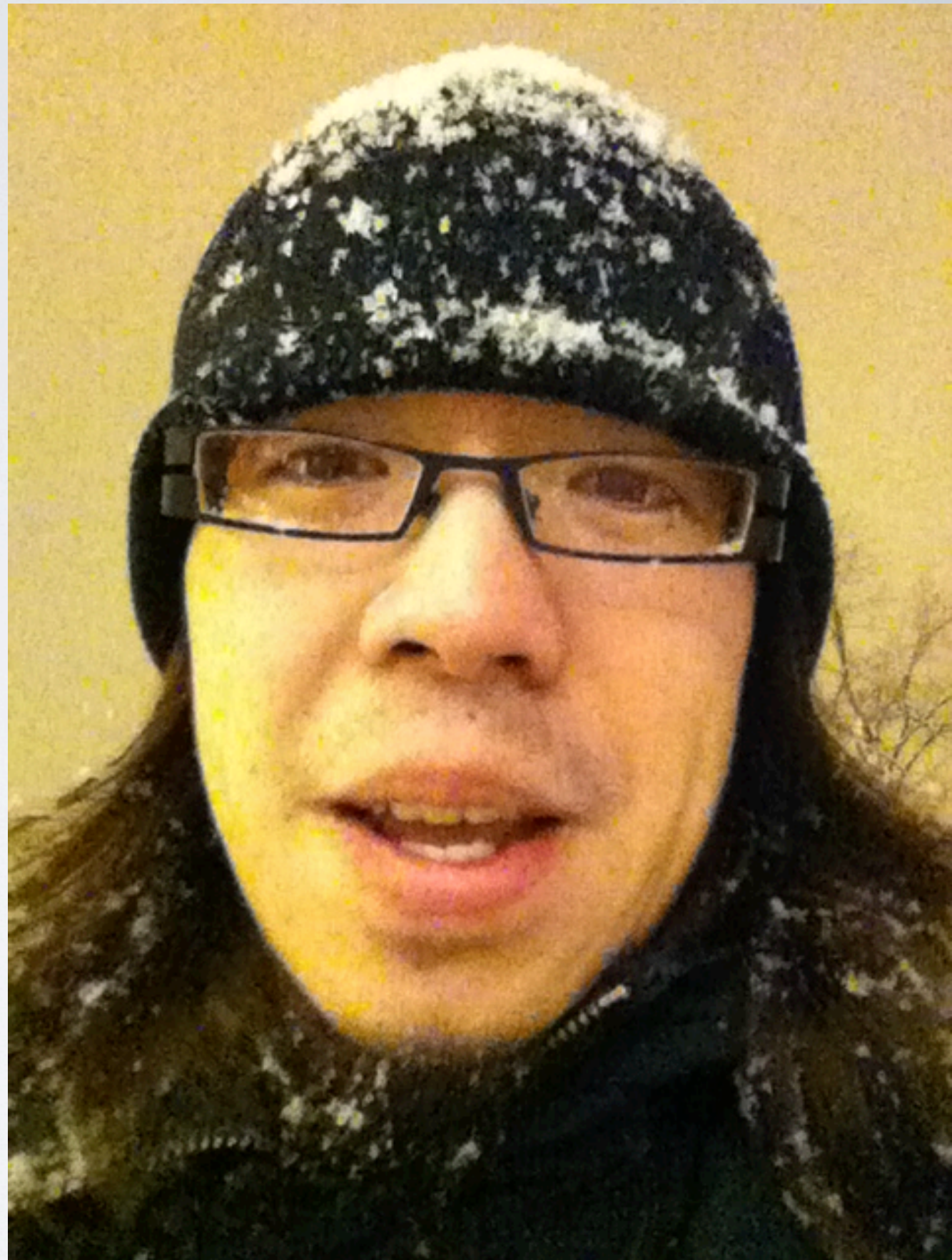


**Using QML to implement
a browser and Star Trek
LCARS interface**

Hi!
I'm Penk

penkia.net/portfolio
penk.chen@canonical.com



本日大綱

- **SlateKit the project**
- **Ubuntu Touch – introduction**
- **SlateKit – Shell & Base**
- **Okudagrams.js – layout engine**
- **Future Plans**

SLATEKIT

- **Open Source Tablet UX Building Kit**
- **A set of Qt-based UI components**
- **Runs on top of Android products**
- **For people who are crazy enough to create their own tablets**

WHY DON'T YOU



JUST USE ANDROID?



