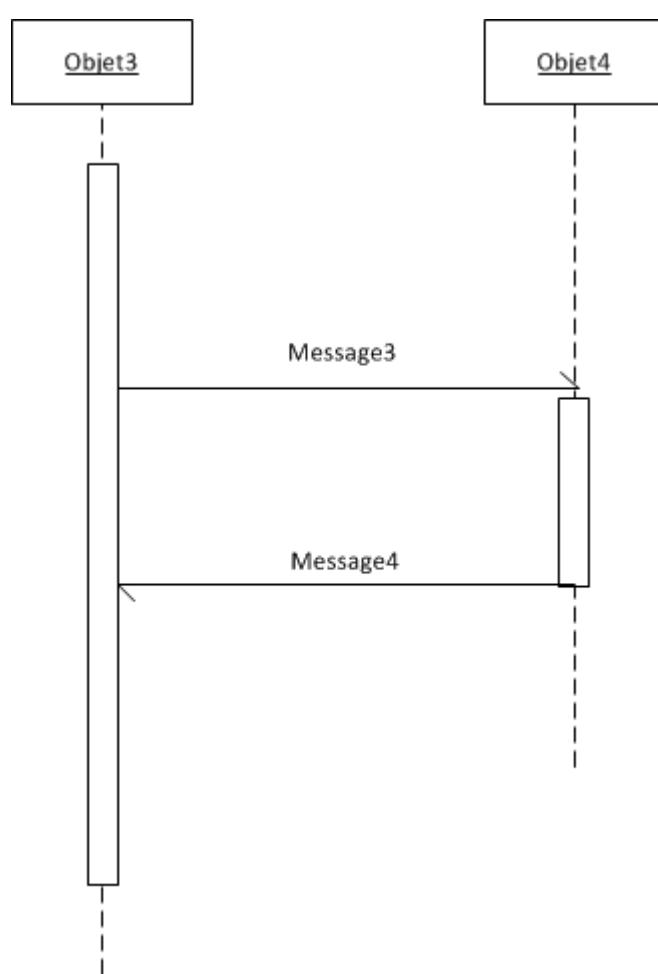


ASynchronous relationship



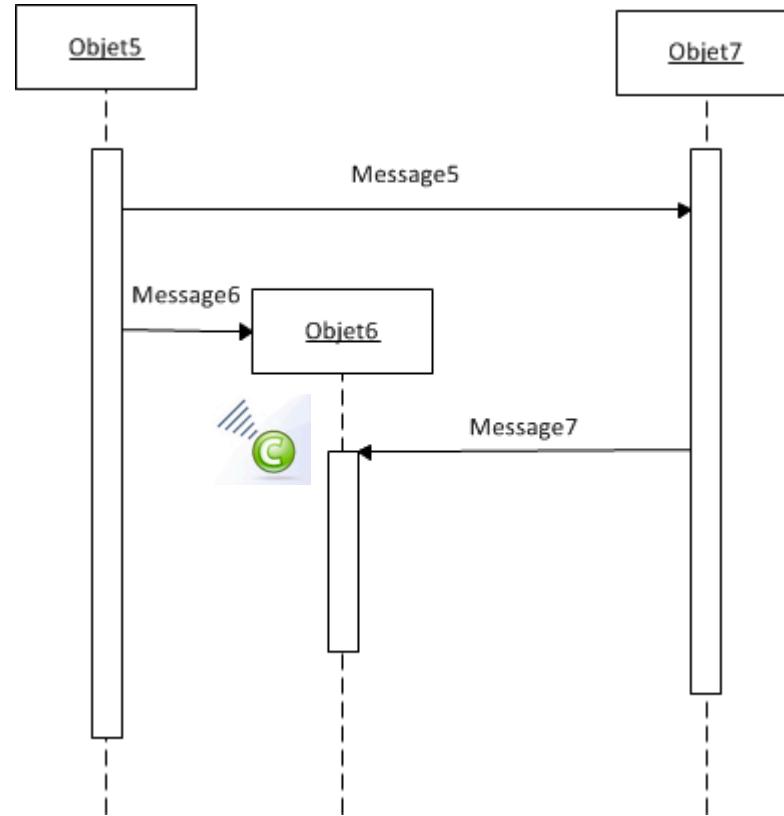


