



Mobile Computing for Informal Economies

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Our Goal: Senegal

- To *develop* Mobile Phone applications for businesses connected with the Women Business Center (WBC) located in Saint Louis, Senegal.
- Accelerate learning process of Senegalese programming students participating in Bootcamp





Saint Louis: National Council of Negro Women Incubator



- US NGO that was established in 1935 based in Washington DC.
- NCNW has been operating in Senegal (Dakar, Thies and Saint Louis) since 1975.
- Main areas of activities are education, health and economic empowerment of women.
- Saint-Louis office houses the Women's Business Center (WBC).



Saint Louis: Women's Business Center (WBC)

- Supported 7 resident clients (women entrepreneurs)
- Provides computer learning and resources for their business
 - Access to Internet
 - Accounting
 - Marketing
 - Management
 - Business plan
- Promotion of clients' products: Fairs and business trips





Challenges

- Targeted users are
 - Illiterate
 - If spoken language: French & Senegalese
- Mobile phones are
 - Older & variety of models
 - Limited resources



Mobile Projects

- Educational Dictionary
- Financial Record
- Focus on building visual applications



Educational Dictionary

Jun Yuan
Tapsie Giridher,
Justin Lapre



Application Specifications

- Focus:
 - To help educate children
 - To create positive learning perception
 - Keep students in school
- Why Pictorial perception?
 - Verbs and Nouns are most important
 - Advantage to use animation for verbs
- The user interface is a crucial part of the application.



User Interface

- Simple
- Easy to use
- Appealing
- Ability to invoke children interest
- Easy and efficient navigation



Main Screen



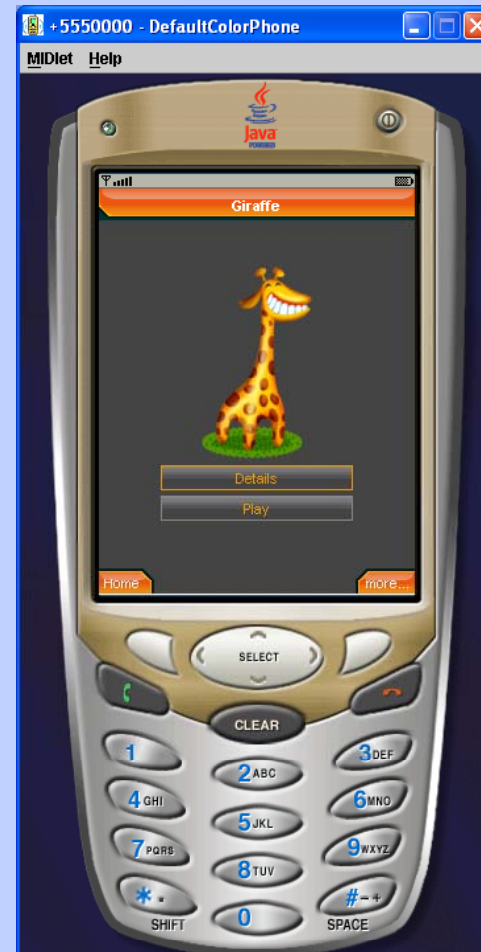
- Scrollable grid
 - 3 x 3 grid of images
 - Randomly arranged
- Buttons:
 - Back option :
Navigates to previous screen
 - Exit : quits the program



On Selection:



