

Design and Development of Android Application to Access Faster Results

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Abstract -Today Android and IOS apps have become an attraction all over the world. The reason for this attraction and growing market of these apps is all because of its vast functionality. They are fast and limitless. So why do we don't be fast in accessing our university results. The faster result application actually satisfies our interest. The android platform provides programmers a freedom to create an app of their imagination. This application holds well with non android platforms too. The current algorithm that exam result websites and apps follow is good but consumes a bit more time which can be saved. And this can be done by using faster result technique. In many result apps, they take the students ID number and then load the university website from where they generate the result. But in the case of faster result technique once the app is started, the university website would be loading in the background without coming in the interface of the user. Once the user end entering his ID number, the website would be loaded in background. Now the app copies the ID number to the loaded website and generates result in one single step and faster. This technique will be very useful when we talk with respect to time. This app is specially designed for the students. The same technique can be used for generating other type of results.

Key words: Result Application, Parallel Algorithm, Android Application, Faster Result Technique.

I. INTRODUCTION

There are many techniques to design an application which can show exam results. One method that I have found for this task came out with faster and stable execution. I call it faster result technique. We will discuss in deep about its algorithm and working. For the ease of understanding we will talk on the basis of android platform.

Now a user doesn't have to open an internet browser to check exam results. He can use faster result application which provide him the required result in just one single step. He just has to provide his ID number or the University seat Number and the result will be displayed on the screen. The procedure is simple and the main execution will not come in the notice of the user. The user even

though accesses the website but does not get to know about it. All this happens in the background. The technique is programmed so well that it gives a faster result display to the user and saves the time. Let us discuss the technique internally. We will consider the working of this application and then we would see the algorithm. Later we will compare this algorithm with another famous application which does the same task. The faster result technique is simple but yet powerful.

This technique is divided into two parts.

A. User Interface: this is the part of the application where the user actually interacts. Here user provides the information for the display of exam results. The user comes across two screens. In first he is asked to provide his university name and in next he is asked to provide his university seat number. The USN that the user provides here is copied and used as the input for the background operation section.

B. Background Operation: This is the part where the actual execution is taken place. The operation will not be visible to the user. That means user will not get to know how the result is provided on the screen. The background operation section does two jobs. First it loads the website and second it returns the required result to the user interface.

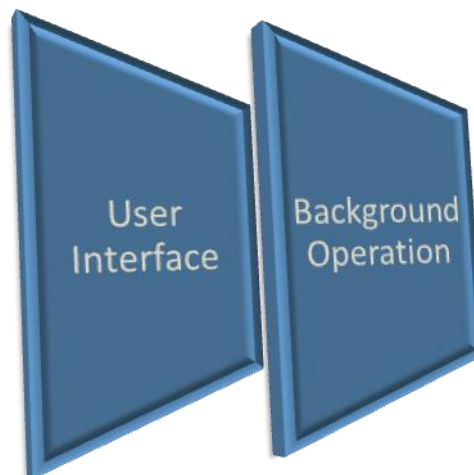


Figure 1: Structure of Faster Result Application

By using both these section the application executes faster and thus provides a stable result. Here we follow the concept of parallel programming. Here our program is divided into two parts, namely main program and parallel program. Both the programs execute simultaneously and provide the result faster.

II. APPROACHES

A. Working of Faster Result Technique

This technique as mentioned above is divided into two parts and thus we will discuss about its working part by part. When the user runs the application, the main screen comes in display. The application asks the user for the university name and his ID number or the university seat number. The user has just two works to do. First he has to choose his college or the university from the list. Second he has to give the required ID number or USN. Now when the user press the submit/OK button. Within seconds, the result will be displayed on the screen.

1) User Interface

Before proceeding further let us look at this screen shot of the application. The image below shows the home screen of the application where the user is asked to chose the university. Here user just needs to click on the university name and press OK button to proceed.