Relationship

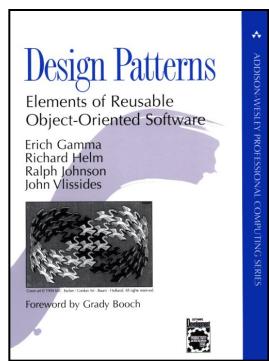
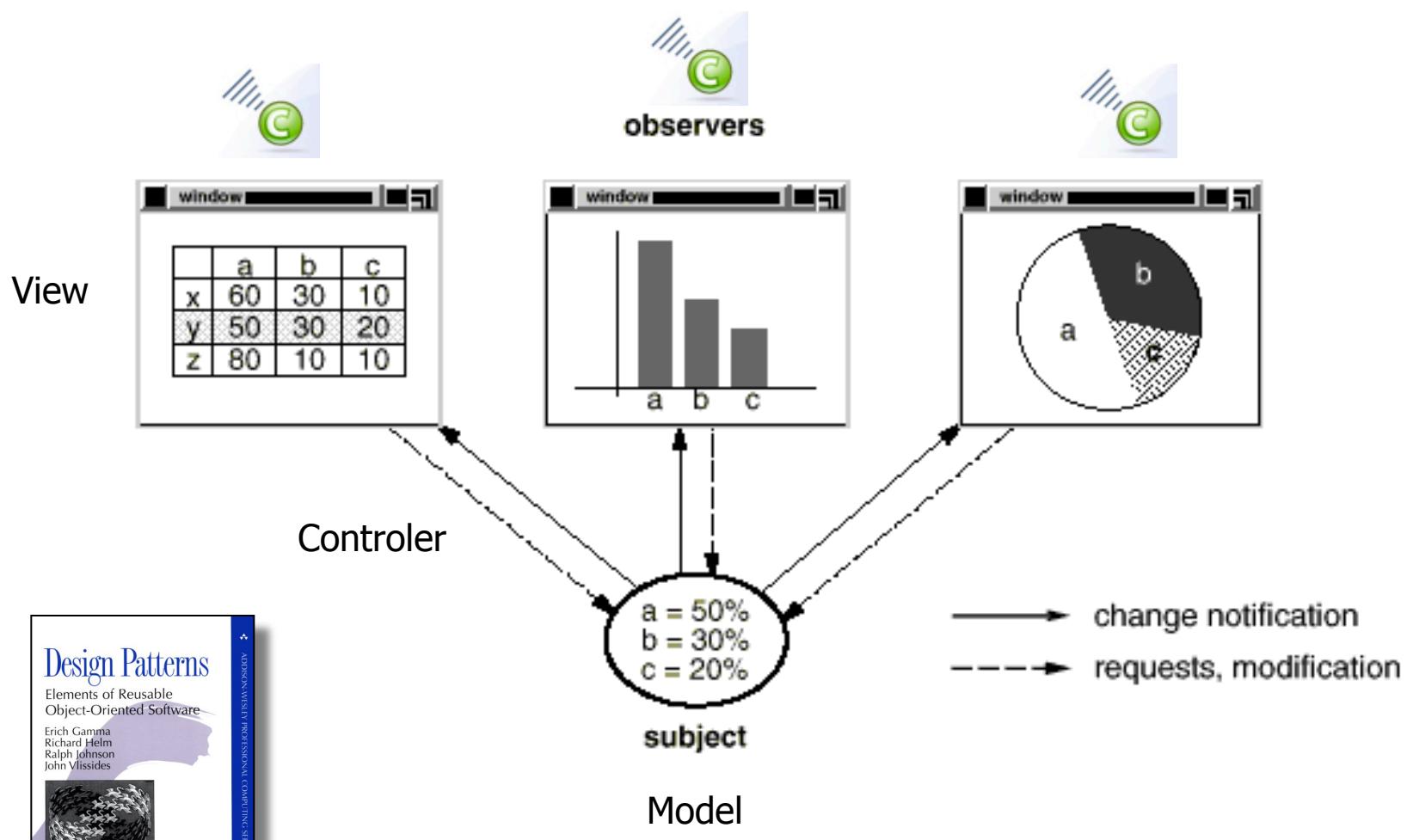




