

THE COGNITIVE ABILITIES OF HUMAN BEINGS

- Why Some Things are Just so Darn Hard!

by
Janne Jul Jensen
Trifork

Twitter: @jjjtrifork

Mail: jjj@trifork.com



Me



Me

■ Software Engineer



Me

- Software Engineer
- Researcher



Me

- Software Engineer
- Researcher
- Ph.D.



Me

- Software Engineer
- Researcher
- Ph.D.
- Trifork



You?



You?

■ What do you do?



You?

- What do you do?
- Why are you here?



Today's topics

Today's topics

- A guy named Miller

Today's topics

- A guy named Miller
- How a panda becomes a panda

Today's topics

- A guy named Miller
- How a panda becomes a panda
- Screwdrivers





Miller's Law

Miller's Law

■ 7 ± 2

Miller's Law

- 7 ± 2
- Meaningful unit

Miller's Law

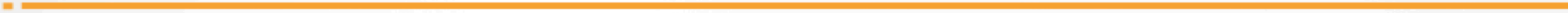
- 7 ± 2
- Meaningful unit
- Short term memory

Miller's Law

- 7 ± 2
- Meaningful unit
- Short term memory
- Menu points?

Miller's Law

- 7 ± 2
- Meaningful unit
- Short term memory
- Menu points?
- Rule of thumb





Gestalt Principles



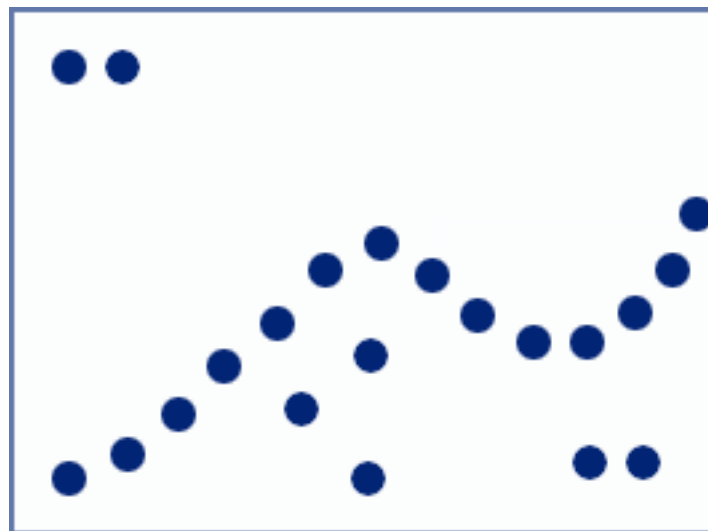
Proximity

Gestalt Principles



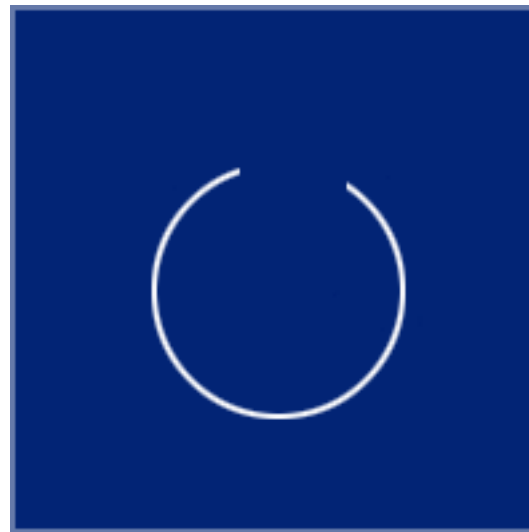
Similarity

Gestalt Principles



Continuity

Gestalt Principles



Closure

Proximity

The screenshot displays the AXA.fr website interface, featuring a blue header with the slogan "AXA.fr fait peau neuve" and a colorful graphic of a paper airplane. A central banner reads "AXA récompense votre fidélité...". Below this, a navigation bar lists service categories: AUTO-MOTO, HABITATION, SANTÉ-PRÉVOYANCE, ÉPARGNE-RETRAITTE, BANQUE-CRÉDIT, and LOISIRS-SERVICES. The main content area is divided into several modules: "Calculez votre tarif d'assurance auto..." with a car icon and a button "Un devis en quelques clics"; "Pour vivre confiant chaque Événement de votre vie" with dropdown menus for "Votre santé, votre famille", "Vos biens, auto, habitation", and "Vos placements et vos crédits"; "Trouvez le Conseiller AXA le plus proche de chez vous" with a search form; "Réserve Larg'O / chez AXA Banque à un taux très très doux" with a woman's portrait; and "Vos services plus, pour vous simplifier la vie" with a list of services. A sidebar on the left contains "Outils" and "Edition" sections. The footer includes "Les Sites AXA.fr" with links to various AXA services and a "TRIFORK." logo.

AXA.fr fait peau neuve

AXA récompense votre fidélité...

AUTO-MOTO HABITATION SANTÉ-PRÉVOYANCE ÉPARGNE-RETRAITTE BANQUE-CRÉDIT LOISIRS-SERVICES

Calculez votre tarif d'assurance auto... Un devis en quelques clics

Pour vivre confiant chaque Événement de votre vie

Votre santé, votre famille... Vos biens, auto, habitation... Vos placements et vos crédits...

Trouvez le Conseiller AXA le plus proche de chez vous

Réserve Larg'O / chez AXA Banque à un taux très très doux

Vos services plus, pour vous simplifier la vie

Constats et déclarations

Formulaires

Les Sites AXA.fr

Entreprise L'entreprise innovante du marché des entreprises pour

Épargne Retraite Entreprise L'offre d'épargne salariale et de

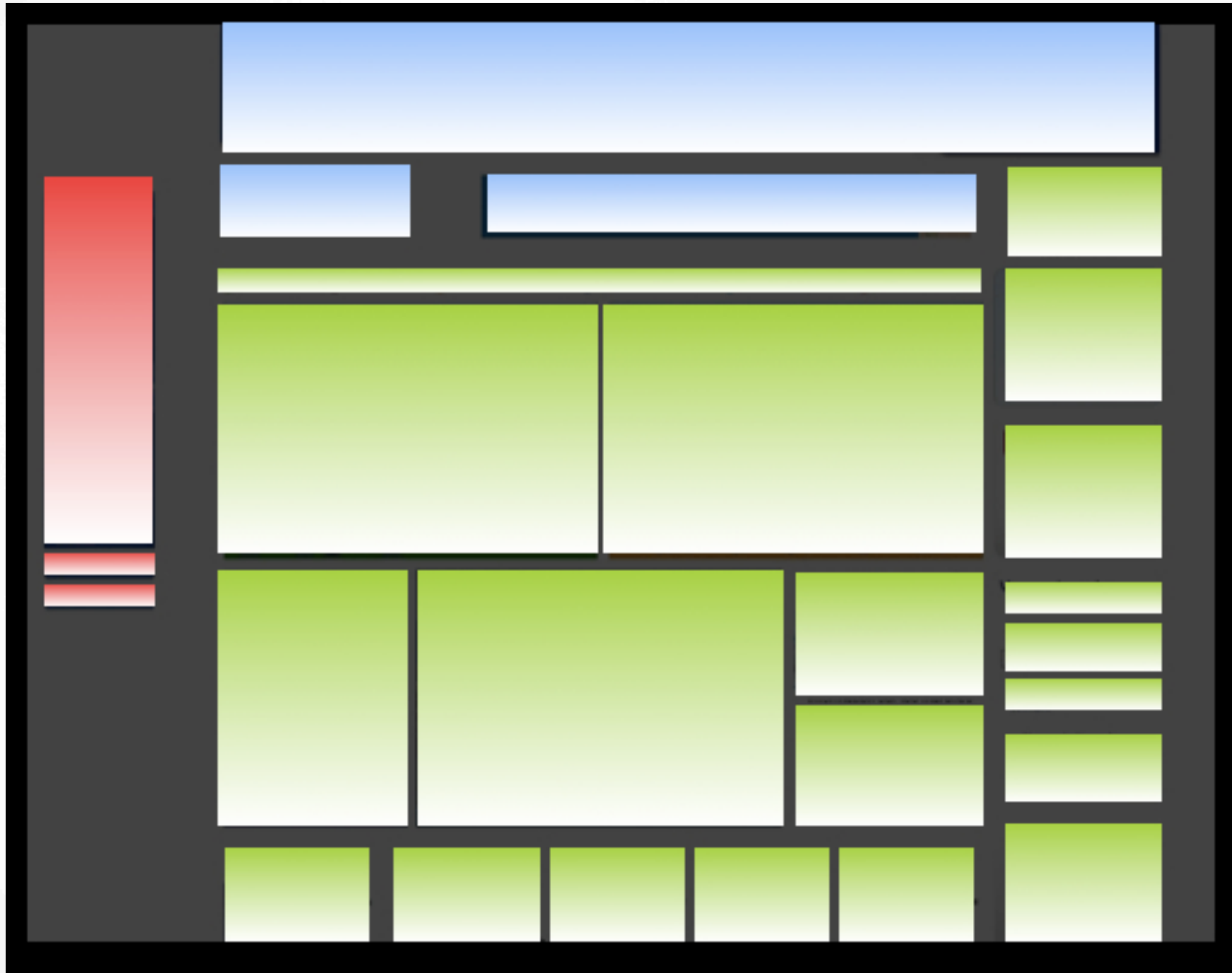
AXA en France Toute l'information sur AXA France et son engagement

AXA Recrute Découvrez nos métiers, les opportunités


AXA Santé Le rendez-vous de la prévention santé, coïncide.