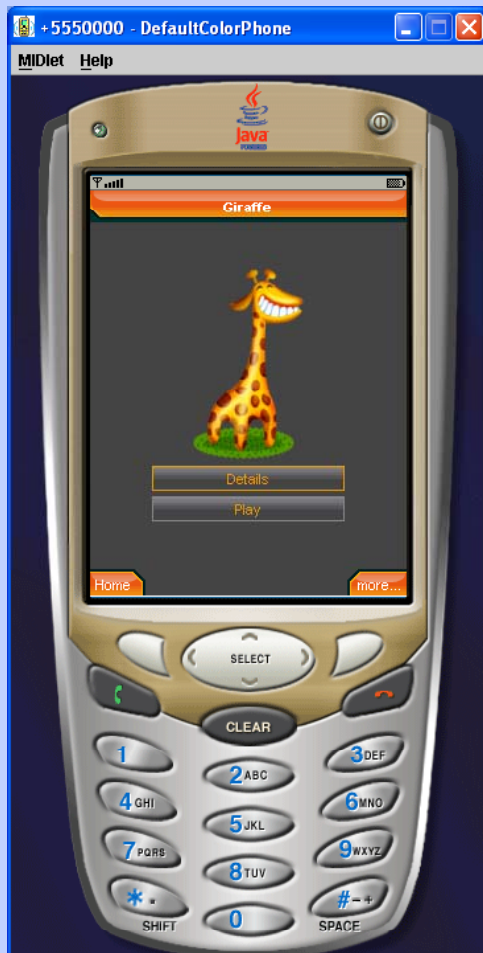
Main Screen



Word Screen



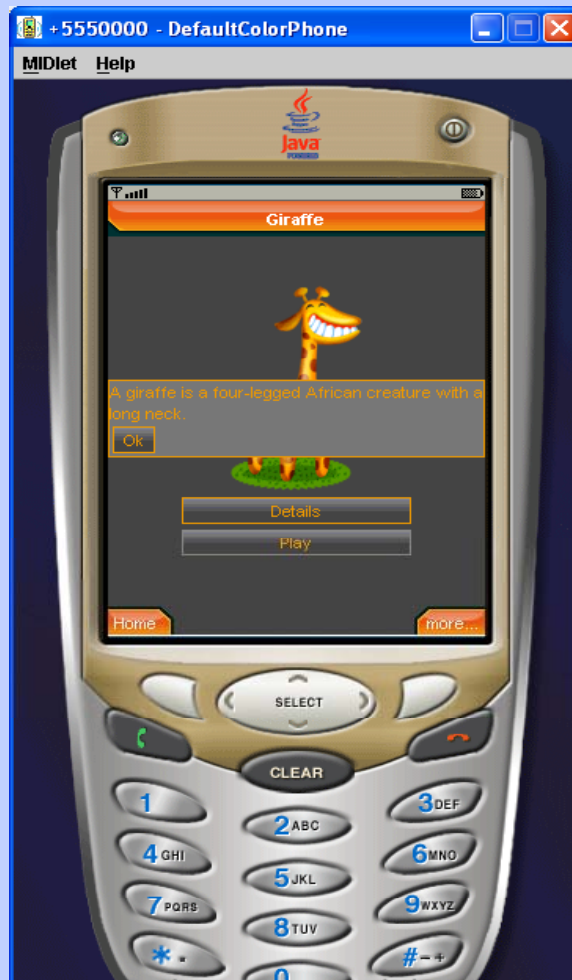
Word Screen



- After selection of Image
- Enlarged picture
- Buttons:
 - Details : Specifies the details of the picture object
 - Play : plays the pronunciation of the picture object
 - Home : Navigates to the picture grid screen
 - More : next / previous / random