Asynchronous relationship : listener



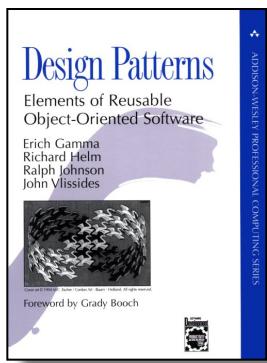
The GOF example



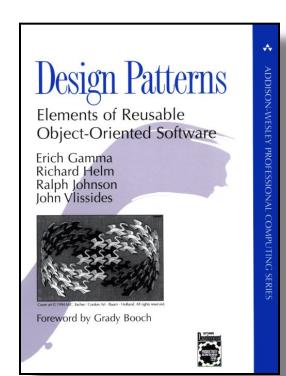
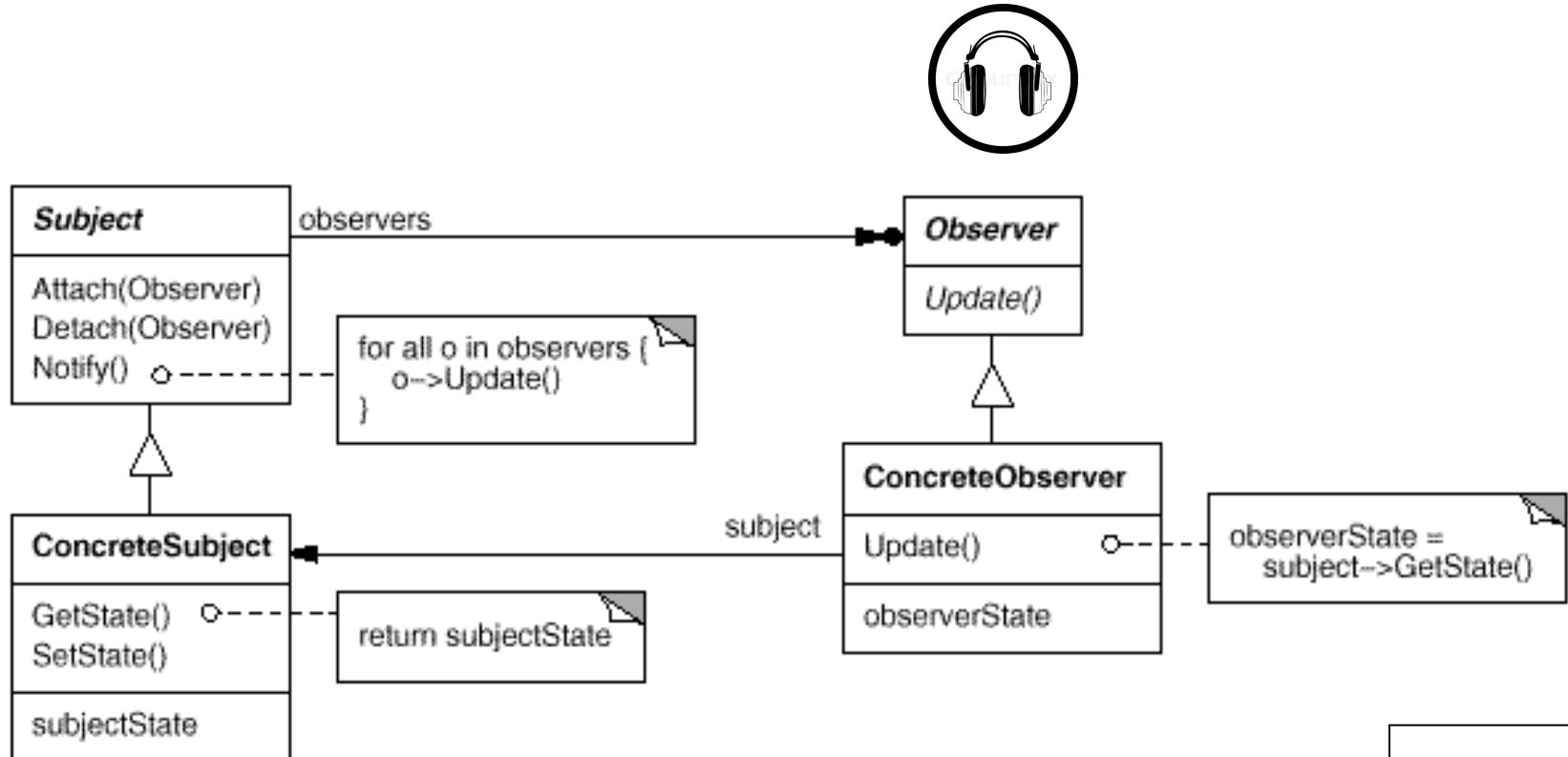