QtQuick 2.0 & UX

Graphic

Device Info

Input Event

Wifi Setting

Qt5 Modules & Middleware

EGLFS QPA

QtSensor

EvdevTouch

Connman.Qt

Ubuntu Base System

libhybris wrapper

`/system/lib/hw`
`/vendor/lib/egl`

Tslib

ConnMan

wpa_supplicant

Linux Kernel

fbdev

sensors

touchscreen

wireless driver

DEMO

github.com/penk/MeeTo

UBUNTU TOUCH

- 使用 Qt 和以手勢操作的介面
- 設計師喜歡紫色
- 大部分的東西真的會動
- 紫色, 到處都是紫色



ANDROID

- 使用 CyanogenMod 作為基礎設施
- 基於相同核心和 Binder/Socket IPC
- 主要是為了 HAL 和 RIL
- 獲得 Just a Unity shell 成就

Android

LIBHYBRIS

- 波蘭人 Carsten Munk 開發
- Android driver 的 Glibc 白手套
- GPU 和 Camera 都會動了
- 2012/8 釋出 (咳咳)

libhybris

Android

QTUBUNTU

- 提供 Platform API
- 剪貼簿、視窗、螢幕
- Ubuntu 的 QPA
- SurfaceFlinger 管理

QtUbuntu

libhybris

Android

UI COMPONENTS

- 基於 QtQuick 2.0
- 每一家都自己做一套
- 佈景主題切換
- 對螢幕密度的處理

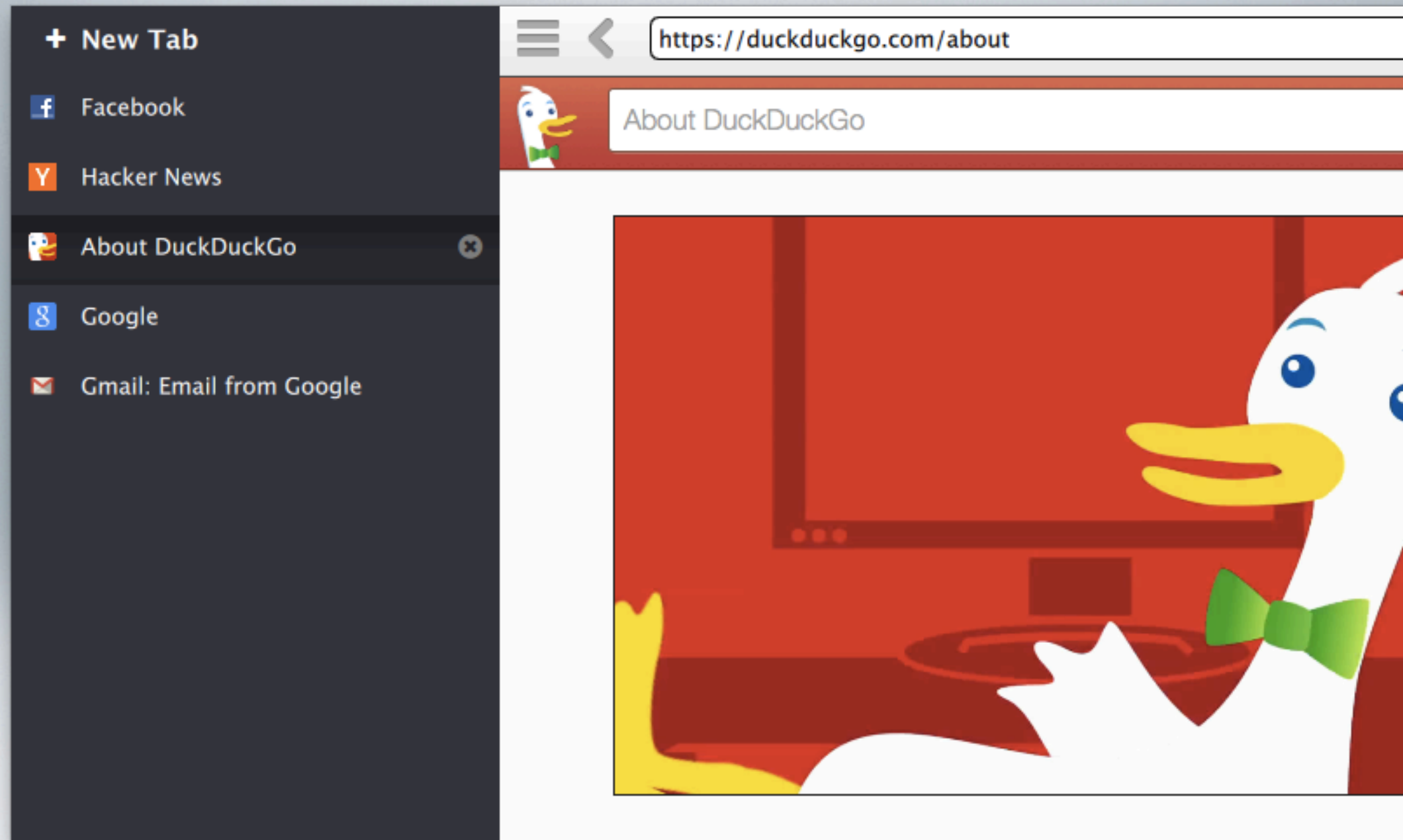
UI Components

QtUbuntu

libhybris

Android

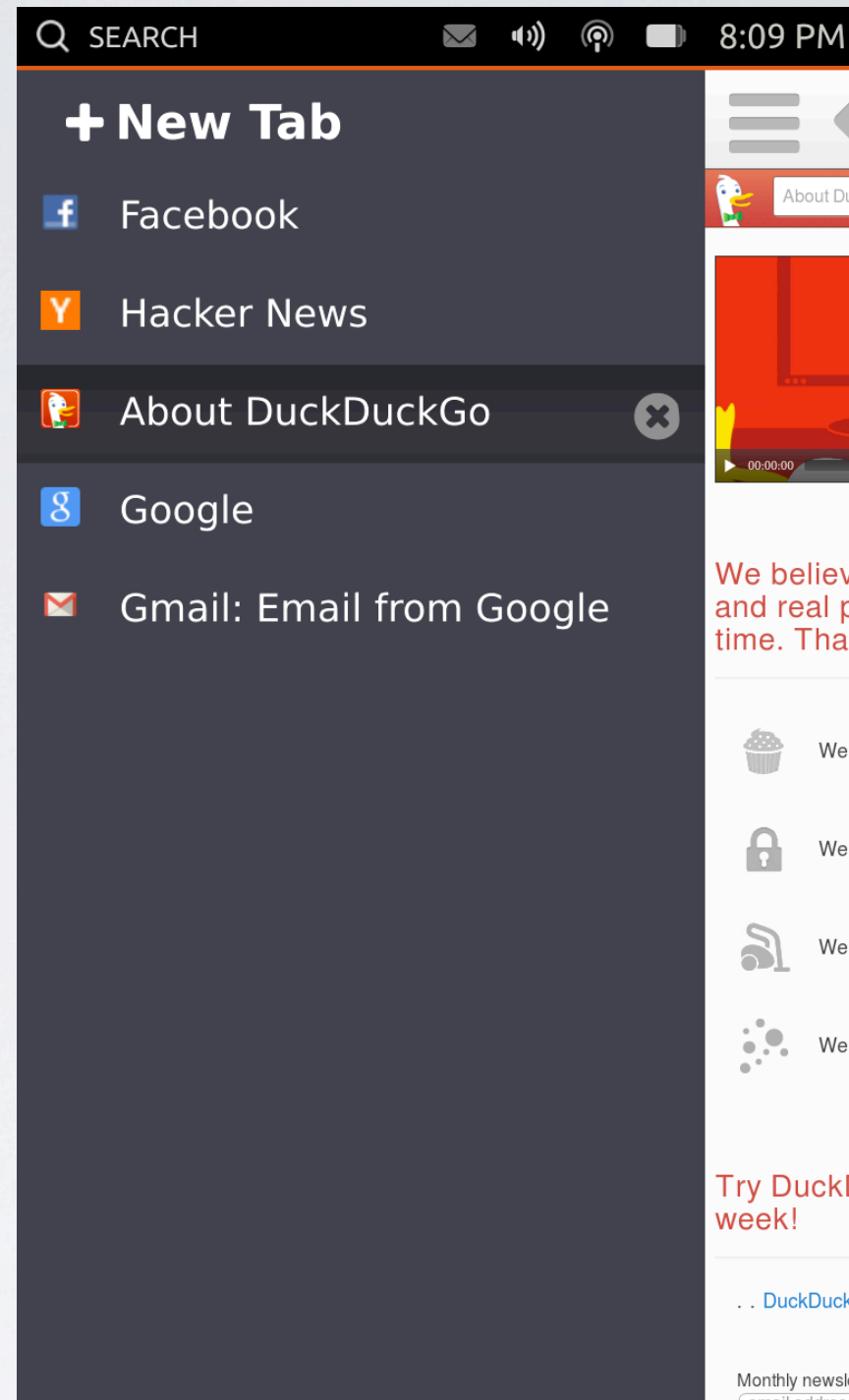
SlateKit Shell - the web browser with a hamburger button ☰



