Social programming
Cash reward for Facebook programs

Software developers will be offered up to $250,000 (£125,000) to develop applications for popular social network Facebook, the site's founder has said.

Mark Zuckerberg announced incentives to firms and individuals who create “innovative and disruptive programs”.

There are already around 4,000 of the small programs available on the website. They include music and digital gifts, games of scrabble and fortune cookies.

The fbFund grants, announced at the TechCrunch40 conference in San Francisco, will come out of a $10m pot gathered by Facebook's primary backers Accel Capital and The Founders Fund.

"With just a little bit of capital, a company can grow to hundreds of thousands of users," Mr Zuckerberg said.

Growth spur

Applications - small programs
Overview

- History of programming
- What are social network systems?
- Basic concepts of Social programming
Brief History of programming

• A programmer’s perspective!
Charles Baggage

- England, 1791 - 1871
Difference Engine
Difference engine

- Mode: physical
- Instructions: change gears
- Task: perform calculations
ENIAC

• USA, 1942
ENIAC

- Mode: electrical
- Instructions: change cables and switches
- Task: perform calculations
John von Neuman

- Hungary / USA 1903 - 1957
Shared program technique
Alan Turing

- England, 1912-1954
Turing Machine

A fanciful mechanical Turing machine’s TAPE and HEAD. The TABLE instructions might be on another "read only" tape, or perhaps on punch-cards. Usually a "finite state machine" is the model for the TABLE.
Turing machine

- Mode: logic
- Instructions: “Move left”, “move right”
- Task: change state
Short code (1949)

\[ a = \frac{(b+c)}{b+c} \]

was converted to Short Code by a sequence of substitutions and a final regrouping:

X3 = (X1+Y1)/(X1+Y1)
X3 03 09 X1 07 Y1 02 04 X1 Y1
07Y10204X1Y1
0000X30309X1  

substitute variables
substitute operators and parentheses.

group into 12-byte words.
Grace Hopper

- 1943-1966, USA
First bug

0800 12200 9.032 84.2 025
1000 12200 9.032 84695 915
1306 1020 MP MC 14049 915
OCC 2120 2.130 764 220
Relay 6-2 in 033 failed speed test
in testing - now test.

1100 Started Cosine Tape (Sine check)
1525 Started Multy Adder Test.
1545 Started Panel F
First actual case of bug being found.
A0 compiler (1951)
Assembly language

- **Mode:** “juggling”
- **Instructions:** “Move to register”, “add”
- **Task:** calculations
High-level languages

- Mode: procedural / functional
- Instructions: “Open file”, “read text”
- Task: file operations, menus
Object Oriented languages

- Mode: Object oriented
- Instructions: “Create button”, “delete account”
- Task: desktop applications
HTML

- Mode: multimedia & network oriented
- Instructions: “Link to document”, “show picture”
- Task: hierarchical browsing, information retrieval
Social programming

• Programs running on social platforms
  – Facebook, MySpace, FriendSter, Hi5, Multiply, Zorpia
• Platform provides API and resources
• Application uses API, creates (G)UI
• User interacts with Applications
News Feed

IQ
Katerina Mougiatiwth added the IQ Test application.

Nicolas Papaconstantinou changed his profile picture.

Mark Wood is attending Matt Giles 'Undone' gig.
Scott Dawson added the Art of War Quotes application.
Kostis Papageorgiou joined the group GINNASIO & LUKO MORAITI - TO 4 & 3 ANTIKOXAI.
Katerina Mougiatiwth added the Cities I've Visited application.
Poukhdoumis Ypsimatosopoulos is concluding: There is only one way to program: the right way!
Max Green and Grace Prince are now friends.
Sotiris Makrygiannis is attending Elena Farewell and pre-farewell for Tina and Drago.
Scott Dawson added the Our Links application.
Scott Dawson joined the group Petraeus for President.
Rachel Lockwood is attending Comp Sci Girlie outing!!
Giles Medd joined the group DOMINOS does it best.
Sotiris Makrygiannis and Quim Gil are now friends.
Jeffrey Cuenca is preparing for the madness to come the next few weeks.

Marios Perdios posted a video.
Starbucks Commercial
http://www.youtube.com/watch?v=
"Dontcha want starbucks Right Now?"
Facebook

- “Online social networking”
- Each user has a profile
- Each user has “friends”
- Users generate content (messages, pictures, discussions)
- Information is “filtered” through one’s social network
Facebook applications

• To generate content, users use applications
• Everything in facebook is an application
  – Message composer
  – Photo Albums
  – Poking
Facebook applications

- Mode: social
- Instructions: “Add friend”, “Tag photograph”, “retrieve human relationships”
- Task: social networking
Facebook applications

• Facebook is the Operating System
• Facebook applications utilise various “services” offered by the OS
  – Information about users
  – Friends
  – Events
• Users interact with the applications
How to think about Facebook

- Facebook customised based on who your friends are
- Dynamic content based on who your friends are
- Information filtered based on who your friends are

- Discussion:
  - Is this a good way of dealing with information overload?
  - (Vanevar Bush)
Take a break

- 2 minutes break
Overview of social web architecture

- Abstract layers
- Primitive API
- Facebook Query Language (FQL)
- Facebook Markup Language (FBML)
- Application Components
# Facebook platform

## Application

<table>
<thead>
<tr>
<th>Facebook Servers</th>
<th>Your Servers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo Album</td>
<td></td>
</tr>
<tr>
<td>Friend Wheel</td>
<td>AddNewGPSTrail()</td>
</tr>
<tr>
<td>Cityware</td>
<td>SendFunWallMessage()</td>
</tr>
</tbody>
</table>

## API

<table>
<thead>
<tr>
<th>Facebook Servers</th>
<th>Your Servers</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetFriends()</td>
<td></td>
</tr>
<tr>
<td>AreFriends()</td>
<td></td>
</tr>
<tr>
<td>GetFirstName()</td>
<td>AddNewGPSTrail()</td>
</tr>
</tbody>
</table>

## Repository

<table>
<thead>
<tr>
<th>Facebook Servers</th>
<th>Your Servers</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Relationships</td>
<td></td>
</tr>
<tr>
<td>Events</td>
<td></td>
</tr>
<tr>
<td>Messages</td>
<td>GPS trail, Maps</td>
</tr>
<tr>
<td>Images / Graphics</td>
<td>Images / Graphics</td>
</tr>
</tbody>
</table>
Facebook API

- getFriends()
- eventGetParticipants()
- Etc, etc
Facebook Query Language

- Provides SQL-like access to repository data
- Query table for results

Example:

```
SELECT name, pic FROM user WHERE uid=211031 OR uid=4801660
```
Facebook Markup Language

- Your program’s text output is parsed and rendered
- HTML - variant
- Makes things easier

- Example
  - `<fb:profile-pic uid="12345" linked="true" />`
Application Components

- See http://developers.facebook.com/anatomy.php
- Main application page
- Application Box (profile text)
- Invitations
- Notifications
• Merging online network with physical networks

• Facebook: collection of online friends
• Bluetooth: collection of urban / physical friends
• Second life: collection of virtual world friends
• …

• Can we put all these together?
Overview

Bluetooth Friends

2nd Life Friends

... Friends

Cityware Server

Facebook Friends

Facebook Server

Cityware Application
P4

• Create a Facebook application
• Due: Wednesday, April 2 at 9:00AM

• Work in pairs (cannot work with the same person as in P3 or P5).