

Dhirubhai Ambani
Developer Programme



**Reliance
Infocomm**

A New Way Of Life

September 2004

R-EVOLUTION

Newsletter for the Developer Community

For Private Circulation only

Editorial

Dear Developers,

Thank you for your encouraging feedback on our inaugural issue of the DADP newsletter, R-evolution. Your feedback / suggestions on the newsletter will help us bring you relevant and useful information.

The lead story of the month is on messaging. Mobile messaging is practically the first data communication service in the wireless domain. It is a major advance on the conventional practice of providing 'only voice' communication service over the wireless interface. This article gives you a perspective on the existing and forthcoming messaging services and underlying technologies.

The product of the month section features 'Office Mail', which brings your corporate mails live on your mobile phone, for email platforms such as MS Exchange and Lotus Notes etc.

In continuation of our efforts to bring you value added tools, we have provided emulators for all Java-enabled Reliance handsets on the DADP website. In this issue, we give an introduction to emulators for Reliance handsets, advantages of using emulators during the development phase (as you may not have access to all the handsets), and also the limitations of emulators. In the 'technology tips' section, we have explained the importance of packaging .ear file for the server side component, as incorrect packaging is one of the reasons behind the failure of many server side applications during testing.

Looking forward to your comments on the format and content of R-evolution.

S P Narayanan



Tech Tip
Ear Packaging



Application of the Month
Office Mail



New Products & Processes



Interview of the Month
Net4Nuts



Quiz

Messaging - the new mantra on mobile

More and more people the world over confirm that a mobile telephone is an indispensable part of their daily life, a personal trusted device and a life management tool for business, work and leisure. Like no other medium, the mobile phone is enriching social interaction among people everywhere. And in this global communication scenario, the mobile industry is evolving from voice driven communication to messaging and personal multimedia communication via text and imaging techniques.

A very popular messaging service, especially among the young, is the Short Messaging Service or SMS that makes it possible to send a small message anywhere anytime, bringing people closer to distant friends or loved ones. SMS particularly enjoys mass appeal and acceptance across the world.

Now comes the sequel to the SMS success story. Multimedia Messaging Service or MMS is a mobile messaging standard defined by the Third Generation Partnership Program (3GPP). It comprises a complete end-to-end solution for person-to-person mobile messaging, from terminal to terminal, from terminal to email or email to terminal.

From an end user perspective, it enables the addition of multimedia features such as graphics, photos, sounds, rich text and interactive applications including images, audio, video, data and text in any combination to the popular SMS text messaging service, thereby achieving full content versatility. MMS delivers a location-independent and total communication experience.

Mobile communication and connectivity are essential elements of the Mobile Information Society (MIS), especially when

enhanced with visual content. At the same time, the focus of the mobile communications industry is shifting from technology-led applications to applications-led solutions where applications drive both infrastructure and terminal evolution. The first and second generation of mobile communications to a large extent comprised technology-led systems. The later development in second generation and more particularly third generation systems introduce the industry to a new standard where applications utilize infrastructure and terminals in different combinations. As an evolutionary step from SMS, MMS is also a shift from 2G to 3G, as well as a globally standardized service. For consumers, MMS is fun, easy to use and a utility service, while for network operators, it offers an evolutionary migration path.

MMS can be used in various situations whether in business or leisure and it meets the needs of many user segments. It promotes market development by introducing new user benefits in simple styles. The possibility of clicking a photograph and immediately sending it to someone close gives the user an opportunity to share an important moment with loved ones. This opportunity can be extended for business use as well and can include different types of content like video clips, maps, graphs, layouts, plans and animations.

The mobile phone is increasingly being used for data communication besides pure voice calls all over the world and it is a common sight to see people busy typing messages into their little mobile screens or getting the latest updates on information, entertainment and other relevant aspects in their lives.