TRIFORK.

Proximity



Proximity

 Create Custom Field

Label *

image

The label of the field

Name *

name_of_my_group_image

The name only accept letters and numbers (lowercar)

Help text

image of magazine

Tell to the user about what is the field

Type of Custom Field

image

Select the type of custom field

required ☐

this field is required

Can be duplicated ☐

this field is duplicable?

Cancel


Save Custom Field

Options of field

Simple image input

Preview:

My imge field *



[View](#) | [Del](#)

Css Class

magic_fields

Max height

Proximity

iPad

12:30

100%

Konto

Overfør

Betal

Søg

Min primære konto

Til rådighed

8.755,20

Budget

19.717,60

Opsparing

16.000,00

Totalsaldo

-55.527,20

Kontostatus

OVERTRÆK

Kontoejer

Fuldmagtgivers navn

BIC/SWIFT

7173 1234567

Valuta

25.000,00

Valuta

DKK

IBAN

DK717300009876543

BIC/SWIFT

JYBADKKK

Ind og udbetalinger

Betalinger 30 dage frem

01.03.2011

På tirsdag

PBS betaling lorem ipsum

NOTA

-2.500,00

28.02.2011

I morgen

Fast overførsel med en meget lang og beskrivende

-2.811,00

28.02.2011

I morgen

PBS betaling lorem ipsum

AFVENTER

-1.736,68

December

01.03.2011

PBS betaling lorem ipsum

-2.500,00

28.02.2011

Fast overførsel med en meget lang og beskrivende

12.811,00

28.02.2011

PBS betaling lorem ipsum

NOTA

65.736,68

28.02.2011

Fast overførsel med en meget lang og beskrivende

-2.811,00

01.03.2011

PBS betaling lorem ipsum

-2.500,00

28.02.2011

Fast overførsel med en meget lang og beskrivende

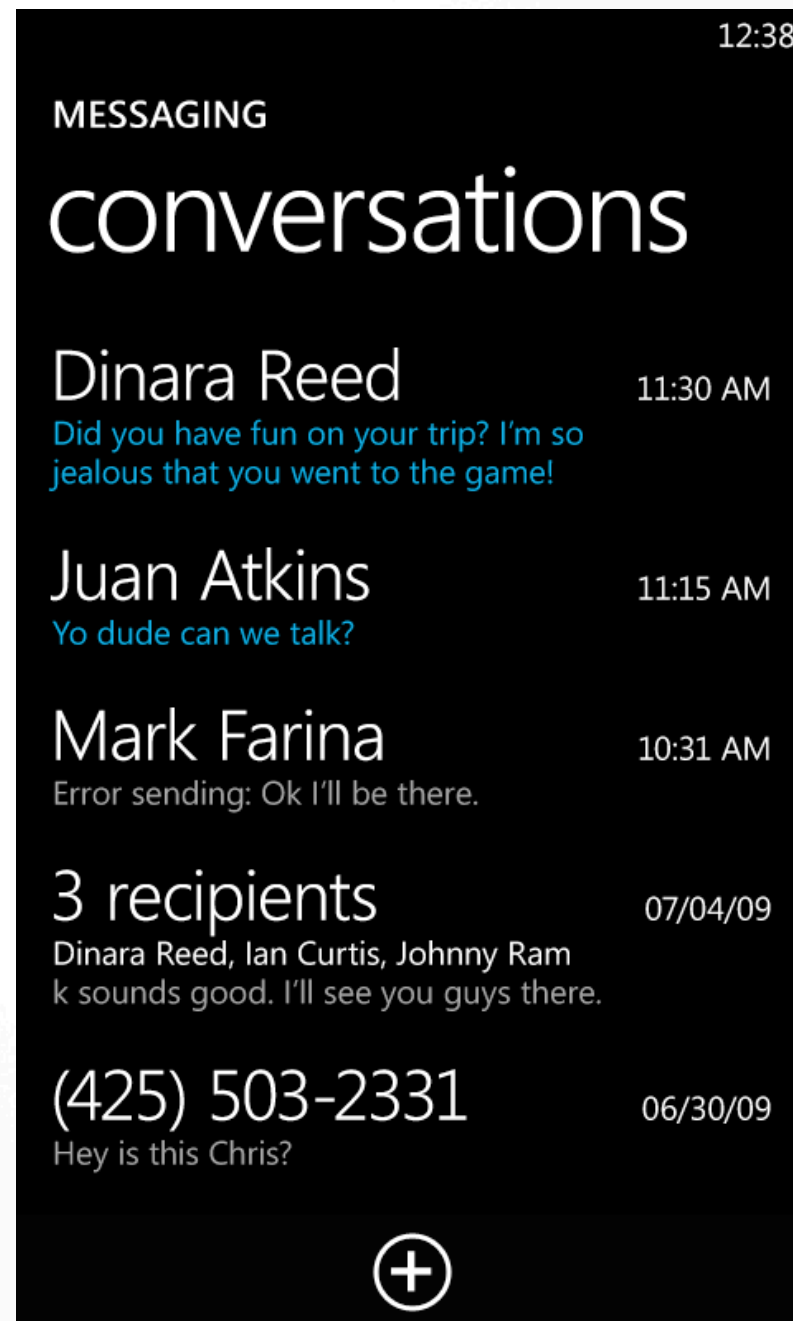
12.811,00

28.02.2011

PBS betaling lorem ipsum

65.736,68

Proximity



Similarity

The screenshot displays the 'Cool River project' web application. At the top, a header bar includes the project logo, the name 'Cool River project', and a 'Logout' link. Below the header, a navigation bar shows the user's name 'Callie Pagel' and the date 'July 26, 2009', followed by a series of icons for various functions. The main content area is divided into several sections: a left sidebar with a search bar and a list of navigation links; a central grid of task and commitment management tools; and a bottom row of links for customer support, software feedback, and legal policies.

Cool River project Logout

Search
Look in [v] [m]
Advanced search...

Callie Pagel
July 26, 2009

My Home Page

My Tasks	Add New	My Information
<ul style="list-style-type: none">Overdue TasksOpen TasksFollow-up TasksAdd New Task	<ul style="list-style-type: none">EmailIssueEventDocumentNote	<p>Login ID: Callie Pagel User name: Callie</p> <ul style="list-style-type: none">» Change my password» Change my email address» Update my information

My Commitments	Enter New
<ul style="list-style-type: none">Overdue CommitmentsOpen CommitmentsAdd New Commitment	<ul style="list-style-type: none">Stakeholder IndividualStakeholder GroupLand ParcelTeam MemberDepartment

Customer Service & Support	Software Feedback	Legal Policies
<ul style="list-style-type: none">» Ask for Support online» Contact Us	<ul style="list-style-type: none">» Report a bug» Request a new feature	<ul style="list-style-type: none">» Terms of Use» Privacy policy

Similarity

The screenshot displays the 'Cool River project' web application. At the top, a header bar contains the project logo, name, and a 'Logout' link. Below this, a navigation bar shows the user's name 'Callie Pagel' and the date 'July 26, 2009', alongside a series of icons for various functions. The main content area is divided into three columns. The left column features a search bar and a sidebar menu with options like 'My Home Page', 'Calendar', 'Project', 'Project Team', 'Stakeholders', 'Events', 'Issues', 'Tasks', 'Commitments', 'Documentation', 'Reports', and 'Administration'. The middle column is organized into four sections: 'My Tasks' (listing Overdue, Open, Follow-up tasks and an 'Add New Task' link), 'Add New' (listing Email, Issue, Event, Document, and Note), 'My Commitments' (listing Overdue, Open commitments and an 'Add New Commitment' link), and 'Enter New' (listing Stakeholder Individual, Stakeholder Group, Land Parcel, Team Member, and Department). The right column, titled 'My Information', displays the user's 'Login ID' and 'User name' as 'Callie Pagel' and 'Callie', with links to 'Change my password', 'Change my email address', and 'Update my information'. At the bottom, a footer section contains three columns of links: 'Customer Service & Support' (Ask for Support online, Contact Us), 'Software Feedback' (Report a bug, Request a new feature), and 'Legal Policies' (Terms of Use, Privacy policy).

