

# PROCEEDINGS

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of the Union of Scientists - Ruse

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Book 5

## **Mathematics, Informatics and Physics**

Volume 11, 2014



RUSE

# **PROCEEDINGS**

## **OF THE UNION OF SCIENTISTS - RUSE**

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# **PROCEEDINGS**

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## BOOK 5

## "MATHEMATICS, INFORMATICS AND PHYSICS"

## VOLUME 11

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## SOFTWARE FOR ELECTRONIC TRADE FROM MOBILE TERMINAL

Georgi Krastev

*Angel Kanchev University of Ruse*

**Abstract:** *The developed system serves to firms and organizations which deal with trade activities without any restrictions about the type of the items for sale (medicines, electronic components, automobile parts, etc.). As a system for e-trade, it is designated to meet the needs even of the most demanding customers of the commercial firm and to give new dimensions of the trade business. What distinguishes it from the rest is that it has been developed for mobile terminals.*

**Keywords:** *Computer Systems and Technologies, Wireless Application Protocol, Wireless Markup Language, PDA.*

### INTRODUCTION

Wireless Application Protocol (WAP) is a global standard for Internet and other services supply to mobile phones and other wireless devices [1, 2, 3].

The client (the mobile device) contains the user mediator of WAE (if it's WAP, it is a micro-browser), which sends the order to the nearest cell from the mobile net via radio waves. Starting from the cell, the order is routed through the Internet, using WAP protocol. Since it is coded, it is set to the flash. This order is analogical to an HTTP order which sends the Web browser to a specific address (URL). The difference is that this order is directed to proxy (WAP flash) that translates it in a standard HTTP Post or Get message, directed to a certain address (URL). The server answers the order by providing static or dynamic created WML contents to the flash through HTTP (as standard Web order). The flash codes the contents as WML (Wireless Markup Language) platform (deck) in binary format (because of the restrictions in width of frequency tape) and sends it back to the cell from the mobile net through WAP protocol. The cell sends the data to the client via radio waves. The client (the mobile device) has the responsibility to decode and present the information on the display. Some WAP flashes support automatic translation from HTML to WML. As a result they allow Web servers to provide standard Web contents although in most cases these translations are useless because of differences of principle between HTML and WML (as well as the presence of many images and other elements, which cannot appear on the display of the mobile device).

### DEVELOPED PROGRAM MODULES DESCRIPTION

The management of firm, dealing with medication products, may be done from a distance via the developed system. Thus there is possibility for dynamic inspection of all information kept in the firm head office. The system also affords opportunities for giving orders from a mobile terminal. It contains a lot of information and reference notes for visitors of the site as well.

A software product of OpenWave Systems, OpenWave SDK 5.1 [4] is used as a platform for application development and testing. It contains text editor and emulator.

The block scheme of the developed WAP site is shown on Fig. 1. The development is based on WML (Wireless Markup Language), which on its turn is based on the markup language for pocket devices HDML (Handheld Device Markup Language) of Phone.com. It is a definition of data type (DTD - Data Type Definition) of XML.

The developed program modules have the following functional purposes: **Wapv.wml** – introduction, containing a graphic and automatic reference to **Index.wml**; **Index.wml** – contains links to all remaining files; **News.wml** – news from the firm – 4 cards with news and navigation menu; **About.wml** – text contents with information about the firm; **Links.wml** – links to other sites with similar information; **Prices.wml** – tabular presentation of price information; **Partners.wml** – text information; **Contacts.wml** – text information and address data of the firm and its phones and URL email; **Ebay.wml** – user entrance – it gives possibilities to users to make orders for various goods; **Help.wml** – it gives information how to operate the site; **Login.php** – access control to the prices information of the firm; **Buy.wml** – user entrance for making orders; **Welcome.png** – logo in Portable Network Graphic.