“Peer to peer value-added information and media messaging are growing at a terrific speed, forming a significant portion of a mobile user’s monthly bill. Experience shows that in India too, our subscribers are no different from those in the rest of the world. Very interestingly, we are seeing rapid adaptation of new messaging services, like person to person SMS text messaging, pictures, ringtones, etc. MMS, Instant messaging, Chat and E-mail have caught the fancy of our youth and young office goers alike,” says Krishna Durbha, Head, Consumer



Krishna Durbha



Products, ASCG, Reliance Infocomm Ltd.

Today, for many of us, e-mail has virtually replaced traditional letters and even telephone calls as the first choice for correspondence.

E-mail has been the most rapidly adopted form of communication ever known. In less than two decades, it has grown from obscurity to mainstream dominance.

Following closely on the heels of e-mail messaging, came the concept of instant messaging and chatting since the quick response of e-mail did not seem fast enough. By sending an email, you had no way of knowing if the person you were sending an e-mail to, was online at that particular moment. Also, to send multiple e-mails back and forth to the same person, you have to click through a few steps to read, reply and send the e-mail. This is where instant messaging (IM) stepped in and has gained popularity.

Instant messaging allows you to maintain a list of people that you wish to interact with. It provides the user with the ability to talk in real time while they are online through the use of chat rooms and instant messages. You can send messages to any of the people in your list, often called a buddy list or contact list, if that person is online, when you are. Sending a message opens up a small window where you and your friend can type in messages that both of you can see. A chat room however is the software that allows a group of people to type in messages that are seen by everyone in that chat room.



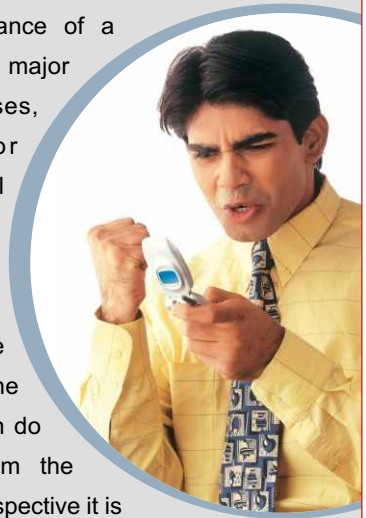
The popularity of SMS, instant messaging and email and other emerging trends suggest that there is a significant demand for messaging services enhanced by visual content. Success, however, in this new market is largely dependent on investing in the right technology and creating the right applications.

"Messaging has three major components. They are SMS, Mail and MMS. On the enterprise SMS domain we have Push SMS service for consumers and enterprises and develop applications for Enterprises. In the Mail domain, the users are broadly classified into two categories namely consumers and enterprises. For the consumer segment, we have an offering called web mail that enables customers to access mails from handsets. We are also working out different modules to make the 'Office mail' viable for the enterprise employee who wants to view his or her office mails on the handset. On an average, 30-40 percent of the employees in an enterprise require to see their mails while away from their workplace. We are planning to launch e-mail services to 50 enterprises by September and we are looking for DADP Partners who can assist in system integration of Office mail," shares Anil Pande, Head, Enterprise Solutions, ASCG, Reliance Infocomm Ltd.



Anil Pande

While 'Office Mail' is an instance of a horizontal application finding major acceptance among enterprises, there is much scope for development of vertical applications too. "Internet penetration is not very high in India. Through Reliance phones, we are enabling Internet-like customer-service portal on the mobile, where the customer can do all his or her operations from the handset. From the customer perspective it is very comfortable and from the enterprise perspective, it is cost effective. Today 50 percent of all call center services are available on the mobile like ICICI Bank, HDFC Bank services, etc. The opportunity for the DADP community is very good. It has great revenue potential. The applications on messaging not only benefit the Enterprises, but also the customers," adds Anil.



The future holds great promise in messaging applications as operators are pushed for better network and handset capabilities, which in its full form will become a very important form of communication. With the telecom technology growing by leaps and bounds, one can easily see that the sky is the limit.