Design Patterns in Smalltalk MVC

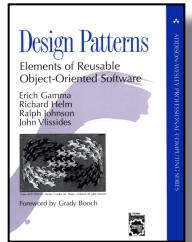
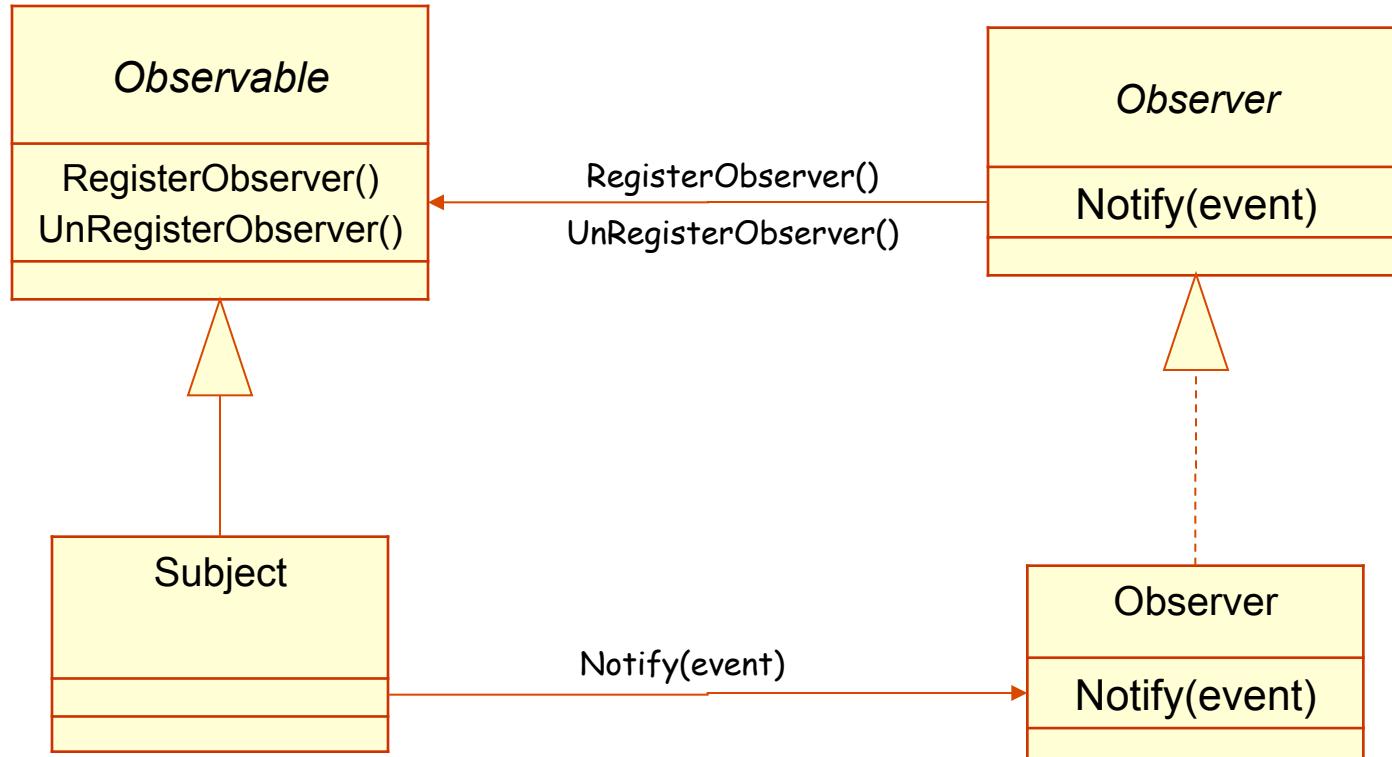
- MVC decouples views and models by establishing a subscribe/notify protocol between them.
- Whenever the model's data changes, the model notifies views that depend on it.
- In response, each view gets an opportunity to update itself.



GOF Observer



observer





MVC

- MVC is really old and was first described in 1979 by Trygve Reenskaug, then working on Smalltalk at Xerox PARC.





Xerox Palo Alto Research Center

- PARC : 3333 Coyote Hill Road PALO ALTO.
- PALO ALTO :
 - Spanish: palo: "stick" and alto: "tall"
- Leland Stanford