Cool River project		
Logout		
Callie Pagel July 26, 2009		
My Home Page		
My Home Page Calendar Project > Project Team Stakeholders Events Issues Tasks Commitments Documentation Reports Administration >	My Tasks Overdue Tasks Open Tasks Follow-up Tasks Add New Task My Commitments Overdue Commitments Open Commitments Add New Commitment	Add New Email Issue Event Document Note Enter New Stakeholder Individual Stakeholder Group Land Parcel Team Member Department
My Information Login ID: Callie Pagel User name: Callie » Change my password » Change my email address » Update my information		
Customer Service & Support » Ask for Support online » Contact Us	Software Feedback » Report a bug » Request a new feature	Legal Policies » Terms of Use » Privacy policy

Similarity

The screenshot shows a mobile banking app interface for a 'Fælleskonto (Test)'. The top status bar shows 'TELIA', signal strength, '1:08 PM', and '25%' battery. The app header includes a menu icon, 'Konto', the account name 'Fælleskonto (Test)', and a 'Log af' button. Below the header, there are buttons for 'Ny overførsel' and 'Betal regning', followed by the current 'Saldo: 47,66' and 'Til rådighed: 47,66'. A month selector shows 'Oktober', 'November', 'December', 'Januar', 'Februar', 'Marts 2012' (highlighted), and 'Fremtidige'. A search bar labeled 'Søg' is present. The main content area displays transaction history for 'September 2011', 'August 2011', and 'Juli 2011'. Each month's section lists transactions with columns for 'Bevægelser', 'Beløb', and 'Saldo'.

Bevægelser	Beløb	Saldo
September 2011		
STÅENDE ORDRE 30.09.2011	-15.000,00 Venter	164.214,19
STÅENDE ORDRE 30.09.2011	-1.000,00 Venter	179.214,19
Til: 5472 0002061619 30.09.2011	-3.000,00 Venter	180.214,19
August 2011		
STÅENDE ORDRE 31.08.2011	-15.000,00 Venter	183.214,19
STÅENDE ORDRE 31.08.2011	-1.000,00 Venter	198.214,19
Til: 5472 0002061619 31.08.2011	-3.000,00 Venter	199.214,19
Juli 2011		
Danske Eksklusiv-pakke 29.07.2011	-200,00 Udført	202.214,19

Similarity

Name	Last	% Chg
Europe/Middle East/Africa		
DAX	6921,37	-0,29 >
IBEX 35	8563,40	+0,18 >
MIB	16902,51	+0,43 >
PSI 20	5664,96	+0,56 >
AEX	327,85	+0,40 >
OMX	1105,11	+0,05 >

Bloomberg Data downloaded: 13:06:21

News Markets My Stocks Stock Finder

Continuity





VirginiaTech
Invent the Future

● People ● Pages

Search Virginia Tech **GO**

▶ A to Z Index ▶ Directory

My VT | VT News | Giving to Virginia Tech

WE REMEMBER

QUICKLINKS ▶

- About Virginia Tech
- Administration
- Applying to Virginia Tech
- Tuition and Financial Aid
- Student Life
- Diversity
- Careers
- Academic Programs
- Research
- Libraries
- Sports at Virginia Tech
- Arts at Virginia Tech



Spotlight on Achievement

International flair

An annual street fair gives students a chance to share their home country's heritage and traditions.

FULL STORY ▶





Switzerland
Virginia
Dominican Republic
Egypt
India

Where We Are

- Outreach / Extension International
- All About Blacksburg
- Maps / Directions / Parking
- Visiting the Blacksburg Campus

Academics

- Undergraduate Education
- Colleges & Departments
- Graduate School
- Online / Distance Learning
- Class Registration / Transcripts

Student Life

- Clubs & Organizations
- Living On and Off Campus
- Health / Counseling
- Recreational Sports
- Photo Galleries

Faculty & Staff

Alumni & Friends

Parents & Family

Business & Industry



MAY 21, 2011
CIVIL WAR 150
Sesquicentennial Signature Conference

Spring Commencement

Join us May 13-15 as we congratulate and celebrate our class of 2011 spring graduates.

2011 Spring Ceremonies ▶ More information ▶



Latest News 

MAY 04 More than 5,000 graduates to be honored at commencement exercises May 13

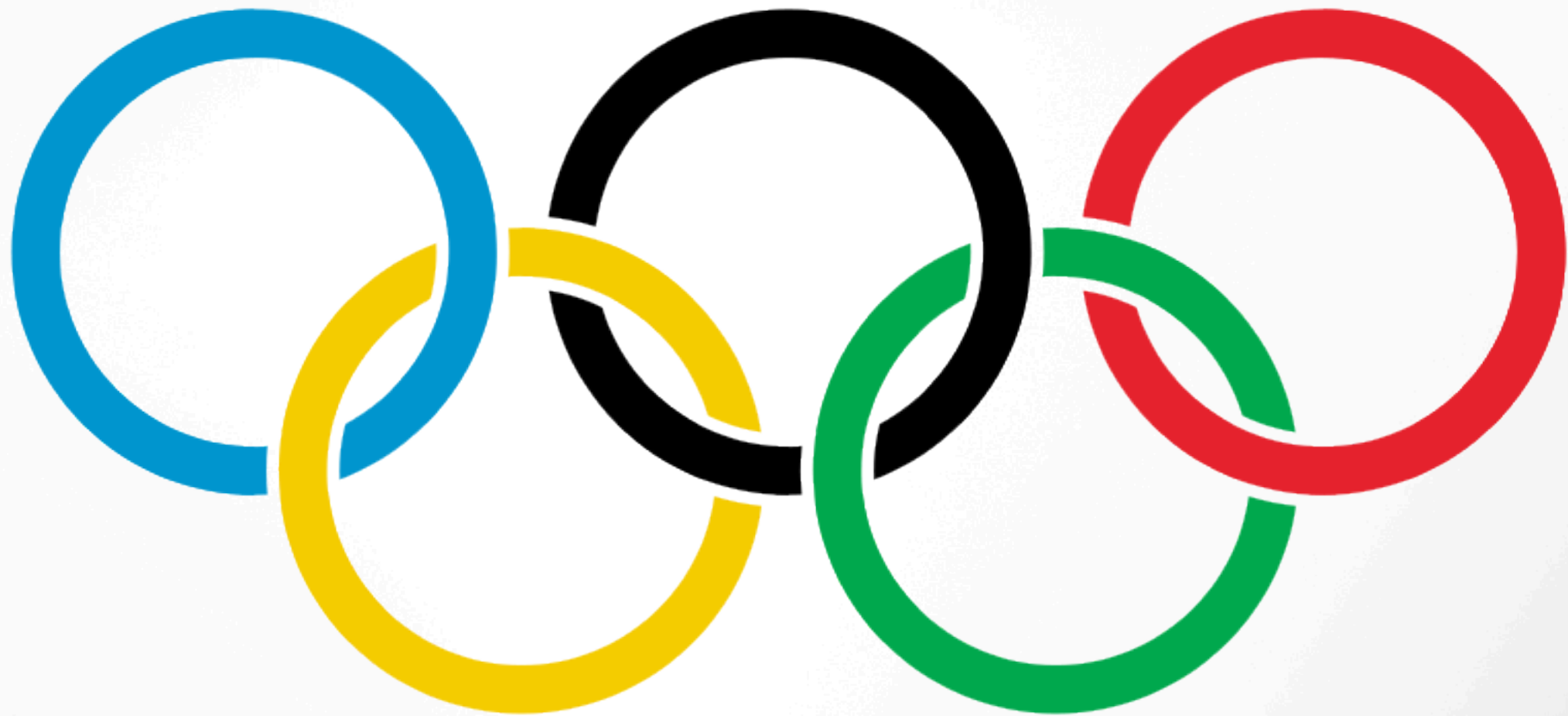
MAY 03 Center for the Arts at Virginia Tech launches website