Packaging .ear file using AAT Tool of IBM Web Sphere 4.0.4

EAR files are a way of creating a portable collection of logically related Java 2 Platform, Enterprise Edition components. Versioning, Configuration management and Deployment is easy and systematic using EAR files.

Packaging the application as a proper enterprise archive shelters many of the problems that arise due to the revision of your application server. New classes and new versions of classes can appear unexpectedly on the system classpath ahead of your application code. This allows you to take full advantage of a modern application server's ability to host dozens of different applications without conflict. Build-and-release management becomes less costly and more straightforward when each revision of an application is encapsulated by a single file. Rollbacks if necessary, can be done more quickly and easily, and with additional peace of mind that any tool that purports to support Java enterprise ought to read your application in this format. Furthermore, any future work on your application becomes easier as well.

Packaging the applications as part of an Enterprise application allows taking advantage of the split development directory structure, which provides a number of benefits over the traditional single directory structure. There are a number of other benefits for doing this, including synchronized security role-names, dependencies, versioning and web context configuration, as well as application-level configuration, including the use of alternate deployment descriptors.

Any DADP Developer, developing Server Side applications, should submit the Server Side or Admin Module component, packaged in .ear format to get it deployed on the Reliance platform. Various methods are available to make .ear file. IBM also provides the Application Assembly Tool (AAT) to make .ear files. Simply follow these few steps for packaging the .ear file.

1. Launch the Application Assembly Tool (AAT)
2. Select File->New->Application
3. Change the Display Name to Application Name and press the Apply Button. For example, go to Display name and type the Application name like 'AutoCabFareServer' or 'AutoCabFareAdmin' and then press the "Apply" button.
4. Select Web Modules, Right Click and Select "New"
 - o File name: applicationNameserver.war, for example, autoCabFareServer.war
 - o Context root: /applicationname, for example, /autocabfareserver
 - o Class Path: Uploaded path of .properties file
 - o Display name: Type the Application Name and then press OK Button
5. Select Web Modules->Application Name->Files->Jar Files, Right Click and Select "Add Files". Add all necessary class files. Check the Path pointing to WEB-INF/classes/com/reliance (or vendor name)/application name/
6. Select Web Modules->Application Name->Files->Class Files, Right Click and Select "Add Files". Add all necessary Jar Files, Check the Path pointing to WEB-INF/lib/
7. Select Web Modules->Application Name->Files->Resource Files. Right Click and Select "Add Files" Add all necessary .JSP, .HTML, and other resource files.
8. Select Web Modules->Application Name->Web Components, Right Click and select "New"
 - o Component Name: Servlet Name, for example, AutoCabFareServlet
 - o Component Type: Enter the Servlet Class and press OK Button
9. Select Web Modules->Application Name->Servlet Mapping, Right Click and select "New"
 - o URL Pattern: /ApplicationnameServlet, for example, /AutoCabFareServlet
 - o Servlet: Select the appropriate Servlet from the Combo box.

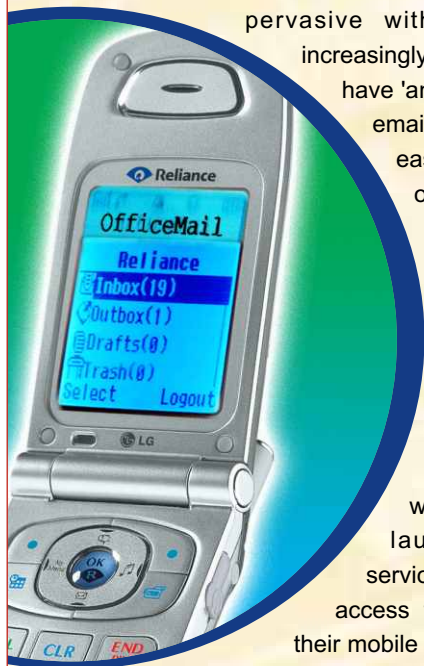
Now save the .ear file with the applicationname.ear, for example, autocabfareserver.ear and the packaging is complete.

