



## Myteam, an Android Application for Team Management

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### ABSTRACT

*This paper attempts to produce a core foundation for the idea of bringing a small part of the corporate environment on the mobile devices and provides a helping hand to this competing world. As Smartphone is being used for various activities in our day to day life it will be the best option for integrating one's work management on the same. There is always a need of proper management of all the activities going within the team, as every individual plays its role in a parallel manner to achieve its goal. MyTeam is one such application which acts as a platform that purveys a synchronized management of the team.*

*MyTeam covers all the basic functionality like task management, performance and report generation along with many utilities for smoother working. These features are incorporated with a high level of reliability, easy administration and enhanced security.*

**Keywords: Android Development, XMPP, AES, Broadcaster**

### INTRODUCTION

Traditional ways of managing the team emerged from ancient history and has developed along with the need of the developing functionalities, in the present digital world all the work is been recorded digitally and hence easily processed and analyzed. Each individual performs his part of work and reports to the responsible authority periodically and his working outputs. This reporting work is done on a centralized location in digital or hard data. Mostly Data Servers centrally located do the job of storage of this periodic reporting. Using this application the allocation of any work, reporting or processing can be done on a click from anywhere with high level of flexibility, efficiency and accuracy as present in the earlier scenarios. The dependency of complex system and their availability has been overcome with this application.

### MyTeam IN REAL WORLD

Presently organizations have built their own huge application for managing all the work within their organization. These applications cover all the points such as employee details, task history, employee performance, report generation etc. Previously these details were manually handled by the responsible officials and clerk. But it demanded a new methodology to avoid its drawback of human errors, slower processing, high resource etc. As per the present application, we can add some new attributes like mobility with compact system like Smartphone and Tablets. Presently assumption can be done of these organizations approaching to build a similar or more efficient application for mobile or Tablet devices. MyTeam focuses to facilitate a generalized platform so that these organizations will migrate small part of their working on the presently emerging era of mobile application.

MyTeam support this migration with less dependency, high mobility, enhanced efficiency and security. This application have UIs that lets the manager to add and allocate task to its

members, on the other side every member has the authority to update the status of those tasks whenever any progress is done. This application generates report using the history of an individual or whole team. This history data is also used for performance generation of any individual team member. Apart with all these utilities MyTeam provides a light weight chatting functionality which helps in direct communication with other team members. Easy mailing interfaces along with reminders and notes are also added in the list of utility functions.

### PLATFORM SELECTION

With the above idea in mind the available platform were analyzed for MyTeam. The regular features of phone will not allow or support third party application hence making any kind of experiments on them is a tough task. The goal of providing an open source application points Android as the most suitable platform for this application. Along with strong embedded java coding, increasing sophistication, enhanced features and simplified user interface, Android is ranked high by the programmers as well as user. Platforms like iPhone would not allow for open source application development, hence selection of such platform will create bottleneck as it raise proprietary issues. Hence Android was chosen as a platform for MyTeam.

Take-up of Google's Android smartphone operating system is growing tremendously worldwide. Android powers hundreds of millions of mobile devices in more than 190 countries around the world. Google mobile chief Andy Rubin commented that there have been half a billion android activations till September 2012, with over 1.3m added every day. Android had a worldwide smartphone market share of 75% during the third quarter of 2012.

### MODULE DETAILS

MyTeam is build with the aim of covering all basic functionality of the team management, it comprises of seven main modules:

**A. TASK ALLOCATION**

In a scenario, where a team leader needs to allocate some work to his members, MyTeam provides an easy interface for this. It stores this allocated task on the central data server from where all others members get the knowledge of the work to be performed. A task can be a group task or a single task, which is allocated to multiple users individually. Basic attributes focused are the brief description, deadlines and task type.

**A. TASK LIFE CYCLE**

This module consists of all the functional processing over the task allocated by the team leader. After the task is been allocated it should be updated with its progress report in a timely manner. In task life cycle interfaces are provided for commenting and status updating.

Every member has the authority to comment on the task which is allocated to him by the leader. This helps in easy communication and a record maintenance of the communication done on the given subject. These comments can be retrieved and response can be given by the team leader and the other members allocated to that task.

Status of the task has to be updated by the team member whenever any work has a progress. Each member will be representing the real time status of the given task; this status can be accessed by the leader from the central server. The leader can demand for a status update through the application which the member needs to respond.

**A. PERFORMANCE GENERATION**

In the corporate world every decisions made by the official is done by considering the previous record and performance of that subject. Similarly a member can be analyzed using his past records and his performance can be generated. This performance is calculated on the count of his completed task within deadlines, scale of satisfactory performance in every individual task. This generated performance can then be used for making decision for that member. Decisions such as appraisals, promotions and even training allocations for members who are weak in specific fields.

**A. REPORT GENERATION**

A report generation mechanism is provided by MyTeam. In this part, a report of the selected or all the activities of the team is generated. The selection can have any sorted data of the individual or a whole group, a pre defined format of the report is used and an output file is been generated for the same.

**A. CHAT**

To keep easy communication between all the team members a chatting module is included, with this we can chat with the team members. A simplified protocol is used for the chatting purpose for better utilization of the hardware and network factors. In addition to this, easy calling and mailing to the team members is also provided on the fly. An attempt is made to keep this communication module very secure and fast, with minimum amount of resource usage.