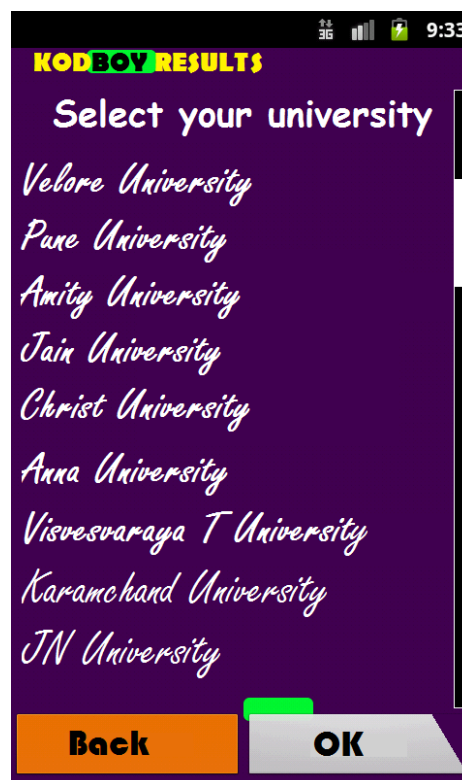


Figure 2: Front screen of the application

Figure 2 shows the home screen of the application where the user is asked to chose the university. Here user just needs to click on the university name and press OK button to proceed. Here when the user chooses the university name, the file which contains the link related to the respective university is loaded. The link of the web page is passed to the background operation section which is executed in parallel. This section loads the website and points to the block where the USN has to be entered. Now the application waits for the user to provide the university seat number to generate the result. After choosing the desired university, our next screen comes in the play. Here the user is asked to enter his university seat number. When the user enters the USN, the application copies the USN in the memory. The application later passes the USN to the background operation section. Once the user presses the OK button after entering USN, the complete control goes to the background section.

The interface is design such that the user will not get to know about how the result is provided on the screen and will feel like the result is generated by the app. If user have chosen wrong University then he can go back and correct it and he doesn't have to enter the USN again as it is already saved. But if the user wishes to change the USN, he can do it at any point of time to achieve the required result. We will understand its working more clearly when we discuss about its background operation section.

2) Background operation

Now let us discuss the actual execution which takes place in the background operation section. This university website will be accessed in the background without the user's notice. As soon as the user selects his university name and press OK, the application go to the web address linked to the respective university and the university result website will be active at the background operation section.



Figure 3: Second screen of the application

The USN which was copied by the application before will be handed over to the background section.

The application is so programmed that the application itself will put the university seat number of the user into the university website. Now here comes the question that, how the application will know where to add the USN in the website. The application will actually know the exact address of the block where the USN has to be pasted and this address of the block will be pre stored in the file which was earlier loaded. The application paste the USN as soon as the website is loaded. Now let us see how this part actually works. When the user enters his USN and press OK button, immediately the USN is copied and pasted to the university result website. And as user is already pressed the ok button and gave approval to the application, the OK button on the website will be pressed by the application.

This is done as the website has the address of the button on the website which needed to be pressed to access the result. Once this is done, the website generates the result for the user. Now when the result is generated in the background section, the application crops out the result website's unnecessary portion. And the required portion of the website where result is shown will be allowed to be visible on the application screen. That means the entire website cannot be seen but the area in the website where the result is shown will be displayed on the application screen or in the interface. Like this the user can access his result in a simple and faster way. User is also provided with one more option that is to save his result. The user is allowed to save his result in the phone memory as a text file and for this job he just need to press the save button on the application screen. The application reads only the texts and spaces from the result to save it as a text file.



Figure 4: Result screen of the application

The whole procedure can be shown with the help of a flow chart:

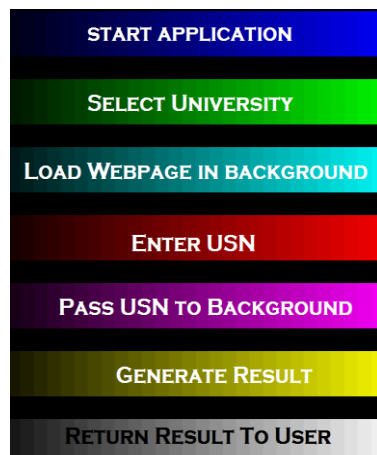


Figure 5: Flow chart of the application

B. FASTER RESULT ALGORITHM

The algorithm divides the program into two parts and follows a parallel programming structure and the algorithm is as follows:

```

Start application
Main execution
Print: Chose the university name
Load: file(x, y, z)
X=university name
Y=website link of university
Z= link to the block where USN will be
entered in the university website
Input: x
*p=y ->parallel
Print: Enter USN of student
Input: USN
U=USN
&U->parallel
Print: Generated result
End application

Parallel execution
Start parallel
Go to website link
Open (y)
Load z
Paste U in z
U->z
Generate result
Corp screen (a, b)
Return generated result
End parallel
  
```

III. BACKGROUND

One of the very famous app known as 'Exametc' gives the same output that this algorithm gives. Exametc is very popular for its multiple

result displays. This app follows an old method of displaying result which is fast but could be made faster. Exametc does the similar task when compared to faster result app. Exametc was launched in 2011 and today it's a very sort after app in the market. Exametc similar to my algorithm, first ask the user to select the university and then it will ask for the USN. The major difference between faster result and exametc app is the time required for the display of the result. Let us see how Exametc works.