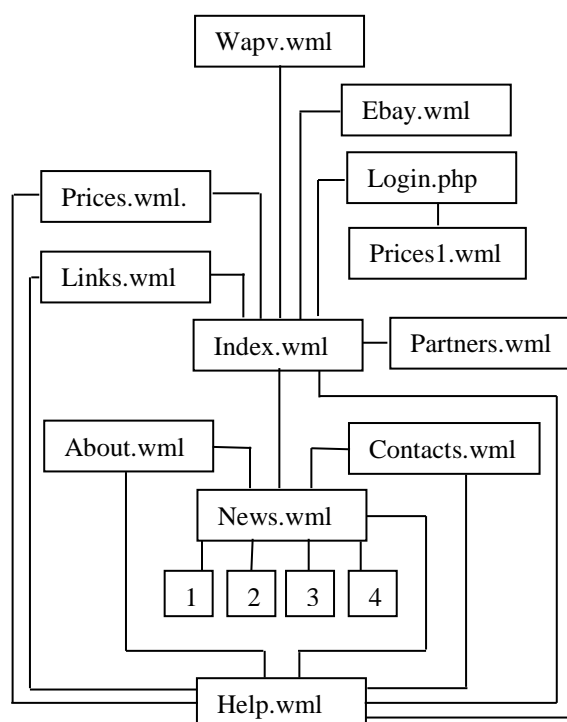


Fig.1. Block scheme of WAP site

The next few lines show as an example the contents of a program product Prices.wml.

```

<?xml version="1.0"?>
<!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML 1.1//EN"
"http://www.wapforum.org/DTD/wml_1.1.xml">
  <wml>
  <template>
    <do type="prev" label="back">
      <prev/>
    </do>
    <do type="help" label="Help">
      <go href="help.wml"></go>
    </do>
  </template>
  <card id="start" title="Prices Of Our Products" >

```



```

<p>
<table columns="3" align="LCR">
<tr>
<td>Product</td><td>Price</td><td>+ VAT</td>
</tr>
<tr>
<td>B cons</td><td>162 USD</td><td>194 USD</td>
</tr>
<tr>
<td>Nuricons</td><td>41 USD</td><td>46 USD</td>
</tr>
</table>
</p>
</card>
</wml>

```

### WORK WITH DEVELOPED PROGRAM SECURITY

A mobile terminal (GSM, PDA, Notebook+ GSM + Emulator) is necessary for dealing with the system. The user has to pass through the following steps:

- terminal setting-up by setting the IP of its Gateway so that it could work with the present mobile operator (it is applied to GSM, PDA);
- the field address of the WAP Browser is selected;
- the address, the program security is published at, is written down, for example: [www.gisbg.net/wap/index.wm](http://www.gisbg.net/wap/index.wm) or [wap.gisbg.net](http://wap.gisbg.net). A congratulation page appears on the display and after a certain period of time (set by the administrator) the initial page appears as well (Fig. 2).



*Fig. 2. Main Menu*

It affords a few opportunities: reading the hot news from the form; information about the address or the partners; prices of the offered products. The presented (displayed)

page serves as an entrance to all remaining pages. If the user selects, for example, NEWS, the page with the news loads on the display (Fig. 3):



Fig. 3. GIS Medical News

Information about news is presented in this part and there are three buttons for navigation. When users select **BACK**, they get back to the previous examined or scrutinized page. **HELP** - it is the link to the help page (Fig. 4) and **MAIN** - this is the link to the index page. This navigation is analogical throughout the whole site.



Fig. 4. GIS New Generation

The pages **ABOUT**, **LINKS**, **PARTNERS**, **CONTACTS**, contain text information about the firm, namely: **ABOUT** – a short announcement; **LINKS** – links to partner pages; **PARTNERS** – listed corporate clients (Fig. 5); **CONTACTS** – ways to contact with the firm (Fig. 6).