Upcoming Events

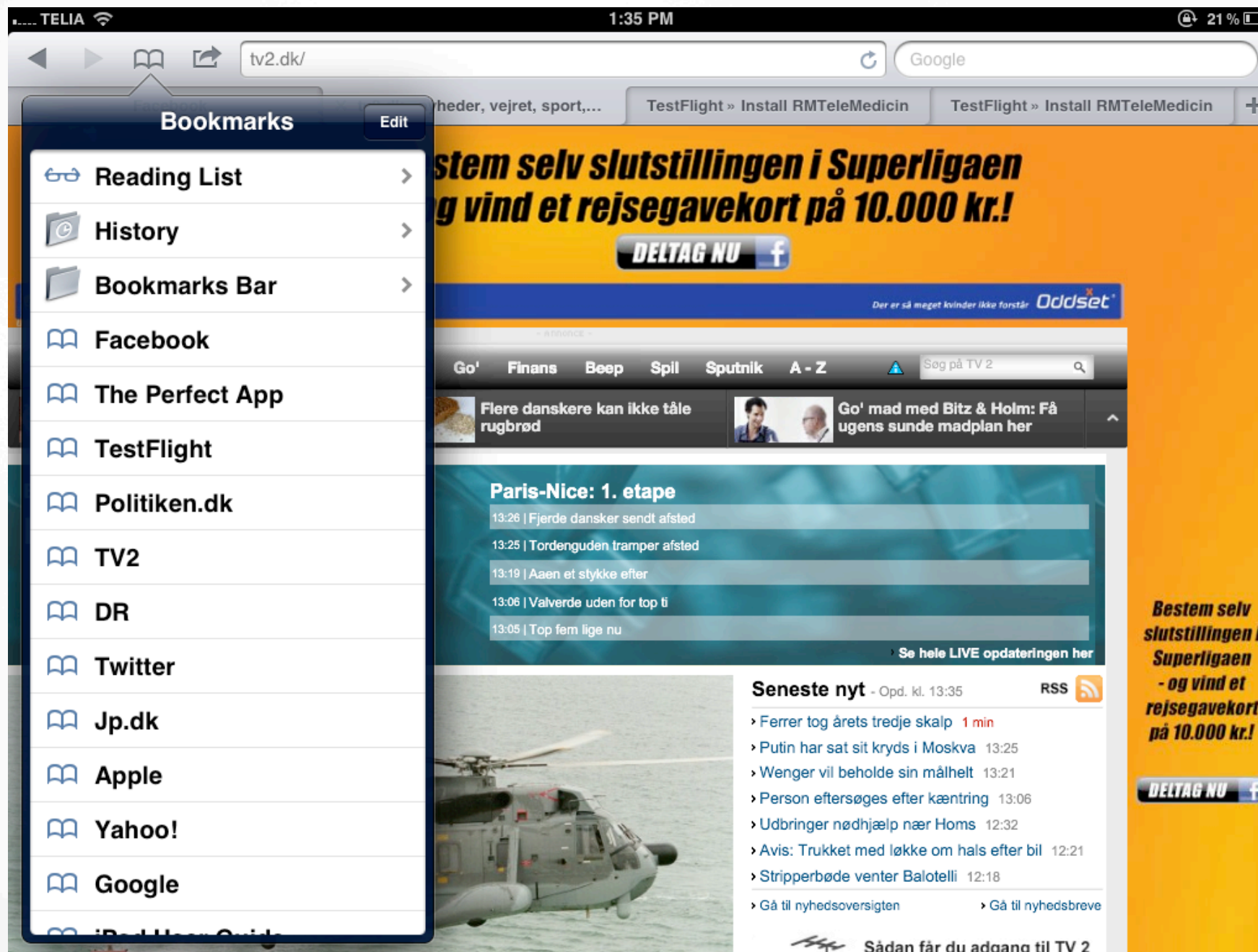
MAY 9 8:00 am - 5:00 pm
ESM-CPSVP Norris Hall Art Show

MAY 11 7:00 pm
ArtsFusion Event: Progeny Film Festival

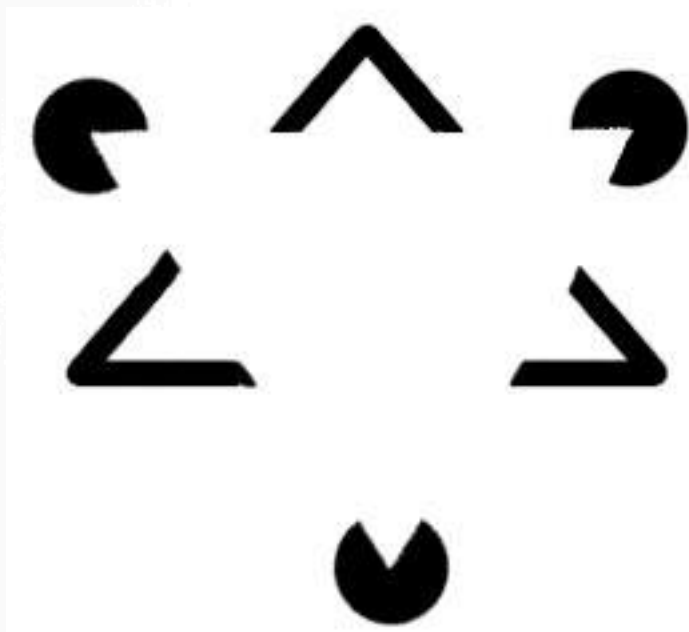
Continuity



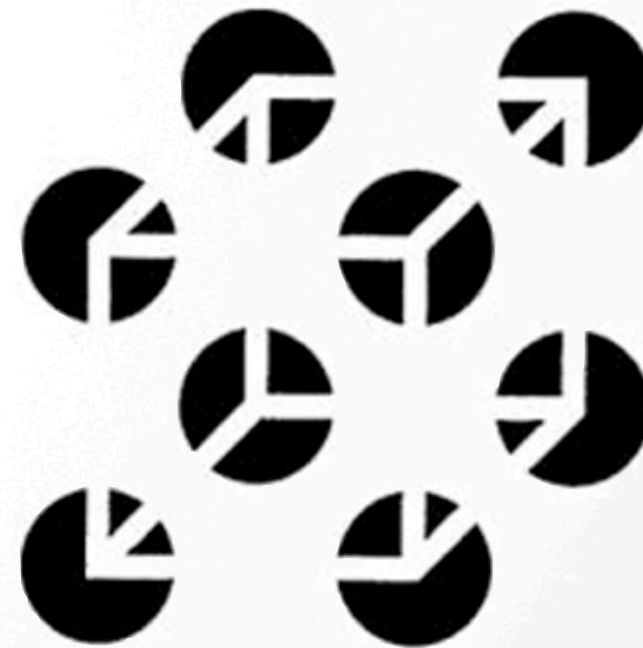
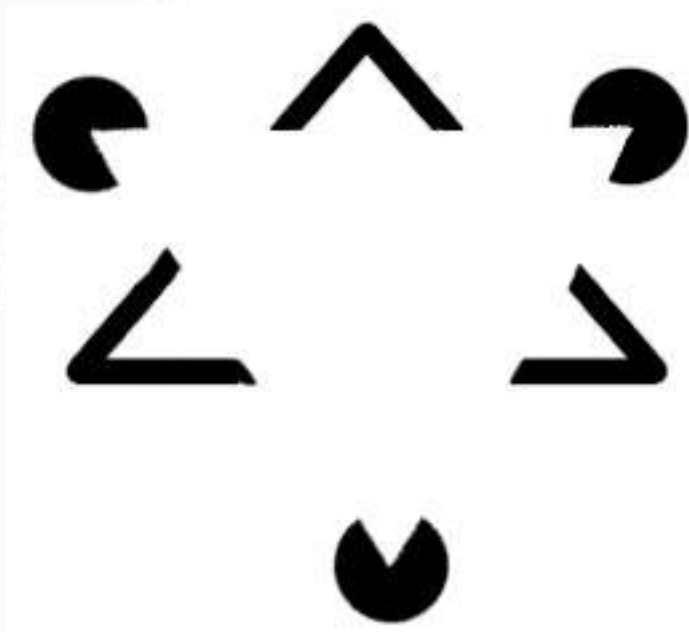
Continuity



