Shahjalal University of Science and Technology

Department of Computer Science and Engineering



Title of the Project

Package and FnF Suggestion Generator

**Student:** *(Md Shah Ali, 2013337023, 4/2, Dept. of FET)*

**Supervisor:** *(Professor Dr. Mohammad Reza Selim, Professor, Dept. of CSE)*

3rd September 2018

Shahjalal University of Science and Technology

Department of Computer Science and Engineering



Title of the Project

Package and FnF Suggestion Generator

A Project submitted to the Department of Computer Science and Engineering,  
Shahjalal University of Science and Technology, in partial fulfillment of the requirements  
for the degree of B.Sc (2nd Major) in Computer Science and Engineering.

**Student:** *(Md Shah Ali, 2013337023, 4/2, Dept. of FET)*

**Supervisor:** *(Professor Dr. Mohammad Reza Selim, Professor, Dept. of CSE*

3rd September 2018

Recommendation Letter from Supervisor

This student, Md Shah Ali, whose project entitled “Package and FnF Suggestion Generator”, is under my supervision and agree to submit for examination.

Professor Dr. Reza Selim

Professor  
Dept. of CSE

# Qualification Form of B.Sc. (2nd Major) Degree

We hereby certify that this project titled “Package and FnF Suggestion Generator”, submitted by Md Shah Ali, conforms to acceptable standards and is fully adequate in scope and quality to fulfill the requirements for the degree of B.Sc. (2nd Major) in Computer Science and Engineering.

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| --- | --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Head of the Dept.  Professor Dr. Reza Selim  Professor | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Chairman, Exam. Committee  Professor Dr. Reza Selim  Professor | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Supervisor  Professor Dr. Reza Selim  Professor |

# Acknowledgement

Gratitude to the almighty for blessing me with the chance to take CSE 2nd Major Degree and complete it without any trouble.

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Finally, I would like to thank the authority and the teachers who have been working hard for creating such a chance to take CSE as 2nd Major for the students like us who have passion and love for CSE and dream for learning something beyond their respective subject.

# Abstract

The application “Package and FnF Suggestion Generator” was developed with an intention to help the people of Bangladesh choosing best package, corresponding FnF and Super FnF and best operator for them based on their call log. One can easily activate his/her suggested best package and add suggested FnF and Super FnF with this app.

The application will detect the current package automatically by sending SMS or through USSD call, insert outgoing call log into database, read outgoing call log and compare current package cost with the other package cost for current call log and give you suggestion. For new outgoing call after installation, it will automatically insert this call details into database.

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Introduction

This application was developed only for the people of Bangladesh to help them choosing best package, fnf numbers, operator. Different operators have different packages which have different advantages. Choosing the operator, package or fnf numbers that would be economical for them, may be a hard to find and sometimes may go wrong. Besides, adding fnf is painful for most people as they don’t know the procedure of adding fnf. This app will help people in these aspects. It will automatically detect user’s current operator. By reading the users call log, it will calculate the probable cost for each of packages of their current operator and suggest the package with least cost as well as the corresponding fnf numbers. Users will be able to activate suggested package and add fnf by clicking on the corresponding button. The app will automatically send sms for activating suggested package or adding fnf.

* + 1. Problem Definition

Generate suggestion for package, corresponding fnf and super fnf and best operator for a user that will help to reduce user’s calling expense.

* + 1. Purpose

This document aims to give a brief description about the project Package and FnF Suggestion Generator. With the help of this document the needs of the users (people of Bangladesh) and the solution of their needs will be clearly depicted. In other words, this document will provide a basis for validation and verification.

* + 1. Scope

1. Provide suggestion for best package, corresponding fnf and super fnf, best operator
2. Provide facility to activate package with a single button click
3. Provide facility to add fnf or super fnf with button click

Background

* + 1. Background History

There are four operators in Bangladesh (Robi, Grameenphone, Banglalink, Teletalk) where each of them have several packages. Different packages has different advantages. For example, operators have different call rates for peak hour (12:00 am – 8:00 am), non-peak hour, same operator, different operator. People may be confused or wrong in the selection of their proper operator or package. Hence, their day to day calling expense may rise. Here the app will help people to select best operator, package, fnf for them by analyzing his/her call log and thus decrease the calling expense.

* + 1. Existing Works

An operator Robi has a web service that provides suggestion for best package based on questioning. As it is a web service it can’t read call log and the user has to answer questions which may go wrong. There doesn’t exist any other app like this app.

* + 1. Probabilities

Researching further, one can modify the app which will crawl data (call rate) from different operator’s website automatically.



Requirement Analysis and Specification

* + 1. Major Requirements

1. Suggesting best package for user’s current operator
2. Suggesting Super FnF and General FnF number for the corresponding package
3. Suggesting best operator and it’s best package
   * 1. Minor Requirements
4. Addition of “Activate” button to activate suggested package
5. Addition of “Add” button to add suggested fnf or super fnf number
6. Showing the cost details of other package so that user can compare themselves
7. Showing the cost details of other operator
   * 1. Requirement Gathering

Major requirements were gathered from my supervisor. Minor requirements were gathered from some of the users by asking them several questions like what additional feature they wanted. Some of them asked to add the cost details of other package and some asked for cost of other operator.