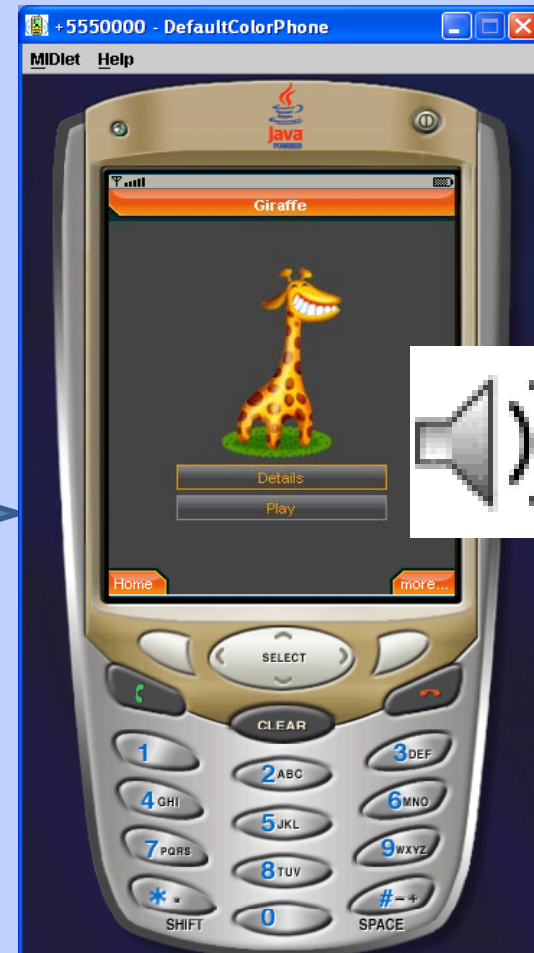
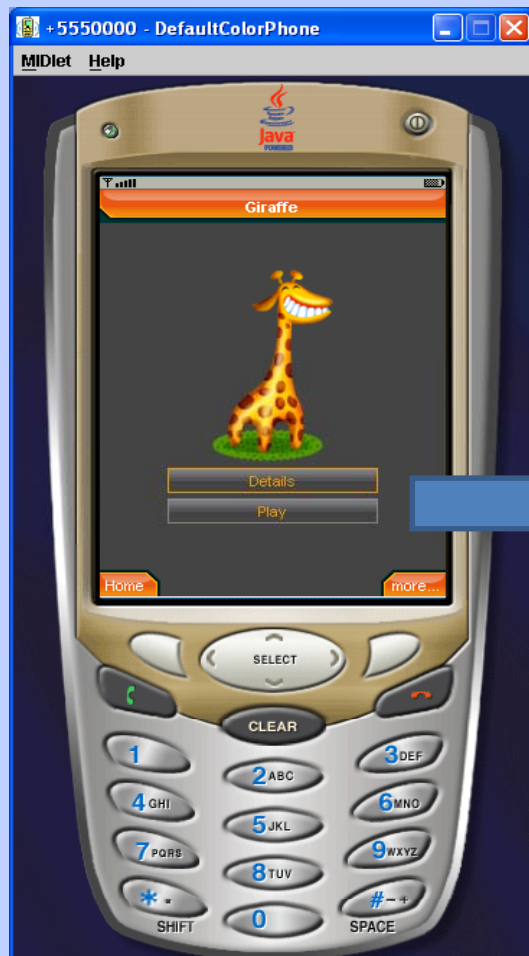
Word Details



- Provides:
 - Description of object
- Options:
 - Use word in sentence
 - Synonyms



On Selection: Play





Software Specifications

- Kuix (Kalmeo User Interface eXtensions)
 - Framework interface for mobile applications in Java ME.
 - Flexibility
 - using **XML** and **CSS**.
- Mppowerplayer Toolkit



Financial Record

Raksik Kim

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Why a Financial Record?

- Effective approach for economic growth.
- **Goal:** To educate Senegalese people on the concept of saving and managing money.