Closure

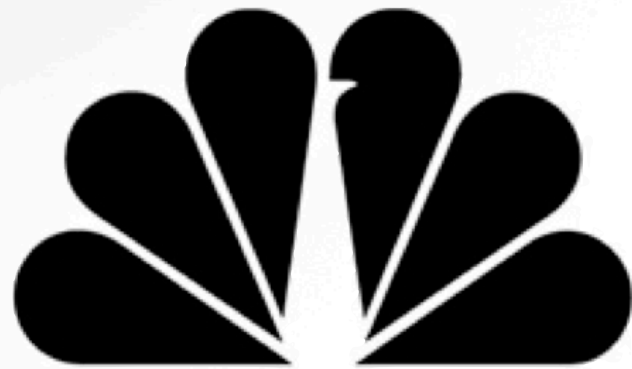


Closure



Closure

Closure



USATM
network

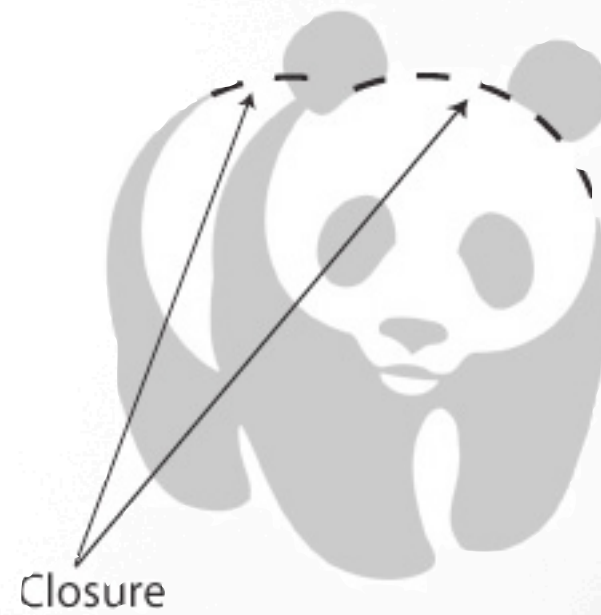


NYNEX

Closure



Closure



Closure



Closure



Closure

[Til forside](#) [Pleasure.dk](#) [Borsentv.dk](#) [Firmabilen.dk](#) [Børsen executive club](#) 

Lørdag 12. november 2011

BØRSEN.

Brent råolie
▲ 0,88%

C20
▲ 2,13%

Dow Jones Ind.
▲ 2,19%

Holdning: 194,00 2,65% Novo Nordisk B: 603,00 0,50% Novozymes B: 827,50 2,2%

Nyheder | Kurslister | Værktøjer | Avisen | Abonnement | Blogs | Kontakt | Kalender | Shop

Mest læste | Seneste nyheder | Investor | Privatkøkonomi | Økonomi | Politik | IT | Finans | Medier | Karriere | Sundhed | Motion | Gastronomi | Sport

Tema: Europa | krise

Weekend



Regeringen og EL enige om finanslovsramme
12:02 12-11 Opdateret kl. 12.46 - Socialdemokraterne og Enhedslisten (EL) er nu blevet enige om en ramme på 5 mia. kr. for finanslovsforslaget. Rammen dækker over ekstra skatter og afgifter. Det oplyser finansministeren.
[Læs mere...](#)

Det skal reklameafgiften bruges til
16:16 Regeringen og Enhedslisten forhandler om finansloven og er lørdag blevet enige om de økonomiske rammer, der blandt andet medfører en afgift på husstandsmeddelte reklamer. Regeringen

Jo. IT-projekter leveret til tiden (og til den aftalte pris) findes.
ciber

Min nyhedsliste

12:39 Ugen der kommer: Italien løber med overskrifterne

12:02 Regeringen og EL enige om finanslovsramme

11:33 Boligkøbere skal spænde bæltet ind

11:04 Banker sænker renter – men kun til gavn for sig selv

10:50 Helle Ib: Politikere

VW Up! Største tyske krigserklæring siden 1930'erne



De bedste vine til velhængte bøffer



Closure





Eurozonen
Euro, EUR

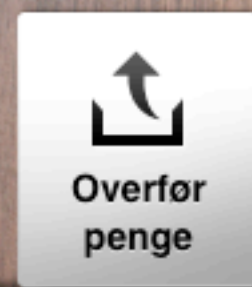
Kontant køb **7.5596**

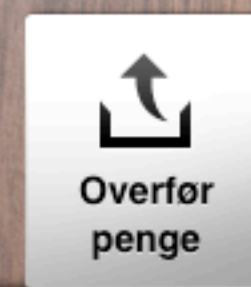
Havkatten [Jyske Bank] 2 dage siden 

Vi er MEGET GLADE for de mange downloads af Jyske Mobilbank til iPad (og for de stjerner I kaster efter den). Tak til jer! Vi fejrer det med...



3/4/12
Jyske Mobilbank til iPad
– oplev den nu!





Affordance

“Visual assessment of intended use”

Affordance



Affordance



Affordance



Affordance



Affordance - when missing



Affordance - when missing



Affordance - when missing



Affordance - when missing



Affordance - when missing



Affordance - when missing



Perceived Affordance

“Visual assessment of possible use”

Perceived Affordance



Perceived Affordance



Perceived Affordance



Perceived Affordance



Perceived Affordance



Perceived Affordance



When you have a hammer...



When you have a hammer...



When you have a hammer...



When you have a hammer...



When you have a hammer...



Adapted use



Adapted use



Adapted use



Adapted use



Perceived affordance → affordance

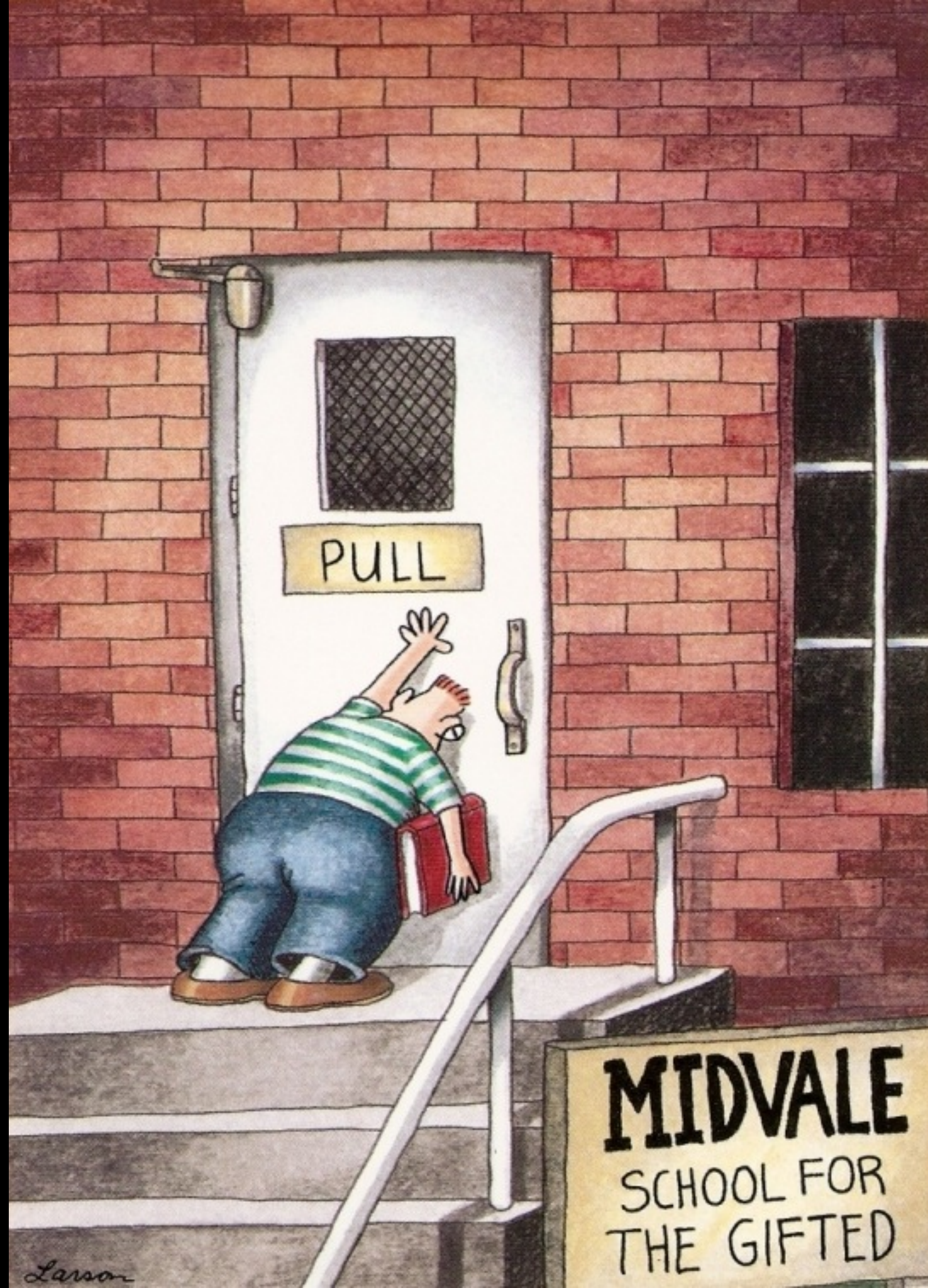


Perceived affordance → affordance



Perceived affordance → affordance





“Labels!”



