Quiz 3

Routing in Pastry



route(0212) and route(0102)



route(0212) and route(0102)



route(0212) first, then route(0102)



route(0102) first, then route(0212)



route(**0**212) and route(**0**102)



Searching in Mercury

A new subscription is sent to the hub that corresponds to one of its dimension and is stored in nodes that maintain the values overlapped with range.

Hy

Node A:

100 < x < 500

600 < y < 700

H_x

An update (publication) is sent to all hubs.



Find all entities within 2 meters from this player



$$(x-i)^2 + (y-j)^2 \le 4$$

$$x \le sqrt(4 - (y-j)^2) + i$$

 $y \le sqrt(4 - (x-i)^2) + j$

A new subscription is sent to the hub that corresponds to one of its dimension and is stored in nodes that maintain the values overlapped with range.

Hy

Node A:

 $x \le sqrt(4 - (y-j)^2) + i$

 $y \le sqrt(4 - (x-i)^2) + j$

H_x

$$(x-i)^{2} + (y-j)^{2} \le 4$$

$$x \le sqrt(4 - (y-j)^{2}) + i$$

$$y \le sqrt(4 - (x-i)^{2}) + j$$

$$i - 2 \le x \le i + 2$$

$$j - 2 \le y \le j - 2$$

P2P with Server



Problem: order of messages received are wrong.



Problem: When to execute? (Is there another message generated earlier than this that is still on its way here?)



Bucket Synchronization with Dead Reckoning



Inconsistency still arises due to prediction.

Server can be consulted to resolve conflicts



Alternative is to ensure every update is received before executing the bucket

Advantage: players can't modify games or send different messages to each other by compare each other states.

Server can help make the comparisons, ensuring **consistency** among the players, therefore **detect cheating.**

Idea: A peer p only needs to communicate with another peer q if p is relevant to q

Problem: No global information in P2P architecture.

Server has global state information and can help with **interest management**.

Mobile Games

Single player: not interesting



Mobile gaming devices allow multiplayer over WiFi



AD-HOC MODE



Compete against players on nearby PSP® systems. Make sure your Wi-Fi switch is on and you can communicate with local PSP® systems without an internet connection. You can play together in a house, a backyard, an airport, a lobby - anywhere! Depending on the game, up to 16 PSP® systems within range of each other can be connected using Ad Hoc mode.

For local offline multiplayer gaming (Ad Hoc mode) you need:

- multiple players on PSP[®] systems within range of each other
- each with a PSP[®] set up with Ad Hoc on "automatic" or the same channel
- each with a PSP[®] game that supports multiplayer Ad Hoc mode

mode

supports multiplayer Ad Hoc

each with a PSP[®] game that



INFRASTRUCTURE MODE



Play online with people across the globe, all from the comfort of a Wi-Fi hotspot. Just check the back of the game packaging to see if it supports infrastructure mode, connect to a hotspot, insert the game UMD[™], follow the on-screen instructions and start playing online!

For online multiplayer gaming (Infrastructure Mode) you need:

- a Wi-Fi internet hotspot or wireless home network
- a PSP connected to that hotspot or network
- a PSP[®] game that supports multiplayer Infrastructure mode

Infrastructure Multiplayer Games Intrastructure Multiplayer Games

multiplayer infrastructure mode



DITEL INTERNET

CUSUUGI

Multi-player: P2P



Developers



Connected Mobile Games is One of the Fastest Growing Segments of the Mobile Games Market

According to a recent survey, 45% of the people who play games on their mobile phones are playing online multiplayer games at least once a month. And 20% are playing online every week.

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Recent News

October 23, 2007

Tezuka Production chooses SNAP Mobile by

Architecture

The SNAP Mobile solution provides a full range of technologies and services, including SNAP Mobile Game Services, Instant Messaging and Presence Services (IMPS) and Web Services.

Architectural Overview of the SNAP Mobile Engine



<u>http://snapmobile.nokia.com/core/en/architecture.html</u>



Winner Chess A Moment developed by

G-mode

The ultimate strategy game gets a new lease on life with exciting features such as chat, presence and multiple board play. The option to play with no time-out feature makes it perfect for beginners.

Multiplayer Games Category - Male Segment



Winner Street Golf developed by

Drive your shot through traffic, swing between lampposts and put your putting to the test on the craziest golf course ever. Practice in the backyard before challenging friends to 18 holes.

Multiplayer Games Category - Female Segment



Winner

Puzzle Bobble: Mobile Mania developed by

TAITO

Burst the bubbles before they drop to the floor by matching three colours in a row. Challenge your friends and family to play live for some brilliant bubbly fun.





Runner-up 4ToScore developed by



Release the balls into the chutes and make a row of four in any direction to win. Challenge friends, compete across devices and chat live as you race to be first with 4ToScore.



Runner-up **Battle Tams** developed by HITLE

There's an entire world made out of candy and it's your mission to become the ruler. Play one of the four characters and use your special weapons as you battle for Candy Planet



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Runner-up Mapan developed by

oreative engineering

Raise and train a unique character by passing on parts of your own personality in order to compete with players from around the world. Develop his mindset and teach him skills to truly become master of the game!

Other limitations of mobile phones:

CPU screen size keyboard input

Mobile devices are multimedia devices:

camera mic location

What kind of games can we design for these devices?



http://hpcorp.feedroom.com/?fr_story=FEEDROOM178531&rf

The Journey

The Journey is a new and unique adventure game experience for your mobile phone. You are in the role of an infamous detective and have to solve a mysterious case not only by making it through the story, but also by walking to different locations.

Gone are the days where you watch a virtual character moving around on your display. Now you have to move yourself. The game is aware of your movement. Right at the beginning when you as the detective have to leave your bureau and go outside, you have to take your mobile and go through the streets of the city you live in.

The game saves the locations and in the course of the story you will have to return to your bureau and walk back to the place where you started playing.

Achievements

- The Journey received a jury award at the "Austrian Multimedia and e-business State Price".
- The game is the winner of the Symbian Open Summer contest '04, organized by NewLC.
- It was selected as one of the 23 best projects (out of over 400 entries) at the Europrix Award. It was presented at the festival from the 19th-21st of November 2004 in Vienna. Among many other activities, it was also possible to



- The Austrian television channel ORF produced a 4 minute report about the game. You can view it online.
- The game has already been downloaded more than 70,000 times.
- An article describing the workflow of game development for Symbian OS has been written for the university to







http://iperg.fit.fraunhofer.de/



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