Motivation

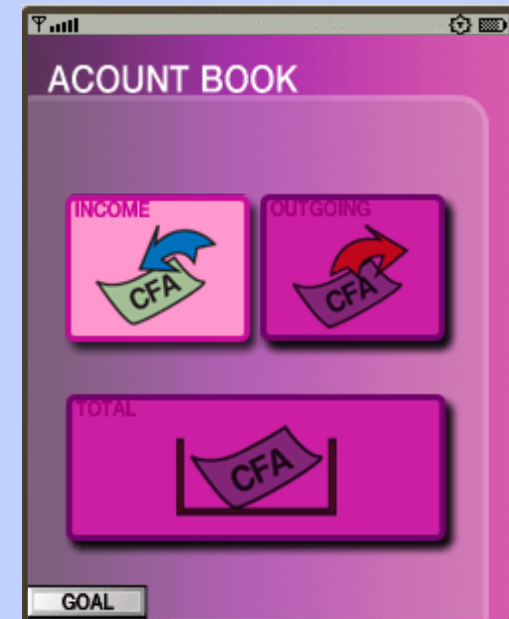


- She has a variety of products to sell
 - paintings, jewelry, small items, clothes, fabrics
- But, spends without saving money.
 - home rent, taxi, electricity, food, clothes, children



Financial Record

- Goal:
 - To provide the user with financial insight
 - Acknowledge where money goes
- Track the sales and purchases
- Record the savings





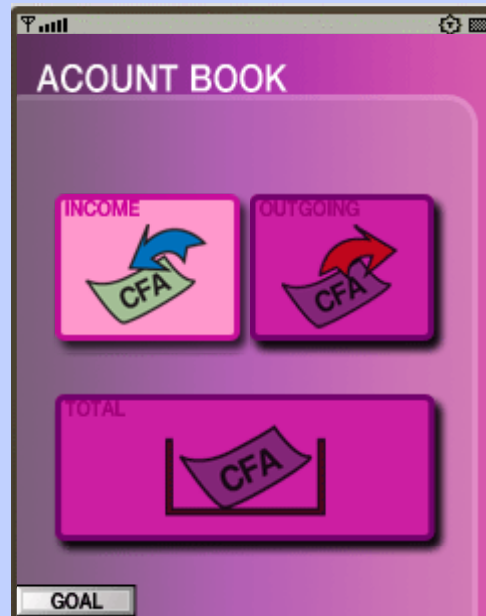
Motivational Tool: Goals

- Allow user to create purchasing goals





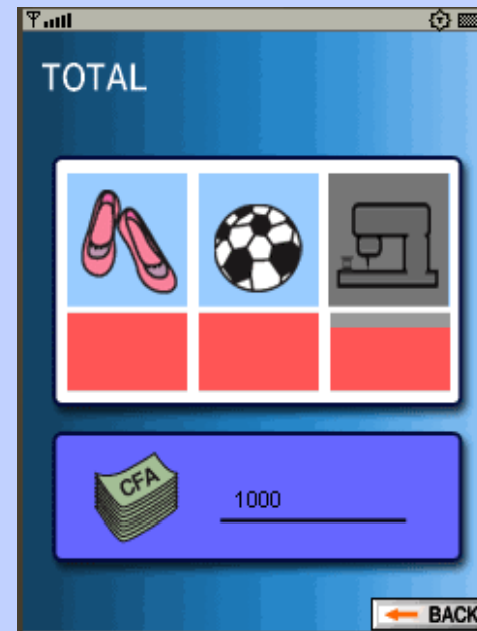
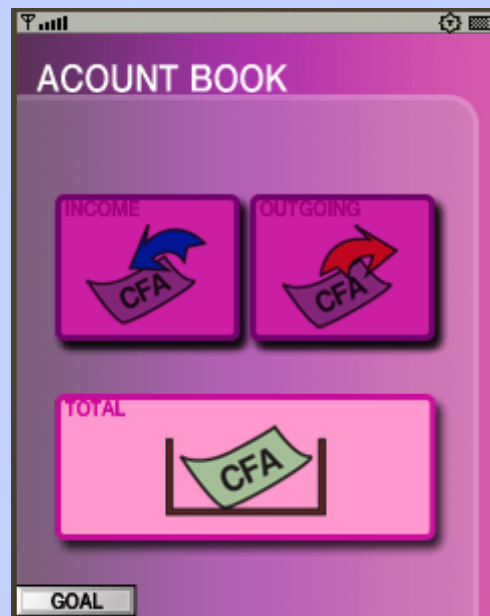
Income