The packaged files once ready should be checked for the proper packaging of all classes as per the application package format using tools like WinZip and WinRAR. These tools can be used to un-archive the EAR file. If the application is properly archived then the directory structure along with the package structure will be same as of the application. The ready EAR file can then be sent to the DADP Team for deployment on Reliance environment along with the necessary documents for installation through e-mail.

Office Mail on your Mobile

Over the years, computers at the work place have become the backbone of business, and emails have evolved to become the most important communication tool, as ubiquitous and mission-critical as voice mail. So whether you are in office or not, receiving and promptly responding to critical email messages has made a huge difference to any enterprise's productivity and profitability.

As businesses grow and expand, the corporate executive may not always be at his office desk. What happens then to critical, time-sensitive messages? Since email has become so pervasive within corporations, it is increasingly important for employees to have 'anytime anywhere' access to email when out of the office, as easily as when they are in the office.



Reliance IndiaMobile (RIM) now makes it possible to access office mail and even reply to important mails from your handset. Reliance Infocomm, India's largest wireless service provider, is launching 'OfficeMail', a service that allows RIM users to access their enterprise emails on their mobile phones. For this reason, a

growing number of companies are equipping their mobile workforce with wireless devices that are capable of fulfilling this need.

'Office Mail' enables secure access to corporate mail servers coupled with inherent wireless network security of CDMA networks. Press a few buttons on your mobile RIM and presto, you can turn your handset into your mobile office.

By having email access on your mobile handset, the user is empowered to use a single device for communication and to stay connected. Some of the key features that this application provides are:

- ▶ You can access your email messages on ANY Java-enabled Reliance IndiaMobile handset. There is no need for the user to purchase a high-end device.
- ▶ The user interface and navigation is similar to commonly used desktop clients such as Microsoft Outlook, Eudora, etc.

- ▶ Simplified user access allows the user needs to enter only the username, password, company code and his email address to access his email messages. The user can save most of the login information to avoid the inconvenience of typing on handsets, every time he logs in.
- ▶ Mail usage facilities include reading emails, composing emails, forwarding/replying to emails, deleting messages from inbox, searching emails, composing draft messages and deferred mail dispatch using synchronization features.
- ▶ Email messages can be composed up to 350 characters, against 160 for SMS messages. The user gets a notification when new messages arrive during his mail session.
- ▶ Frequently used email addresses can be saved from the 'inbox' messages for use while sending messages.
- ▶ Mail data can be secured by the use of POP3 Secure and IMAP4 Secure, through the use of SSL from the handset to the enterprise mail server. Mails sent from the handset can also be secured by the use of TLS/SSL and a Secure Password Authentication.
- ▶ Enterprise email through this application can be easily enabled within a matter of days. Enterprise customization includes display of corporate logo on the handset.
- ▶ Session-less mail experience. Connections are made when server interactions are required and once they are done, they are disconnected. This reduces the load on the mail servers and the middleware.

The 'Office Mail' application has not only changed the way the mobile device has been used, it has also enhanced the quality of work. "Some of the leading Enterprises already using this service on a trial basis are TechNova India Ltd., Asian Paints Ltd., Nicholas Piramal Ltd, Godrej Industries Ltd., Pidilite Industries etc., who find the service easy to operate and extremely useful. We will be extending this facility to a lot more enterprises in the coming months," says Rajnikant Dhorajia, Product Manager for the Office Mail Application.



**Rajnikant
Dhorajia**

Emulators for Application devices used by Reliance

With several million data enabled Reliance handsets in the hands of consumers, the mobile application industry has been busy as never before, trying to meet the growing expectations of the consumer.