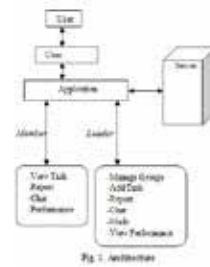
**A. CTIVITY MONITORING**

This is a miscellaneous enhancement provided for team's which allow their private activities to be known by their higher officials. MyTeam can help knowing the present location of the members to the team leader. A preformatted message is sent to the member who in turn sends the location co-ordinates to the sender. This functionality can be easily activated or deactivated.

**A. ENCRYPTION**

An internal encryption mechanism is embedded for secure data transfer over the network. TCP provides the required reliability and additional encryption and decryption on both the ends provide the necessary security to maintain the confidentiality of the data. Encryption and decryption techniques are based on AES algorithm.

**VI. IMPLEMENTATION**



**Fig. 1. Architecture**

MyTeam application is been successfully implemented in a team working scenario. This application acts as reliable and error free medium for the smooth working of the team management. Following we have explained in more details about the implementation of the modules.



**Fig. 2. GUI for Comment and Status Update**

- A. Task Allocation- An activity is designed to accept the task to be allocated. Attributes like subject, start date, end date, description, and allocated members are inserted. Whenever a task is allocated to any member, a notification is sent to the member which is viewed in the member's notification window. The task allocation table holds the primary keys of the task ID and the member ID of the allocated members. The other values inserted in the table are the progress status and the individual performance of the member (given by the leader).
- B. Task Life Cycle- In this module we have embedded the activities which helps for a proper follow up procedure of the allocated task.
  - The progress of the given work can be informed by the members to the leader by updating the status of that task to which they have been allocated. All the changes made in the task status is notified to leader in his notification window.
  - All the members have the authority to comment on the task to which they are allocated, this helps in sharing of doubts and solutions. These comments are stored on the server and are added sequentially while generating the report of the corresponding task.

Only the leader and the allocated members have the authority to use these functions.



**Fig. 3. GUI of Rating**



Fig. 4. GUI of Performance

- C. Performance Generation- Every time when a task is completed by the member, a pop-up is viewed on the leaders screen to judge his performance in the corresponding task, leader has to mark him at the scale of 0 to 5 stars. This helps in immediate analysis of the performance. While generating the performance report we consider all these score's and generate a pie graph of the same. Completion of the task within the deadline provides additional scores.
- D. Report Generation- Generating report of any member, task, or a periodic report is done using all the available data of the corresponding subject. This data is added to a file in a predefined structure and an output report file is generated.
- E. Chat- Using XMPP protocol we have provided a very efficient chatting functionality. We have used two universal email ids for this purpose. Every member uses the member side email address and the leaders use the other email id. A complex message binding and parsing helps us to manage complete chatting module on just two email address. All the notifications are sent to the team using these emails ID. Easy interface for calling and mailing is provided, and for this we use the contact numbers and email address provided at the time of registration.



Fig. 5. CHAT window

Activity Monitoring- This provides the current location coordinates of the member on the leaders screen. GPS support is a dependency in this module. Both the members and the leader have to accept their privacy setting prior using this functionality.



Fig. 6. All Task List GUI

**FUTURE ENHANCEMENT**

The increasing feature of Android platform will help in providing more sophisticated functionality at ease. The aim to integrate high level features into the application so that MyTeam is readily acceptable in the corporate world. In the next updated version we wish to add provision for managing a complete departmental work easily.

- Intelligent allocation: Use of the artificial intelligence in allocation of task to the strong members, and allocating trainings to the weak members.
- Enhanced Performance Generation: It is possible to generate performance using higher methodology and with corporate standard.
- Custom Task Allocation: Allocation of custom task as per the organization requirement is the next milestone for the further version.
- Providing these enhancements to the present application, the acceptance on MyTeam by the huge organization will surely increase.

**CONCLUSION**

Android is integrated with huge functional facilities. Android provide every programmer and user to have his own custom world in his devices. Android powers hundreds of millions of mobile devices around the world. It's the largest mobile platform and growing fast, every day another million users power up their Android devices for the first use.

Utilizing this features we have built our application MyTeam to provide a foundation for the upcoming era of mobile and tablet computing in the corporate working. MyTeam comprises of the entire basic module used for smooth functioning of any type of team. These features are available with high reliability, mobility and security.

**REFERENCES**

[1] MarkL.Murphy . "Beginning Android2", 2010. [2] Nicolas Gramlich, "Android Programming with Tutorials", from the anddev.org-Community, 2011 [3] Reto Meier , "Professional Android application development" ,2010 [4] Nisarg Gandhewar, Rahila Sheikh, "Google Android: An emerging software platform for Mobile devices" , 2010 [5] Norman H. Cohen, "A Java Framework for Mobile Data Synchronization" [6] GoogleGroups.Android Discussion Groups. [7] Nguyen, Vincent. Android Community , <http://android.comunity.com>. [8] <http://www.developer.android.com> for ideas [9] <http://www.developer.android.com> for downloading android-sdk and Google APIs. [10] <http://www.market.android.com> for getting the ideas of existing android application.