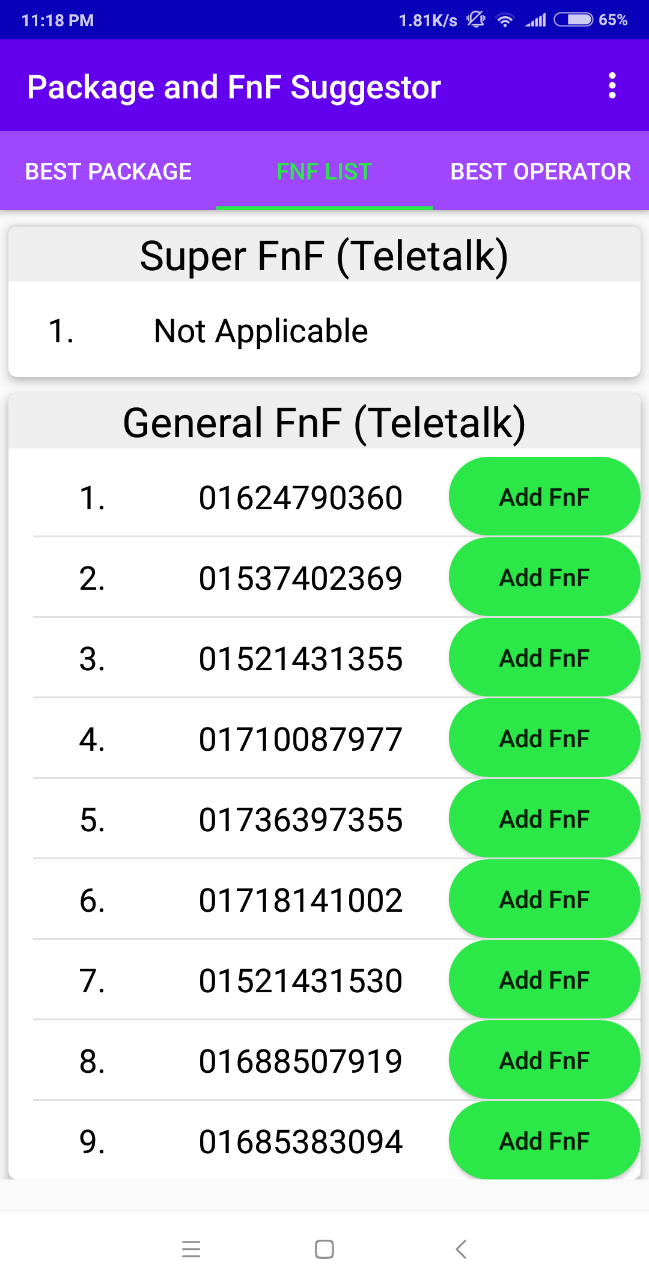
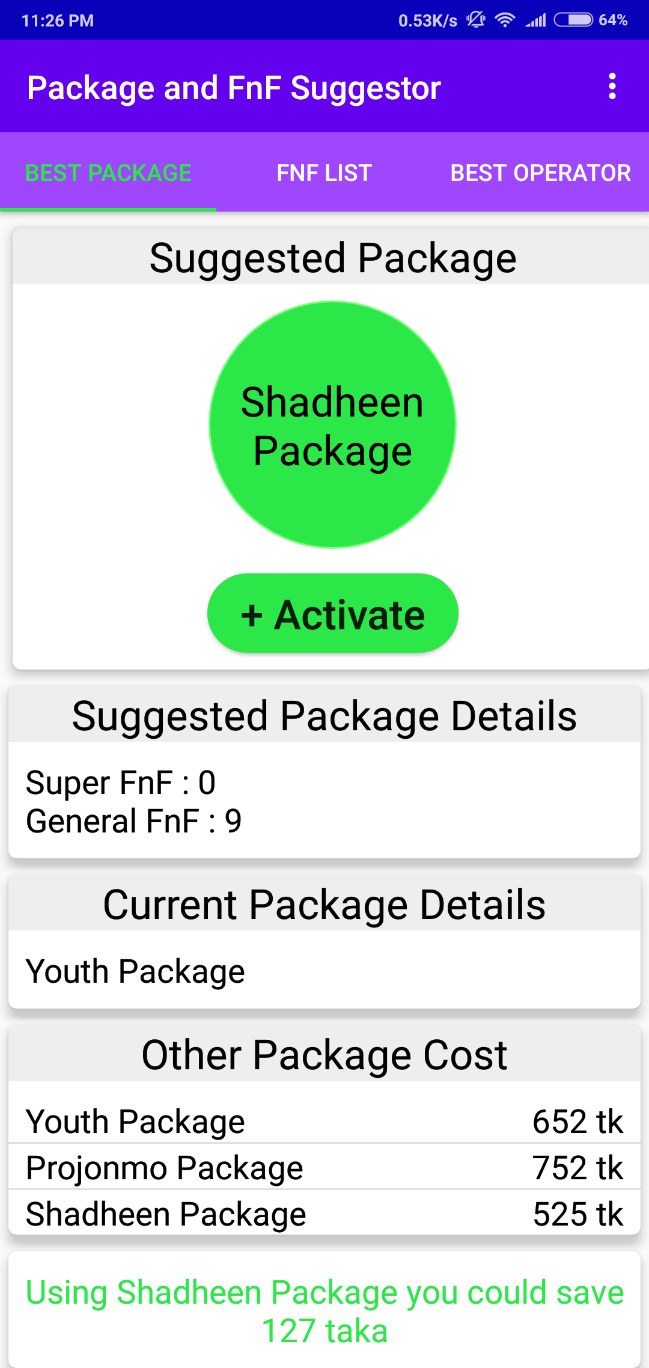
* + 1. Finalizing the design of the prototype