Fig. 5. Contacts

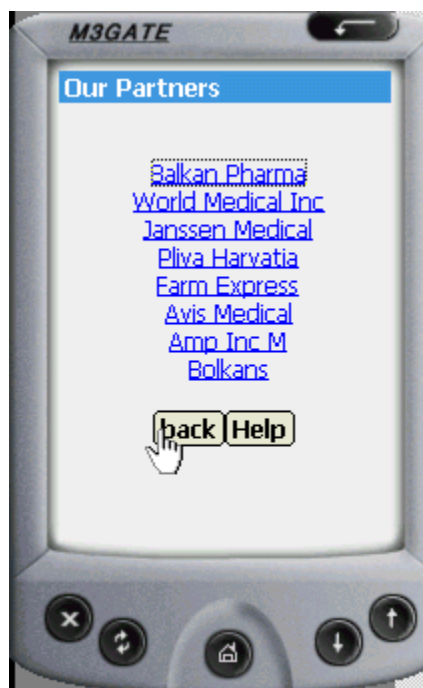


Fig. 6. Our Partners

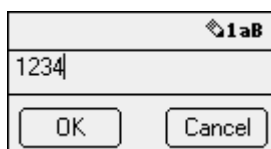
**Mobile SHOP** (mobile shop) – this page affords opportunities for users to make orders from their mobile terminal. Three fields have to be filled in this case.

First the product has to be chosen. In this particular case users may choose among three products (Fig. 7).



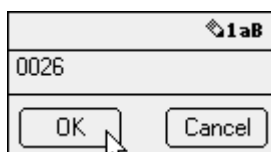
*Fig. 7. Choose Among Three Products*

The second very important step is the introduction of the client's code (Fig. 8). Every firm, willing to benefit the site's services, must register first.



*Fig. 8. The Client's Code*

The third step is the selection of the number of traded products.



*Fig. 9. The Number of Traded Products*

After finishing the filling-up on the user's entrance the button **SUBMIT** is necessary to be clicked on. This automatically sends the order.

As a confirmation of the sent order a message appears on the display: **Submit FORM OK.**

**Members AREA** – this page affords opportunities for control of the access to definite information. In this case it is information about the prices of the products that must be accessible only for the registered firms (Fig. 10, Fig. 11).



Fig. 10. Access Menu



Fig. 11. Prices of our Products

## CONCLUSION

The developed system serves to firms and organizations which deal with trade activities without any restrictions about the type of the items for sale (medicines, electronic components, automobile parts etc.) as a system for e-trade it is designated to meet the needs even of the most demanding customers of the commercial firm and to give new dimensions of the trade business. What distinguishes it from the rest is that it has been developed for mobile terminals, i.e. it allows shopping from every part of the world. Another advantage is that the service is price competitive with its analogues.

It is very convenient because it only requires an availability of GSM coverage and phone support through WAP. Thus the present condition of the firm may be examined from every part of the world.

#### REFERENCES

- [1] [www.wapbg.com](http://www.wapbg.com)
- [2] [www.wapforum.org](http://www.wapforum.org)
- [3] [www.nokia.com](http://www.nokia.com)
- [4] [www.openwave.com](http://www.openwave.com)

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## СОФТУЕР ЗА ЕЛЕКТРОННА ТЪРГОВИЯ, ПРЕДНАЗНАЧЕН ЗА МОБИЛЕН ТЕРМИНАЛ

Георги Кръстев

*Русенски университет "Ангел Кънчев"*

**Резюме:** Разработената система е насочена към фирми и организации, които се занимават с търговска дейност, без никакви ограничения за вида на обектите за продажба (лекарства, електронни компоненти, автомобилни части и др.) Системата за електронна търговия отговаря на нуждите дори и на най-взискателните клиенти на търговската фирма и дава нови измерения на търговския бизнес. Това, което отличава софтуера от другите е, че той е разработен за мобилни терминали.

**Ключови думи:** компютърни системи и технологии, Wireless Application Protocol, Wireless Markup Language, PDA.

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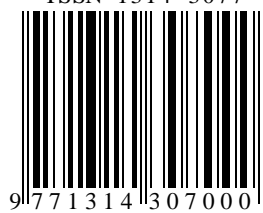
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