Palo Alto



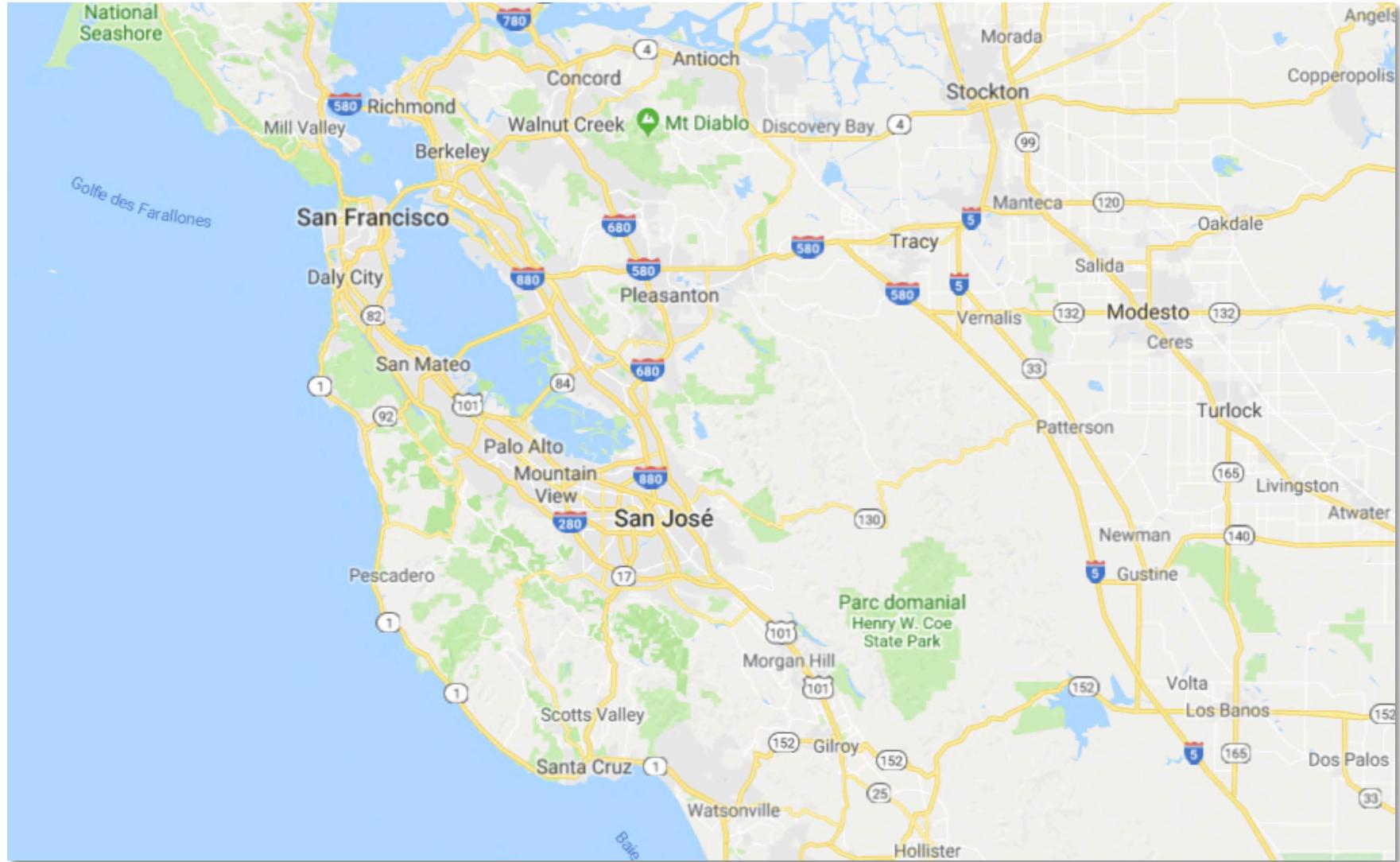


Palo Alto



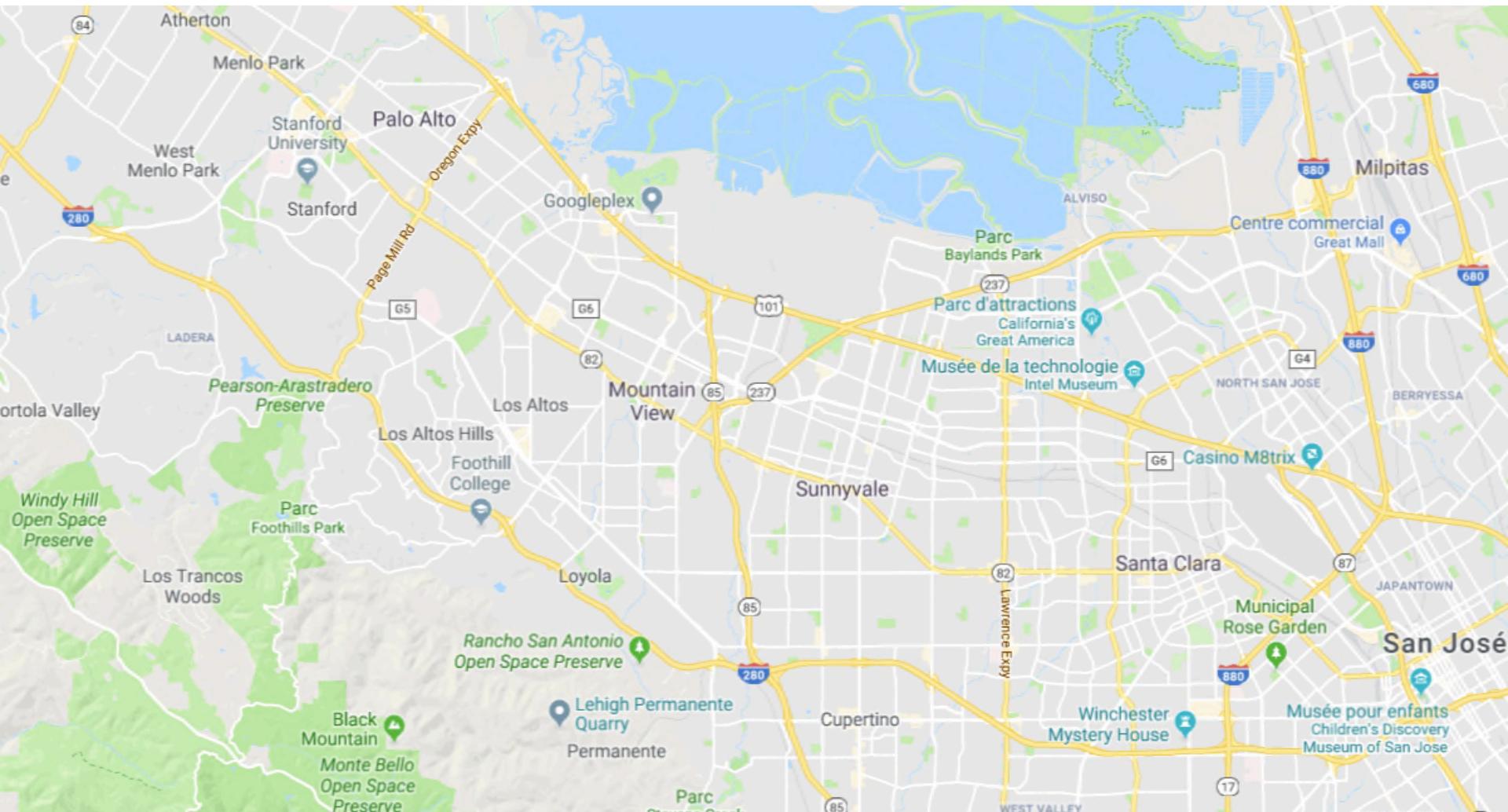


Palo Alto



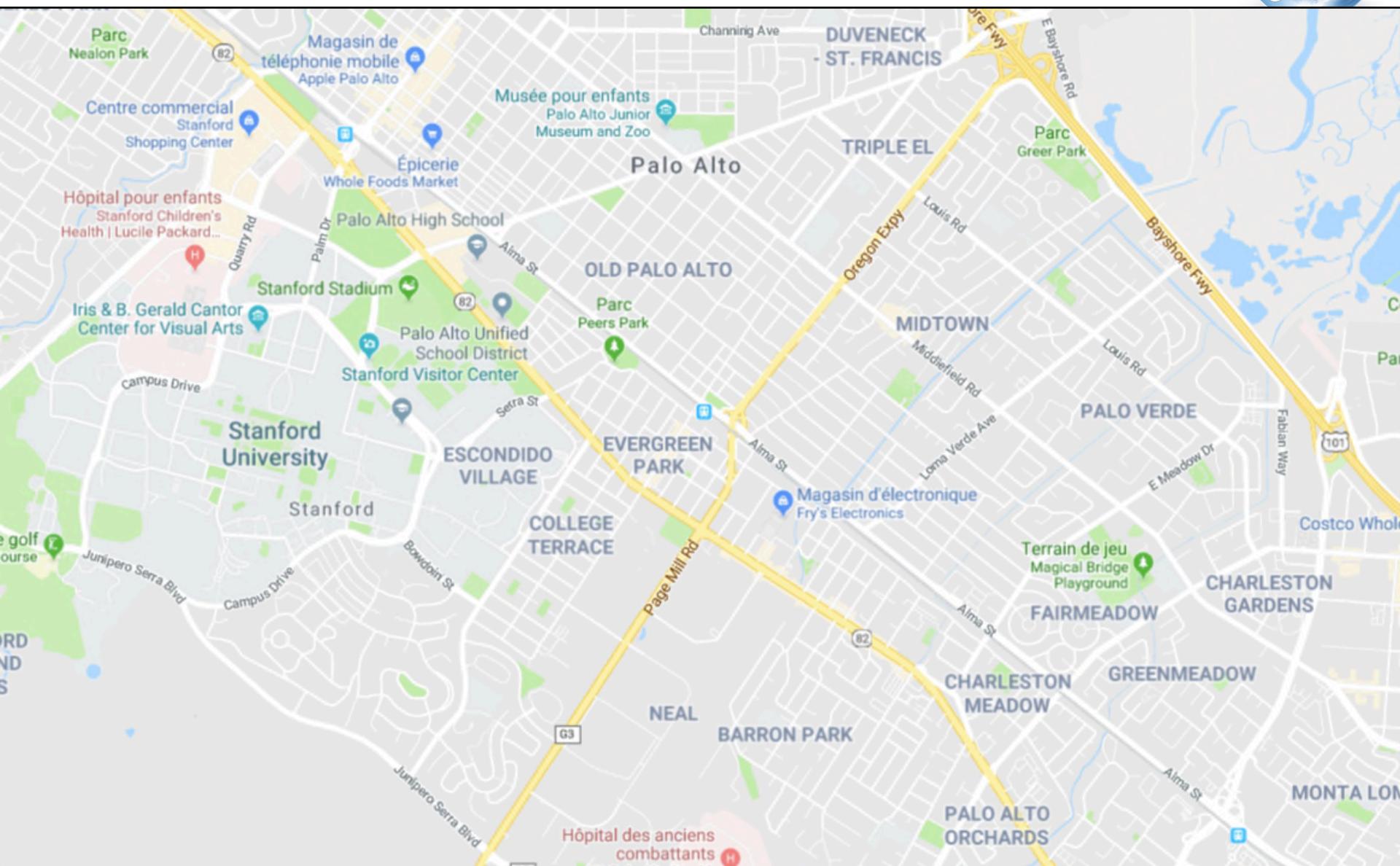


Palo Alto



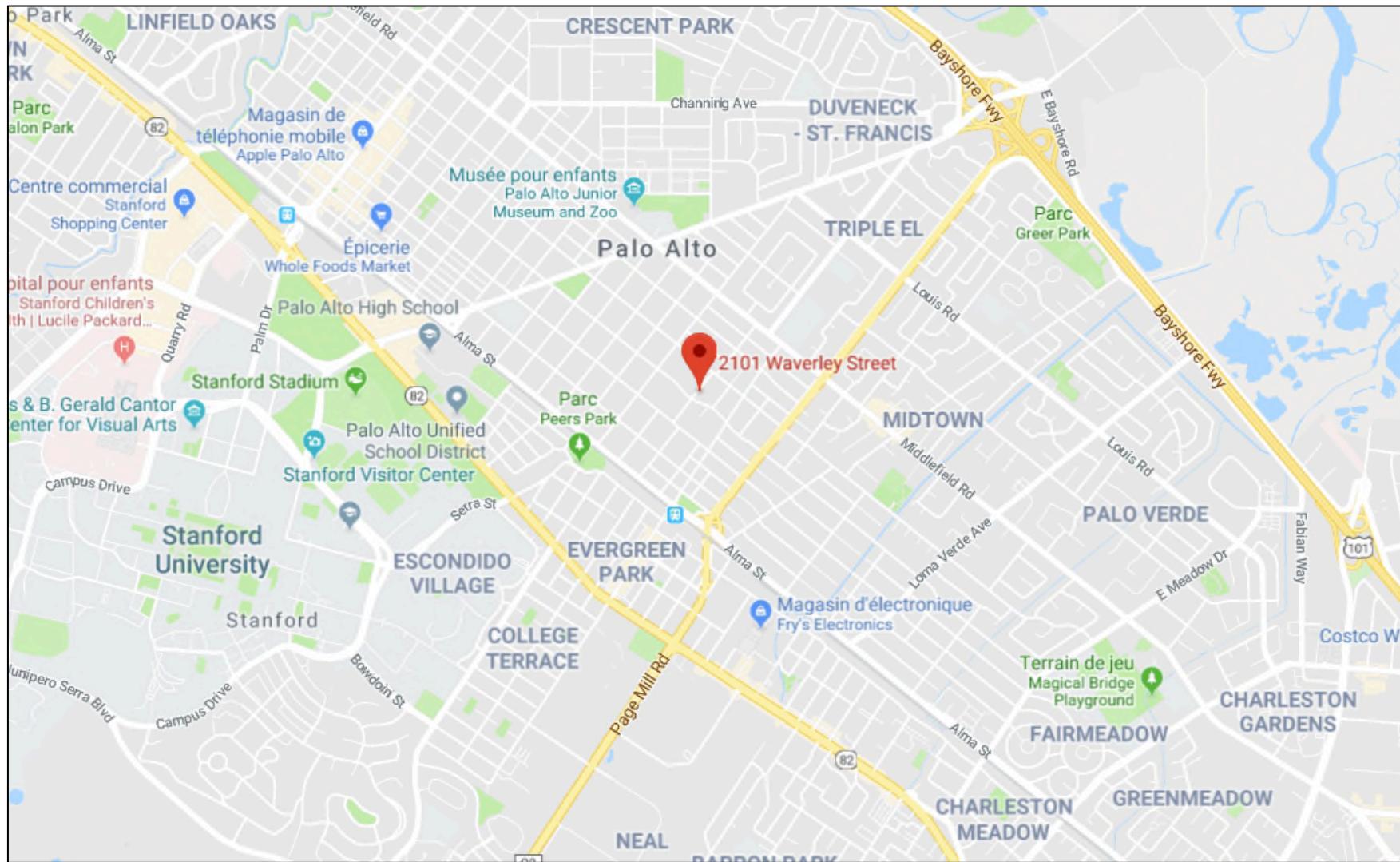


Palo Alto





Palo Alto





1864

EVENING - PASSENGER-TRAIN ON THE SAN FRANCISCO - SAN JOSÉ RAILROAD, CROSSING 8TH FRANCISQUITO CREEK.

STUDIED FROM TREES IN CALIFORNIA

THE REDWOOD-TREE

MENCKE & FISCHER



parc®

A Xerox Company

3333 COYOTE HILL ROAD