Designing applications for mobile devices has always been a great challenge, perhaps even more challenging than designing an application for computers. In the case of designing applications for mobile devices, a device limitation comes into the picture where issues like memory, processing power, etc. are concerned. One of the important aspects from the user perspective is the appearance of the application on the actual device. Therefore, how an application will appear on a particular device is also a crucial factor and it is here that the device specification plays a major role.

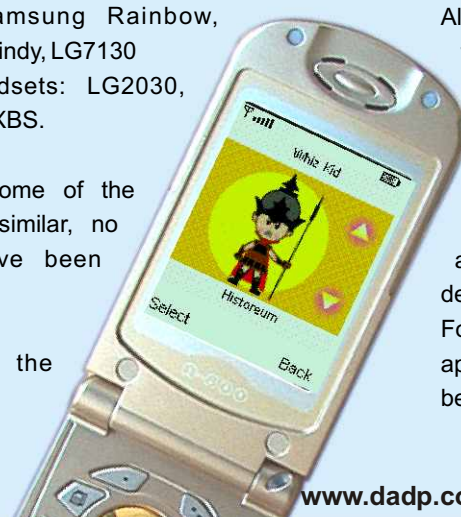
The real challenge for a Developer is to make applications that are robust enough to accommodate these ranges of specification. To assist Developers in testing the behavior of their applications on the actual device, Reliance has specifically designed Emulators for such devices. Emulators imitate the functionality of the mobile device on the computer system. The Developer can test-run his mobile application on the emulators. Reliance emulators are Java MIDP 1.0 emulators with Reliance skins added on top of them. Keys of Reliance handsets are mapped with that of Java emulators to emulate the behavior of Reliance handsets.

Reliance offers a wide range of handsets and also provides emulators for these handsets to provide a better testing environment for Developers. There are emulators for seven different handsets offered by Reliance. Emulators have been designed for the following handsets:

- Color handsets: Samsung Rainbow, Samsung RCP, Gtran Cindy, LG7130
- Black & White handsets: LG2030, Nokia2280, Samsung XBS.

Since the behavior of some of the devices listed below is similar, no separate emulators have been provided for them.

- LGRD7230 behaves the same as LGRD 7130.

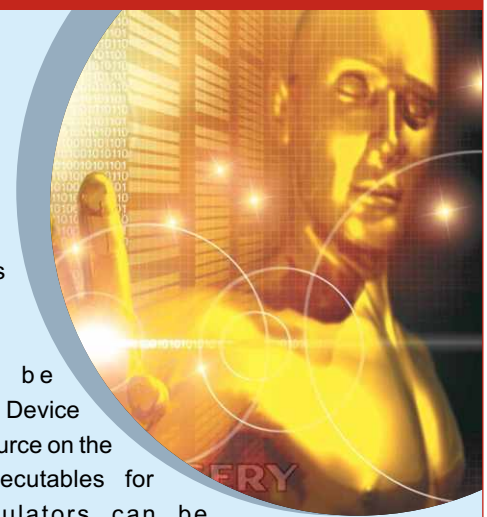


- LGRD 2130 behaves the same as LGRD 2030.

Emulators can be downloaded from the Device Toolkits section Resource on the DADP website. Executables for installing all emulators can be downloaded from this link. You can install all emulators or any specific emulator depending upon your requirement. Download the emulator from the DADP website. Unzip the file and double click on ALLEMULATORS.EXE. Select the language of installation and press "Yes". Choose the location of the Wireless toolkit device directory where the emulators need to be installed depending on the environment. To use the emulators in the Wireless Toolkit, install it in the directory \WTKroot\directory\wtllib\devices\. By default, the path is C:\WTK104\wtllib\devices\. The self-extractor will automatically install the emulators in WTKroot\wtllib\devices\. Reliance emulators will not be available in the list of emulators of WTK if installed in any other directory. To check the proper installation of emulators go to 'Start Programs.' There you will find 'Reliance Infocomm Emulators' and the creation of 7 new folders with the names GT4020, LGRD2030, LGRD 7130, NK2280, SSA563, SSA603 and SSN191. You will also find a link "Uninstall Reliance Emulators." Click this option to uninstall the emulators. Emulators can also be uninstalled from the Programs menu.