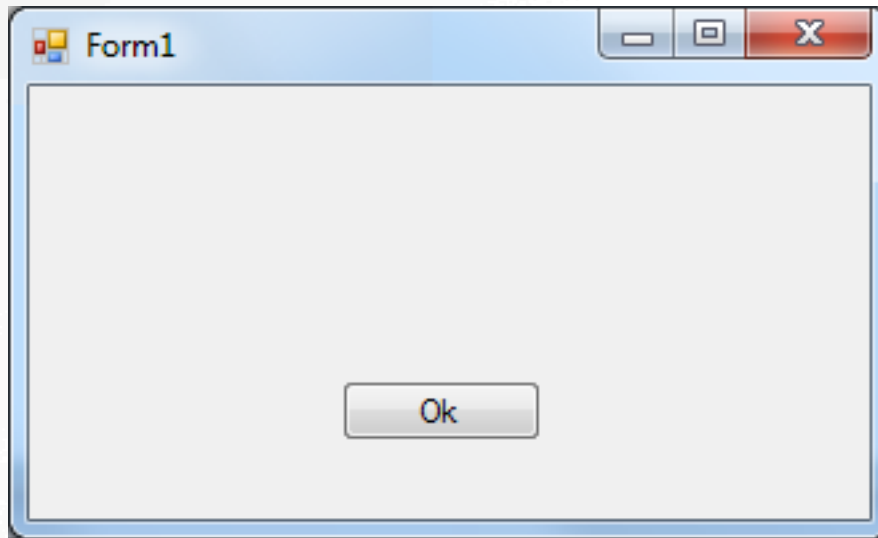
“Bigger labels!”



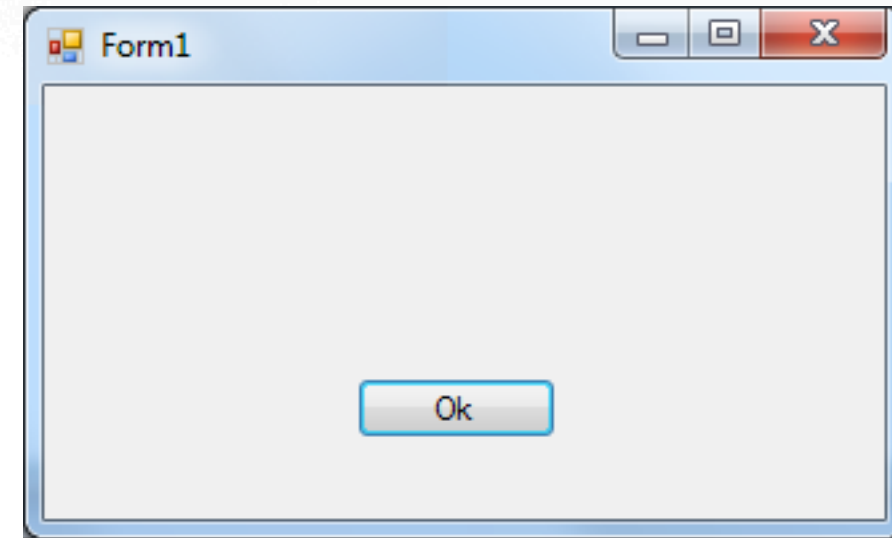
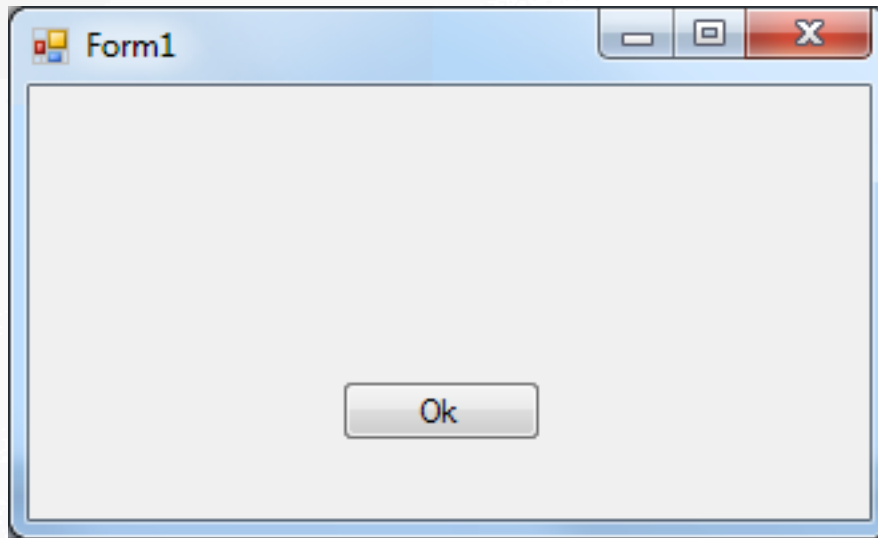
Ahhhh.... Much better!



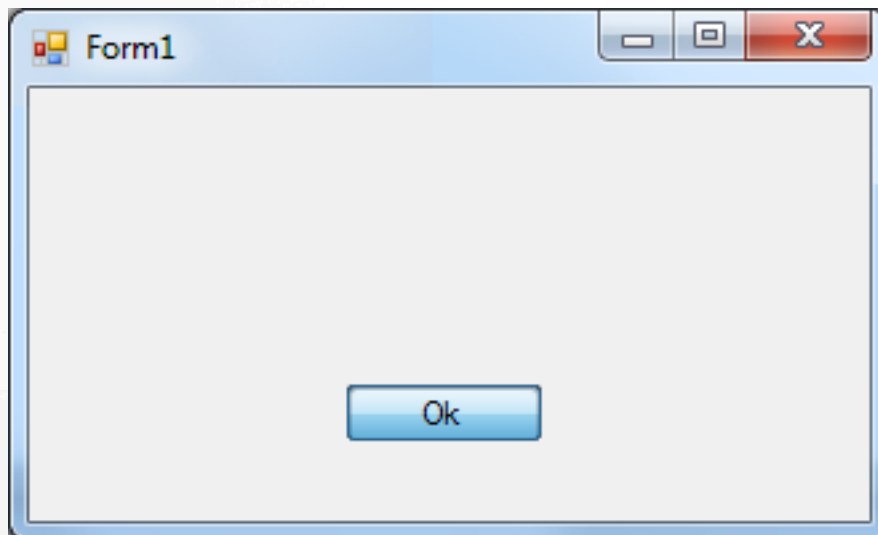
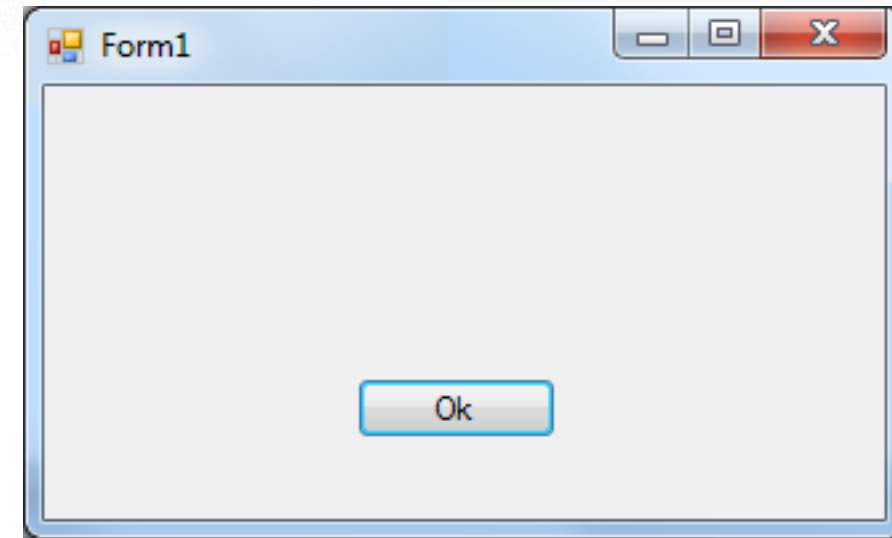
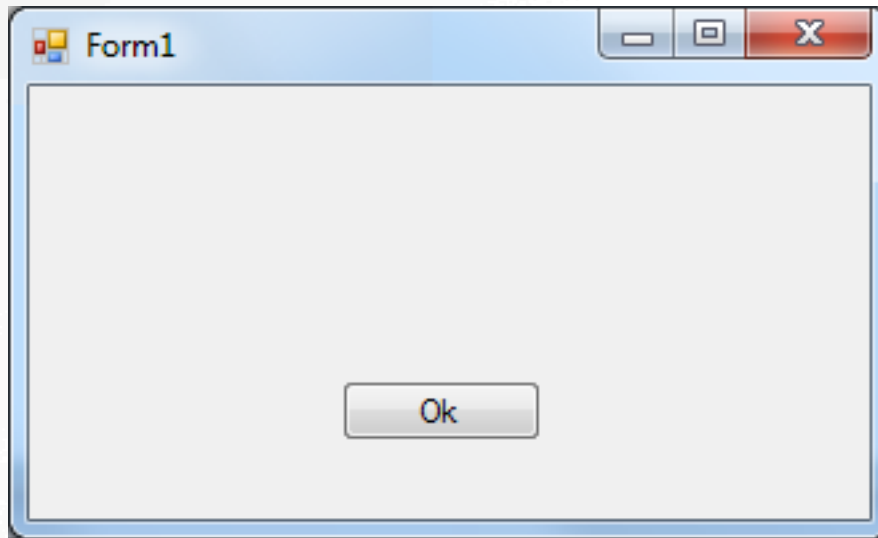
In software?