PARC Achievement

- XEROX alto
- HMI : GUI (windows), mouse
 - Windows
 - Mac OS
- Smalltalk : Object programming
 - Next Step, Java, design pattern (GOFF)
- Ethernet : network
 - LAN (Local Area Network).



Steve Jobs and the PARC

- In 1995 Steve Jobs could still remember it exactly.
In an interview with Robert X. Cringely for the PBS
show "Triumph of the nerds"
- [http://www.mac-history.net/computer-history/
2012-03-22/apple-and-xerox-parc](http://www.mac-history.net/computer-history/2012-03-22/apple-and-xerox-parc)



Steve JOBS

- "They showed me what they are working on. And they showed me really three things.

But I was so blinded by the first one that I didn't even really see the other two.

One of the things they showed me was object oriented programming – they showed me that but I didn't even see that.

The other one they showed me was a networked computer system... they had over a hundred Alto computers all networked using email etc., etc., I didn't even see that.

I was so blinded by the first thing they showed me, which was the graphical user interface.

I thought it was the best thing I'd ever seen in my life."

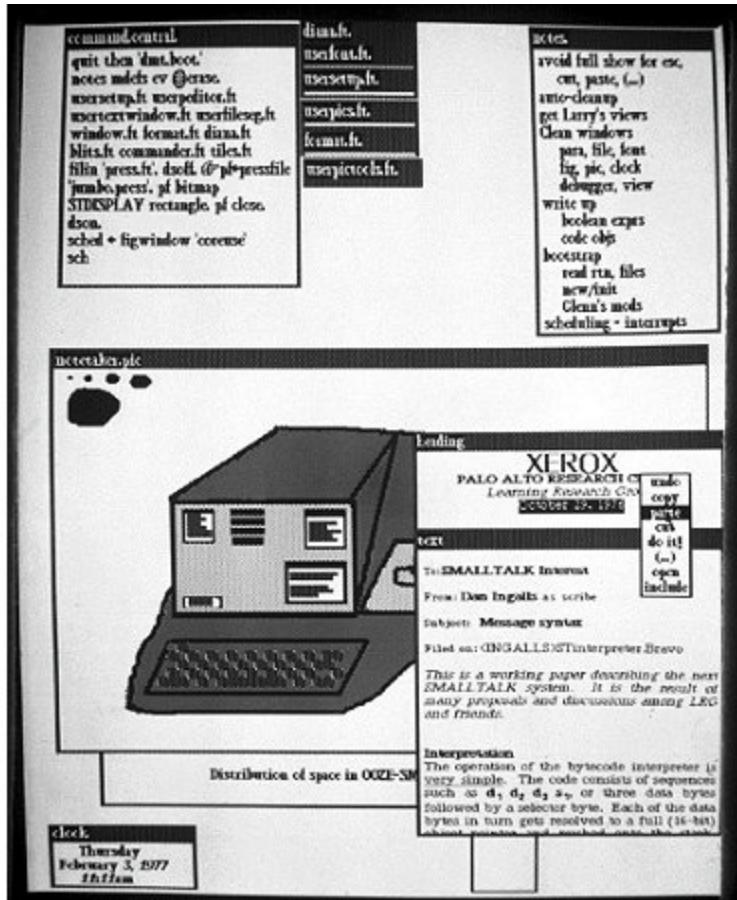


Xerox Alto





First GUI



<http://www.mac-history.net/wp-content/uploads/2012/03/500004657-03-01.jpeg>



Alan Kay

- Smalltalk was developed by Alan Kay at the Xerox Palo Alto Research Center (PARC).
- Flex : 1967
- Smalltalk : 1970