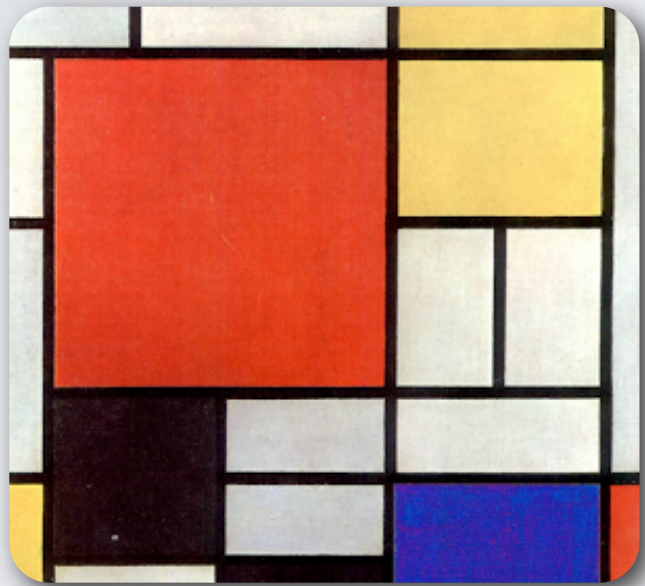
SlateKit.org

DEMO

github.com/penk/SlateKit



```
add-apt-repository \
    ppa:ubuntu-touch-coreapps-drivers/collection
apt-get update
apt-get install slatekit-shell
```

Okudagrams.js

自動介面產生引擎

MOTIVATION

- 設計多個尺寸的介面相當累人
- 模版和靜態頁面產生器也很麻煩
- 為什麼不交給演算法來決定？

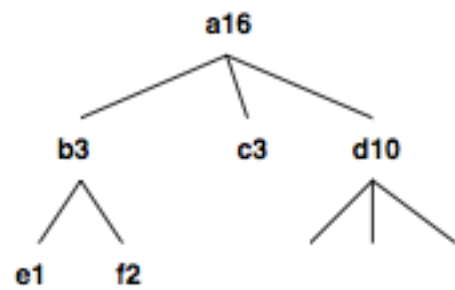
PROBLEM

- 條狀堆積 (Strip packing) 問題
- 定義零件種類決定次序 (permutation)
- 根據零件權重決定排置 (placement)

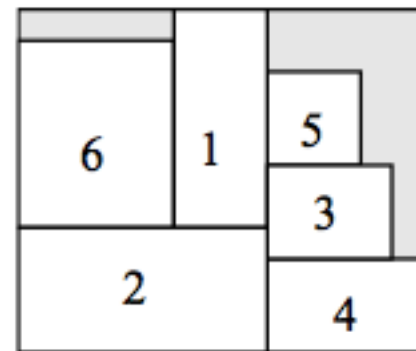
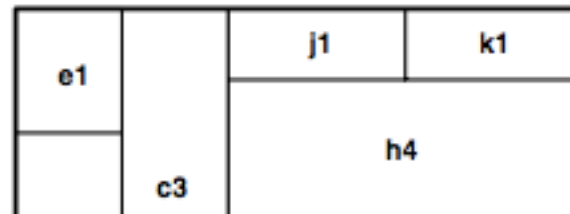
DESIGN

- 定義單元權重， 輸入清單， 產出介面
- 將螢幕切割為區塊 (container)
- 將零件 (items) 放入區塊

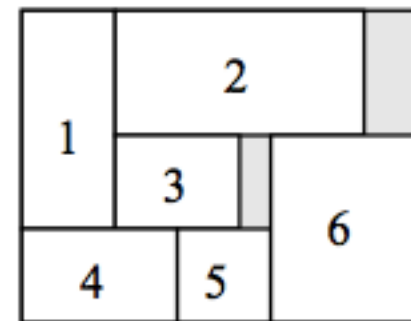
DESIGN (CONT.)



