# Building Office Tools for Firefox OS

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*Abstract*— This paper proposes a Firefox OS application that can be used to access the various documents in Firefox OS. The users using smartphones have to refer to various documents every day. These documents are interactive and are available in various formats. Office Tools are nothing but the tools that provide creation, edition and conversion of various documents. The proposed application is small in size and focuses more on the user experience and accuracy.

*Key words:* Firefox OS, Building Office Tools

## I. INTRODUCTION

Documents play an important role in everyday life. It is one of the most ancient ways of storing information. The methods of gathering information have changed, and a large data can be stored in a smart way by making use of various documentation formats.

Documents these days are processed using software programs which avail multiple functions and tools. Such applications can be accessed by using Desktop computers, Smartphones, Tablet PCs and other such mediums. These applications, however, require a large memory storage which becomes a problem on some platforms.

This paper focuses on building an application which will require less memory space and can be used on a smartphone by the users. This application would be built by using web technologies and will follow an optimized approach. Thus, this application is based on the Green IT principles.

## II. EXISTING SOFTWARE

The popular Office Tools which are currently available on various operating systems for general users are Microsoft Office and LibreOffice.

Microsoft has developed the Office Suite[2] which is available on Windows operating system. The initial Office Suite comprised of Microsoft Word, Microsoft Excel and Microsoft PowerPoint. Microsoft Office is developed using C++. It is available in 40 different languages for the users.

LibreOffice[3] is developed by The Document Foundation. The prominent tools which are being made available under LibreOffice are LibreWriter, LibreCalc and LibreImpress. LibreOffice uses the international ISO/IEC standard OpenDocument file format as its native format. The LibreOffice is developed using C++, Java and Python. It is available in 110 languages for the end users.

LibreOffice is compatible with major office suits which include Microsoft Office.

## III. PROPOSED APPLICATION

The proposed Office Tools application would be developed in Firefox OS.

Firefox OS[1] is a mobile operating system developed by Mozilla. It is a web-based operating system

and is used to develop web apps by using HTML5, CSS and JavaScript. The meaning of the term 'web based operating system' is that each frame which could be seen on the user interface is nothing but a web page. Eventually, the size of each page is very small and the applications which could be executed on such an operating system would require less memory usage. Firefox OS is based on Linux kernel with most of the UNIX utilities been written in C language. The Firefox browser comes up with a simulator which creates a Firefox OS environment suitable for running and testing applications. Firefox OS has been built by engineers and volunteers of Mozilla.

The Office Tools which would be developed could be used in an offline mode which will make it quick, simple and easy to access and use. The file format which would be used will be the international ISO/IEC standard OpenDocument[4] file format. The proposed application would be developed using web technologies[5] like HTML, CSS and JavaScript. There are several JavaScript APIs[6] which could be used in the development.

The Office Tools which would be developed are:

### A. *Word Text:*

The Word Text will allow the users to represent a data on a blank page and can also represent a simple text editor. It would be similar to Libre Writer.

### B. *Spreadsheet:*

The Spreadsheet will allow the users to represent the data in the format of rows and columns. Thus, a single cell will be the fundamental data representation unit. The additional features which would be available will include formulae of various mathematical expressions and cell formatting. It would be similar to Libre Calc.

### C. *PDF Viewer:*

The PDF Viewer will allow the user to read and view the files in the PDF format. The PDF viewer would be supporting all the PDF versions which have been classified under the Open Standard. It would be similar to Adobe Reader.

## IV. PROJECT REQUIREMENTS

This application requires access to various documents which could be stored inside the phone memory or on an external memory card. A smartphone with its operating system as Firefox OS, a Web IDE[7] in the Firefox browser with simulation environment of 2.0 or above is required for running and testing the application.

## V. DESIGN DESCRIPTION

The application as shown in Figure 1 keeps the user in the first place and the user experience and simplicity are the factors which drive the overall design development. The user

interacts with the application and this application interacts with the various APIs to give an accurate and expected output back to the user. The Firefox OS architecture drives the entire process in a systematic layer-to-layer transmission channel which helps to understand the complexity of each and every module.
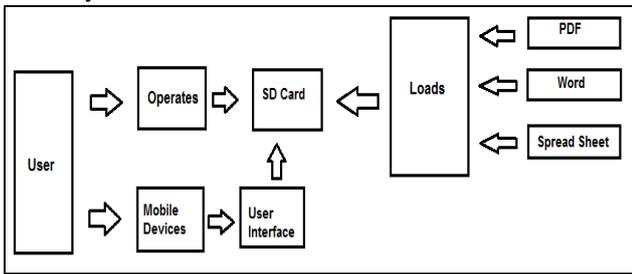


Fig. 1: Control Flow Diagram

## VI. USER INTERFACE

When the user opens the application, it shows a screen to select the type of document the user wants to view and edit as shown in Figure 2. Further, after selecting the document format, the application then guides the user to the screen which contains various tools for formatting the document as shown in Figure 3.
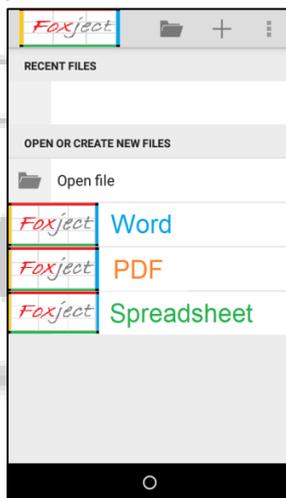


Fig. 2: Sample prototype of the application

There are some basic formatting options in this application like Font, Paragraph, Insert, Design and Styles. Other features also include editing features like Search, Replace and Calculator.
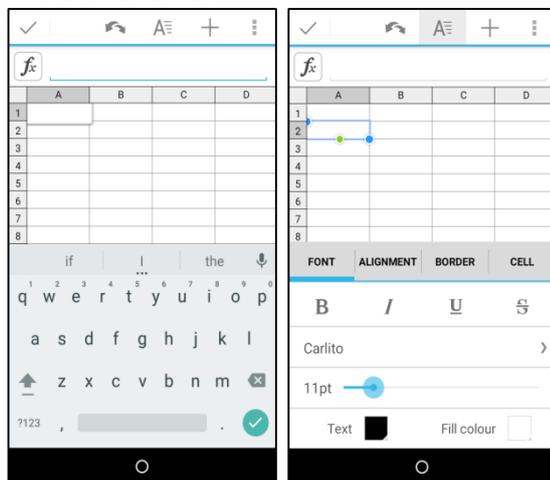


Fig. 3: Sample prototype of the application

## VII. CONCLUSION

This paper proposes a Firefox OS mobile application that enables the users to use the Office Tools which requires less memory space. The web technologies can be used to achieve an optimized approach thus contributing towards Green IT.

## ACKNOWLEDGMENT

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