Along with this the Guide for the Black & White as well as Colored handsets can also be downloaded from the Resource section of DADP website. The list of exceptions in the functionality of some of these emulators is provided in the Guide.

Emulators can only emulate the logical and functional aspects of any application along with its UI behavior of the devices to a certain extent. But they do have their limitations. For the complete test it is always recommended to test the application on actual handset. Other enhanced emulators will be uploaded on the DADP website soon.



“Data penetration is on an upward curve and people are accessing vital information on mobile.”

Chirag Patel is the Founder and Managing Director of Net4Nuts. Initially calling himself, “The Chief Nut,” it was through Chirag’s passion for technology that Net4Nuts came into existence as a unique first-of-its-kind integration application solution. Chirag nurtures a special flair for technology and has been using the email from its basic rudimentary version in the early 90’s and has archived email messages since 1990.

An MBA in International Business & Finance from Loyola College in the US, Chirag graduated with full honors in 1992 at the age of 21 years. He spent two years in getting his feet wet, so to say, into the technology world in the United states, working as a project Manager with an IBM Lab after which he was ready to take on the world as an entrepreneur in his own right.

Please tell us about your experience as a Developer working for Reliance. What were your expectations? Was the technical support adequate?

I would not be honest if I said that I was not a bit apprehensive when we first started developing applications for Reliance. It was a new platform and a new environment. But, at the same time, since we had the experience of developing quite a few J2ME applications behind us, I was quietly confident. Whenever one starts developing for a specific deployment platform / environment, one would expect accurate documentation for the same as well as a bit of hand-holding in the initial phase something which Reliance definitely provided.

This eased us into the development process and we started getting acclimatized to the Reliance development environment. Reliance also sent us regular updates of the user-interface APIs that they were in the process of developing and was always at hand to help us out and put us in touch with the relevant technical resource that would respond within a minimal turnaround time.

What prompted you to develop the Teledirectory application?

A couple of years back I was in Bangalore for a conference and met someone from one of the leading IT companies. We got talking and this person felt that there was good synergy between what we were doing and a product one of the groups within their company was working on. He insisted that I should meet the business head of that group. This was when the idea of having a corporate telephone directory available on the mobile germinated. Subsequently, a similar scenario was repeated on a couple of occasions further reinforcing my belief in the necessity of such an application. So when Reliance suggested the Teledirectory application, I was really keen on doing it and immediately got our team on to the project.

How is your application different from the other similar applications? Unique features?

As the name suggests, Teledirectory is a mobile phone-based telephone and other contact details lookup-application. There are a lot of client-based (handset-resident) phone directories available. In fact, each phone or handheld device comes with one. However, what is unique about our application is that the data is server-resident. This means that without the user having to get involved in time-consuming data entry the complete corporate contact information is available at his/her fingertips.

A user can search for the details of a given contact, based on the first name, last name, department or division within the company or

even the location (if a company has multiple locations). This offers a lot of user-flexibility to get to the appropriate information with the minimum possible clicks. Another very interesting and unique feature is that once the user has located correct contact information, he or she can actually call, or send an SMS or email, right from within the application. This indeed is a handy feature as users have informed me. The server-side component of this application is hosted within Reliance’s secure infrastructure, which provides maximum security of the data being transacted.

What is the future scope of your Teledirectory?

One important aspect that we did not lose sight of right from the design phase of the Teledirectory application was multi-device, multi-channel portability of the application. So with a minimal additional development effort we can enable this application over SMS, WAP or any other delivery medium as also other handheld devices. This is an area we would like to explore further, should Reliance be willing.

Which other applications have you developed for Reliance?

We have also developed Stopwatch, EMI/ Annuity calculator, Financial Ratio calculator, Income Tax calculator and Tele Messaging applications.