(a)

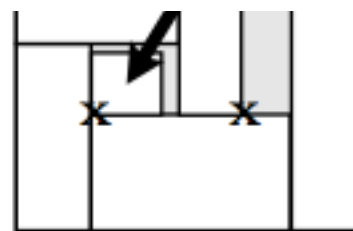


(a) guillotine cut

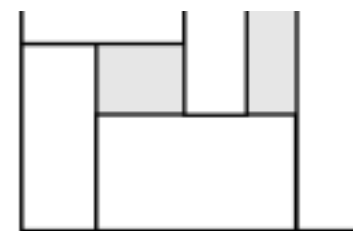


(b) non-guillotine

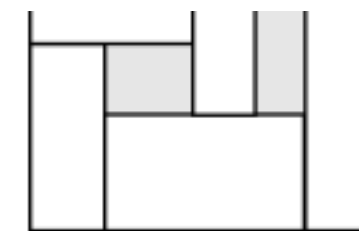
Figure 1: Examples of placements with/without guillotine cut constraint



(a) Baker et al.



(b) Jakobs



(c) Liu and Teng

Figure 8: Three bottom left algorithms for the strip packing problem

DEMO

github.com/penk/OkudagramsJS

FUTURE PLANS

- **改進螢幕切割演算法**
- **使用 Flexbox 移植到 HTML5**
- **Markdown 解析、FSM**
- **語音控制 Sphinx-QML**

SYSTEMS CONTROL / STARFLEET REGISTRY

ACCESS

45-4

VESSEL

USS AGAMEMNON
USS ARIES
USS COCHRANE
USS CRAZY HORSE
USS ESSEX
USS HOOD
USS MELBOURNE
USS SUTHERLAND
USS YAMATO

REGISTRY

• NCC-11838
• NCC-21168
• NCC-58318
• NCC-50448
• NCC-173
• NCC-42288
• NCC-82043
• NCC-71015
• NCC-71807

CLASS

• APOLLO
• MIRANDA
• OBERTH
• CHEYENNE
• DAEDALUS
• EXCELSIOR
• EXCELSIOR
• NEBULA
• GALAXY

47 ALPHA

500-6

COMM SYSTEM

639

40-0

60-0

60-1

COMM

845

10-3

47-3

934-7

LCARS

55-1

300

90-6

12-1

MODE SELECT

82-5

MAIN IMPULSE ENGINE

SHUTTLE BAYS 2/3

BUSSARD COLLECTORS

WARP ENGINE FIELD GRILL

WARP ENGINE NACELLES

BATTLE BRIDGE

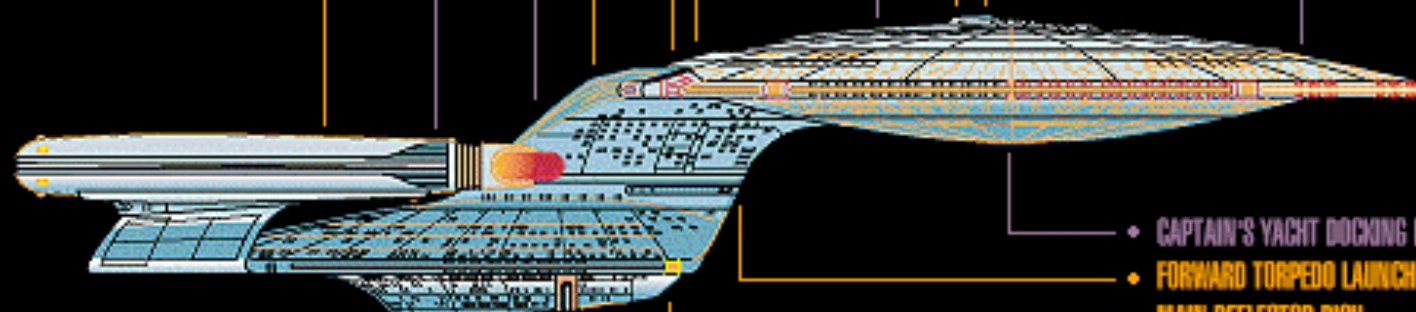
MAIN SHUTTLE BAY

OBSERVATION LOUNGE

MAIN BRIDGE

DORSAL PHASER ARRAY

TEN FORWARD LOUNGE



• CAPTAIN'S YACHT DOCKING BAY
• FORWARD TORPEDO LAUNCHER
• MAIN DEFLECTOR DISH

738891114 56882 8054189750031
578525858 58122 7834619457200
435282841 80348 7300923456712

STARSHIP SCHEMATIC GALAXY CLASS U.S.S. ENTERPRISE NCC-1701-D



Thank You! :-)

11/22/2008

http://static.fjcdn.com/large/pictures/9b/40/9b4025_3065870.jpg