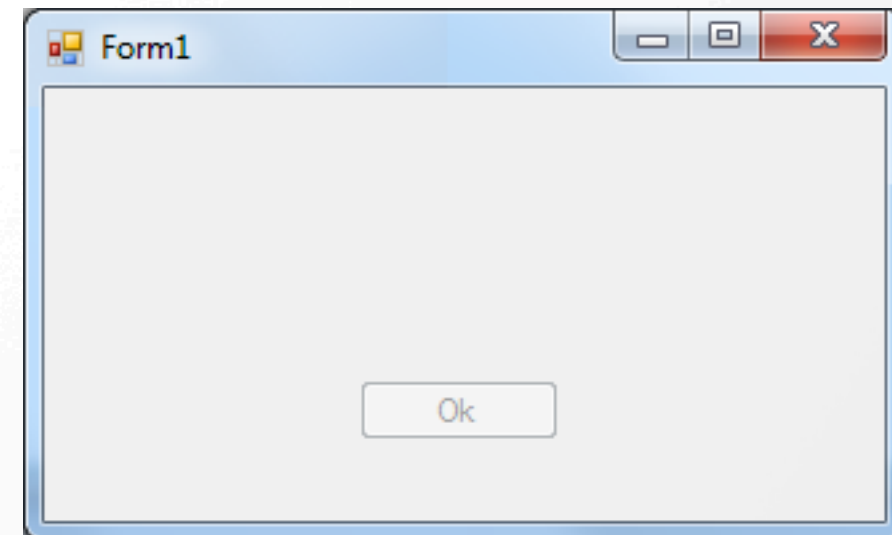
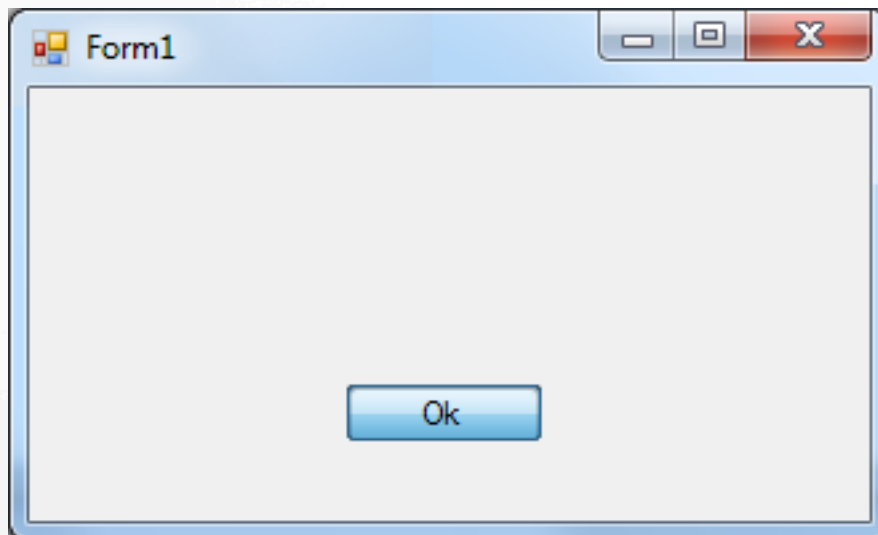
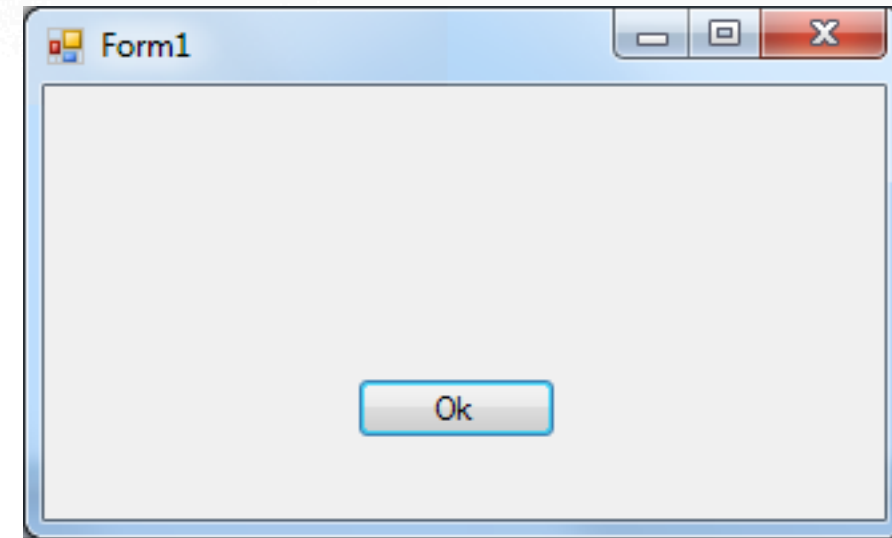
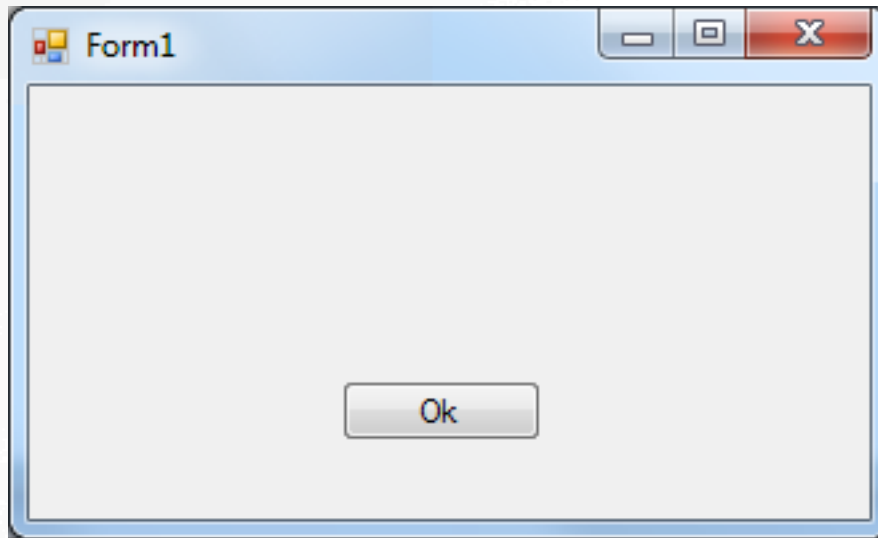
In software?