Any interesting or memorable event that you would like to share about your application development relationship with DADP?

Reliance had arranged for a 2-day training on J2ME where they got trainers from Sun Microsystems. We sent a couple of our developers to attend the training, who came back a happy lot, not only for the valuable insights into application development on the J2ME platform, but also because they were initiated into the direction J2ME was headed.

What is future of such applications in India? How does the scenario look like today and in the days to come for mobile application developers in India?

Data revenue for mobile operators has been steadily rising, which means that data penetration is on an upward curve and people are accessing vital information on mobile. There is a huge scope for such applications in India. People want convenient and easy-to-use applications for instant access. The future for mobile application developers is bright, and at the same time challenging.



I am a DADP member and have recently received your newsletter R-evolution. I think it is a great value added service and is very helpful for developers. The OTA tool introduced is a much-awaited tool for developers wanting to test their applications on the handset. The quiz section was also very interesting. What are the prizes for all correct answers? I look forward to receiving the newsletter every month.

Rahul Singh, Mumbai

Why don't you send a link to the online version, send a printed version or just a simple text format of the newsletter? Sending 1MB file newsletter and that too in a zip format is definitely not a good idea.

Gopi Kumar Bulusu, Sankhya Technologies Pvt. Ltd., Visakhapatnam

Editor's note: Thank you for your letter. We will review your suggestion. However, we have also uploaded this newsletter on our website www.dadp.com as an alternate mechanism of accessing the same.

The inaugural issue of the DADP newsletter is very impressive. I loved the design, layout and most importantly, the content. I am a small time Developer and it's not easy to get hold of all the latest happenings, as I don't have access to big time reports. So, it was nice to have a newsletter, which is informative and easily accessible! Looking forward to receiving the next issue!

Ram Kumar, Mumbai

1. In which of the following can a method declared private be accessed?

- | | |
|---|---|
| a) Classes and subclasses of the same package | c) Cannot be accessed outside the class |
| b) Interface of the same package | d) Both a and b |

2. Which of the following is a keyword in Java?

- | | |
|-----------|------------------|
| a) Native | c) BOOLEAN |
| b) NULL | d) Both b and c. |

3. Which statement declares a variable, which is suitable for referring to an array of 50-String objects?

- | | |
|----------------|------------------|
| a) String a [] | c) Object a [50] |
| b) String [] a | d) Both a and b |

4. What was the original name of Java?

- | | |
|---------|-----------------------------|
| a) Kava | c) Hawai |
| b) Oak | d) It was always named Java |

5. Currently how many applications sourced from the DADP Community are successfully deployed on R World?

- | | |
|----------|-----------------|
| a) 1-10 | c) 21-30 |
| b) 11-20 | d) More than 30 |

Answers: 1.(d) Both a and b, 2.(a) Native, 3.(d) Both a and b, 4.(b) Oak, 5.(d) More than 30

Answer to last month's poser: MIDP 1.0

Last month's winner of the Monthly Poser through a Lucky Draw is: Dharmin Kansara, Mumbai.

Winner will receive his prize by courier.

Answers to the Monthly Poser should be sent to dadp.newsletter@relianceinfo.com mentioning Monthly Poser - September 2004 as the subject. The winner will be decided on the basis of a lucky draw and walk away with a prize from DADP.

You can contribute ideas and information to R-evolution at the following e-mail address: dadp.newsletter@relianceinfo.com.

Please note that contributions may be edited for clarity, style or length.

Editorial Team : S P Narayanan, Saurabh Chakrabarti, Amit Behl, Amit Chandra, Suresh Dabbara, Nitin Saxena, Vikram Vishwanath, Lakshman S Aiyar, Vijayam Raghunathan

Design Team: Makrand Pange, Jaydeep Gholap

Published by the DADP and Corporate Communications Teams, Reliance Infocomm, DAKC, Navi Mumbai