First it asks the user to select the university from the list and then user will be asked to provide the user name. Then the app will load the website which will generate the required result. The algorithm for the Exametc app is as follows:

Algorithm for Exametc app:

```

Start application
Print: Chose the university name
Load: file(x, y, z)
X=university name
Y=website link of university
Z= link to the block where USN will be
entered in the university website
Input: x
Print: Enter USN of student
Input: USN
Visit link = y
Pass USN to website
Generate result
Print: generated result
End application
  
```

IV. COMPARISON

For the comparison we will assume that we have a fair internet service and a fair university server. When we compare Exametc app and faster result app together, we discover that the faster result app works faster. The reason for this is the parallel programming structure. We can understand it clearly by following points:

1. Exametc loads the website when the user finish entering the USN whereas the faster result technique loads the website in the background once the user chooses the university. And once the user finish entering the USN, the required website will be already loaded in the background. Thus the application works faster.
2. The main difference between both the algorithms is the method of loading the university website. The exametc loads the website once the user finish entering details while faster result app does it parallel and before user finish entering the USN, the website is already loaded.

3. Even though the faster result app consumes slightly more memory, it does work faster than exametc due to parallel execution.

4. From the algorithms we can see that in the main execution of both the app, the faster result app complete the task in one step less than the exametc app.

That one step is loading the website. Which faster result app doesn't do in the main execution. Thus if 'n' is the time complexity of the faster result algorithm then 'n+1' will be the time complexity of the exametc app.

5. That is $n < n+1$, hence faster result application works faster than the exametc application.

V. DISCUSSION

The output of the faster result technique will be relatively faster as it saves the time by processing the tasks in parallel. Here two major factors come, which affects the speed of the application. First one is the internet service speed and second one is the server of the result website. If these two factors are satisfying then the application will undoubtedly provides a faster result.

Here one major challenge is to prepare the file of all the required result websites with their block address where the USN has to be entered. But if the file is proper then the background section will play its role faster.

From the comparison above with exametc app, it is very clear that faster result app is faster and stable. It saves the time which need not to be wasted, by executing same problem in parallel. Even though it uses a slightly more memory, it provides a faster result.

VI. CONCLUSION

The faster result technique provides faster results. The algorithm and the technique of faster result application can also be used for generating other type of results. It can also be used for accessing any account with one or more input fields. The algorithm is stable and parallel programming enhances its speed.

VII. FUTURE ENHANCEMENT

One major enhancement that can be done is providing an option for generating multiple results. If the user wants to see results of three students then by this enhancement, the user should be able to retrieve three results at the same time. One more enhancement that is possible is an option on the screen which allows the user to choose multiple semester results. In this way the user can view his previous and present semester results simultaneously.

REFERENCE

- [1] Yong-Hua Cheng ; Wen-Kuang Kuo ; Szu-Lin Su, "An Android System Design and Implementation for Telematics Services" (ICIS), 2010 IEEE International Conference, Digital Object Identifier: 10.1109/ICICISYS.2010.5658766
- [2] Bin Peng, "The Android Application Development College Challenge" 2012 IEEE 14th International Conference, Print ISBN: 978-1-4673-2164-8.
- [3] Google Inc.: Android Software Development Kit (SDK).
- [4] Linya Huang, Qiaoyan Wen, "The Design and Implementation of Android File Access Control System", (BCGIN), 2012 IEEE Second International Conference, 10.1109/BCGIN.2012.205
- [5] Google Inc.: Android Open Source Project. <http://source.android.com>
- [6] Google Inc.: App inventor for Android <http://appinventor.googlelabs.com/about/>
- [7] Datta, S.K., Bonnet, C., Nikaein, N. "Android Power Management: Current and Future Trends, 2012 First IEEE Workshop, Enabling Technologies for Smartphone and Internet of Things (ETSIoT), 10.1109/ETSIoT.2012.6311253
- [8] Hyeon-Ju Yoon, "A Study on the Performance of Android Platform", (IJCSE), Vol. 4 No. 04 April 2012.
- [9] Jianye Liu and Jiankum Yu, "Research on Development of Android Applications", Fourth International conference on Intelligent Networks and Intelligent Systems, 2011