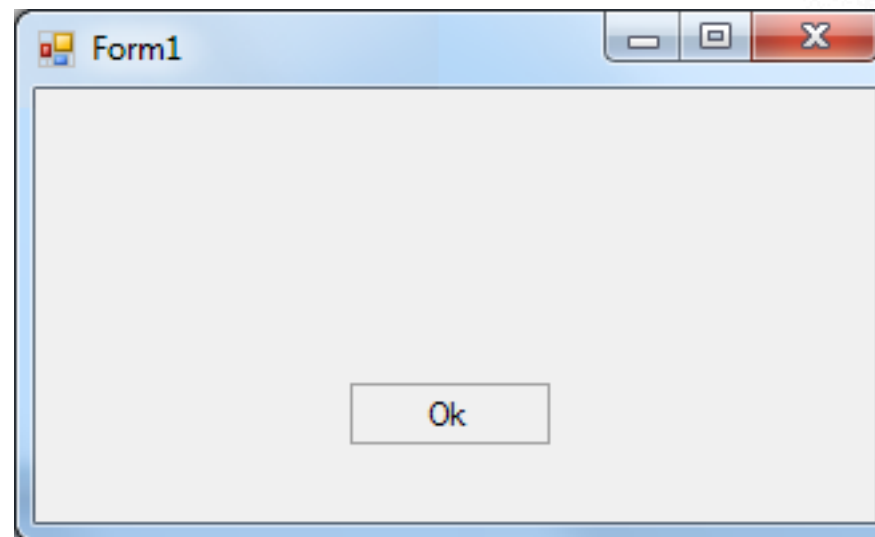
In software?



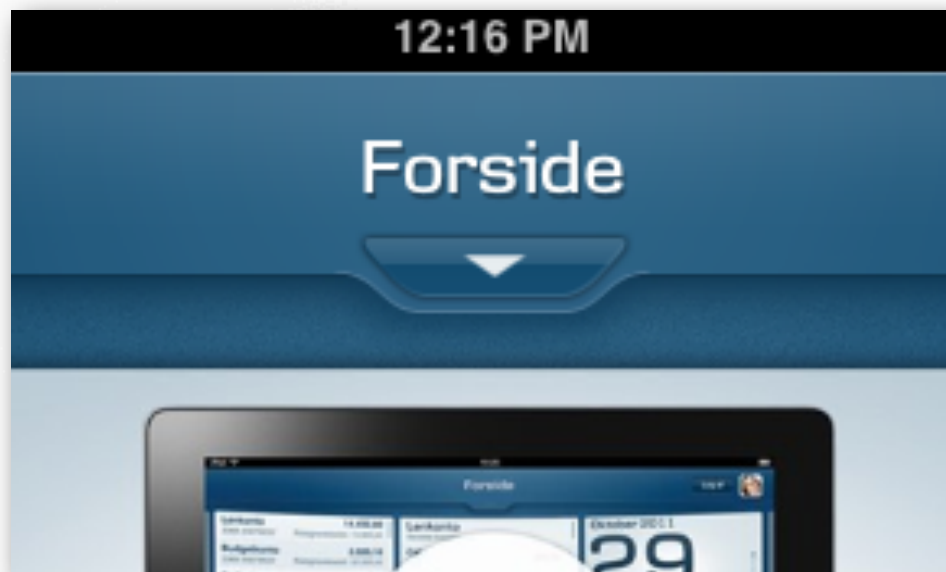
In software?



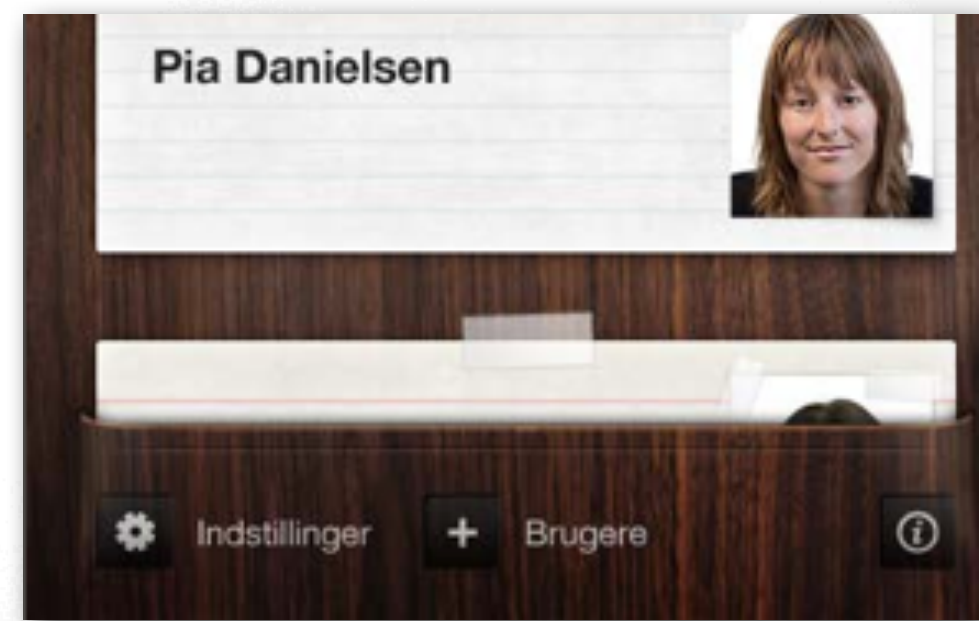
In software?



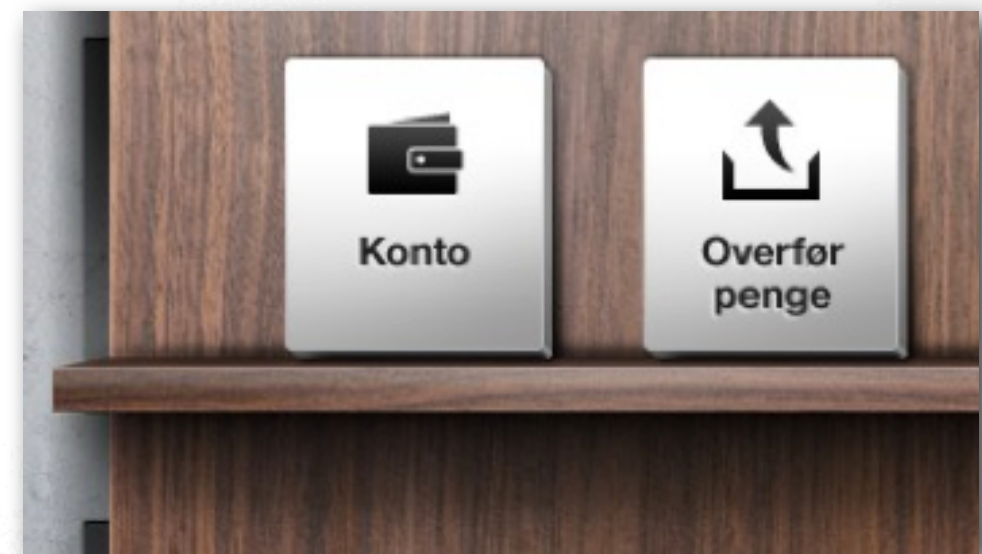
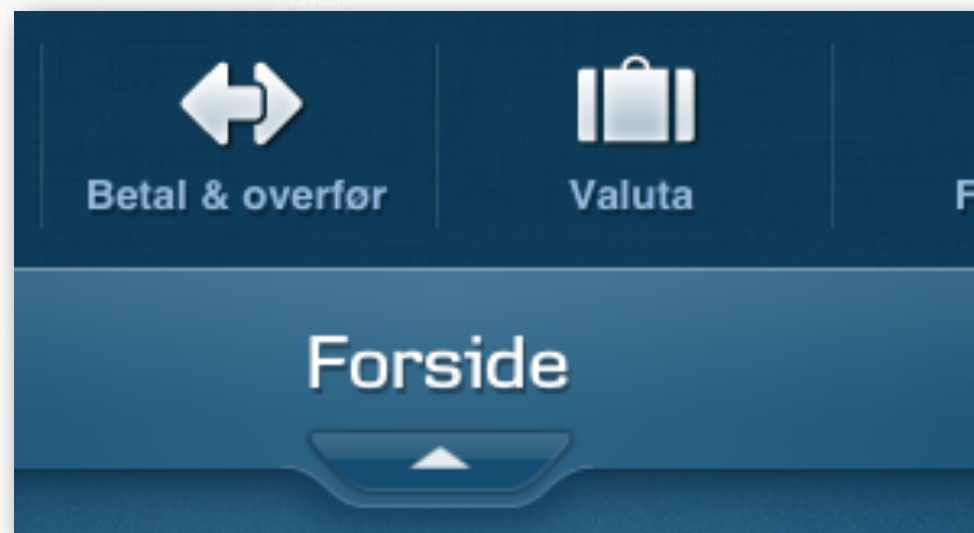
In Mobile Software?



In Mobile Software?



In Mobile Software?



Thank you for your attention!

Questions?

Twitter: @jjjtrifork

Mail: jjj@trifork.com