- Store income from each type of product



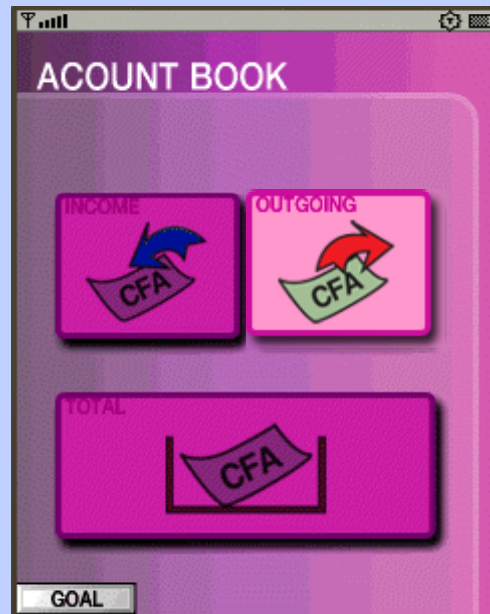
Simulation – Total Savings



- Record the total amount
- Illustrate progress to goal items



Spending



- Each major cost component
- Often do not realize where the spending is going



Development Environment

- Language:

[J2ME](#)



- IDE:

[Eclipse](#)



- Toolkit:

[WTK2.5.2](#)



Illiterate Fisherwomen



Fatima Zarinni



Motivation

- Women often sell the dry fish with losses
- What price to buy the fresh fish for?
- Goal:
 - To provide selling and purchasing price of fish to make profit



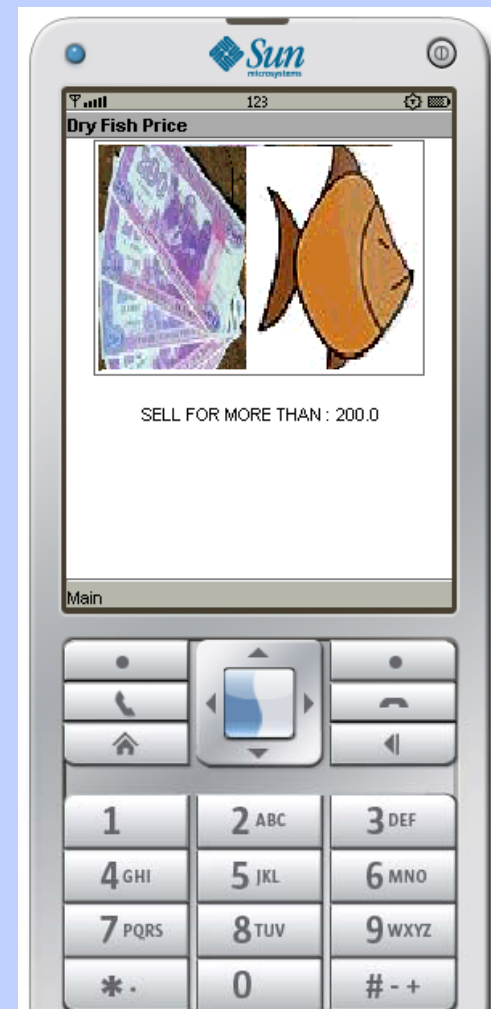
Functionality

- Update Fresh fish bought
- Sell for Profit
- Update dry fish sold
- Buy For Profit
- Reset





Key Images





Technical Information



- This application was made using J2ME.
- The Sun Wireless Toolkit was used.
- Eclipse IDE was used for running the Emulator.



What We Learned

- Each application targeted to user
- But
 - Interaction with user is **most important part**
 - Bootcamp students were able to improve on our templates because they spent time with each client
- Hence....
 - Developed applications geared to them specifically



Future Plans

- Work on templates
- Make templates widely available
- Create database of generic images for locally developed applications for particular clients
- Ease of customization to on-site programmers



THANK YOU!