Figure : Best Package Page

Figure : FnF List Page

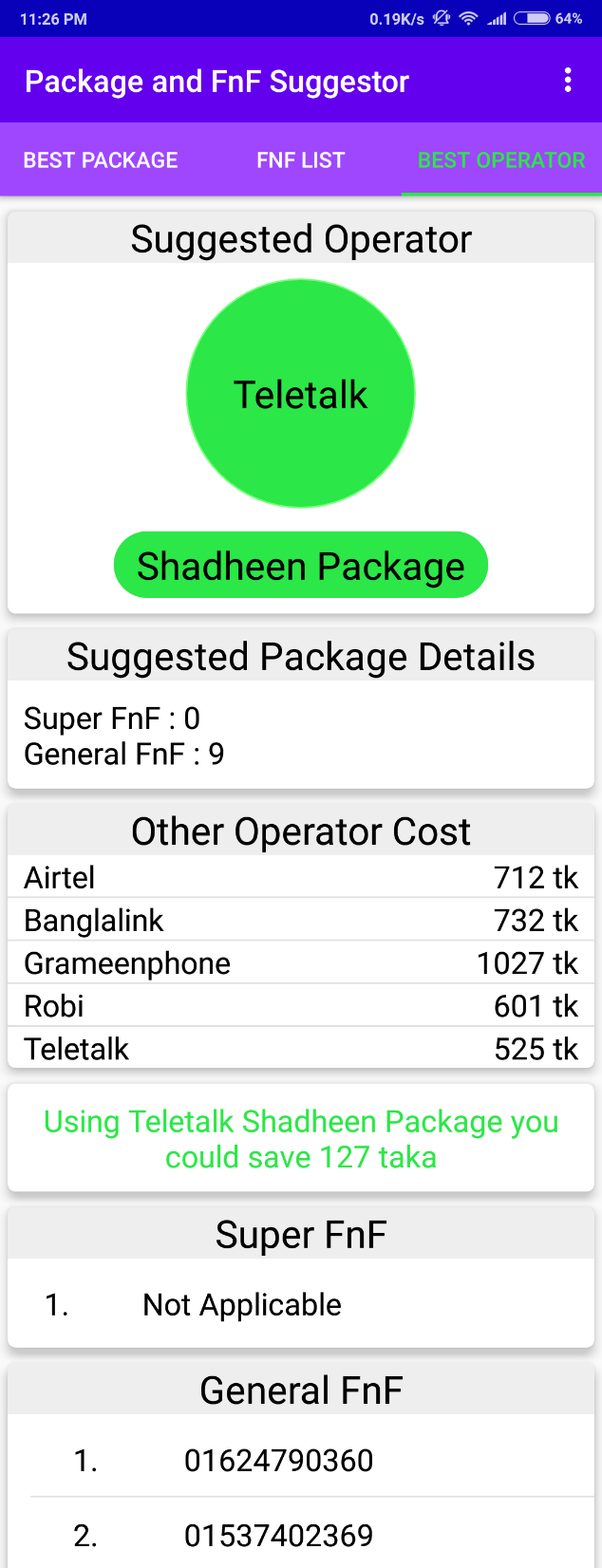
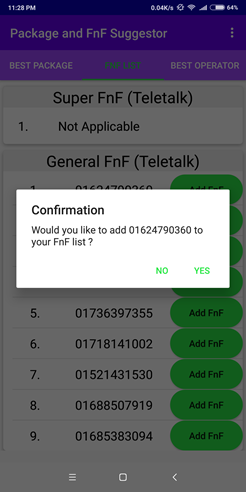
 

Figure : Confirmation Page for Adding FnF

Figure : Best Operator Page

* + 1. Use-Case Modeling

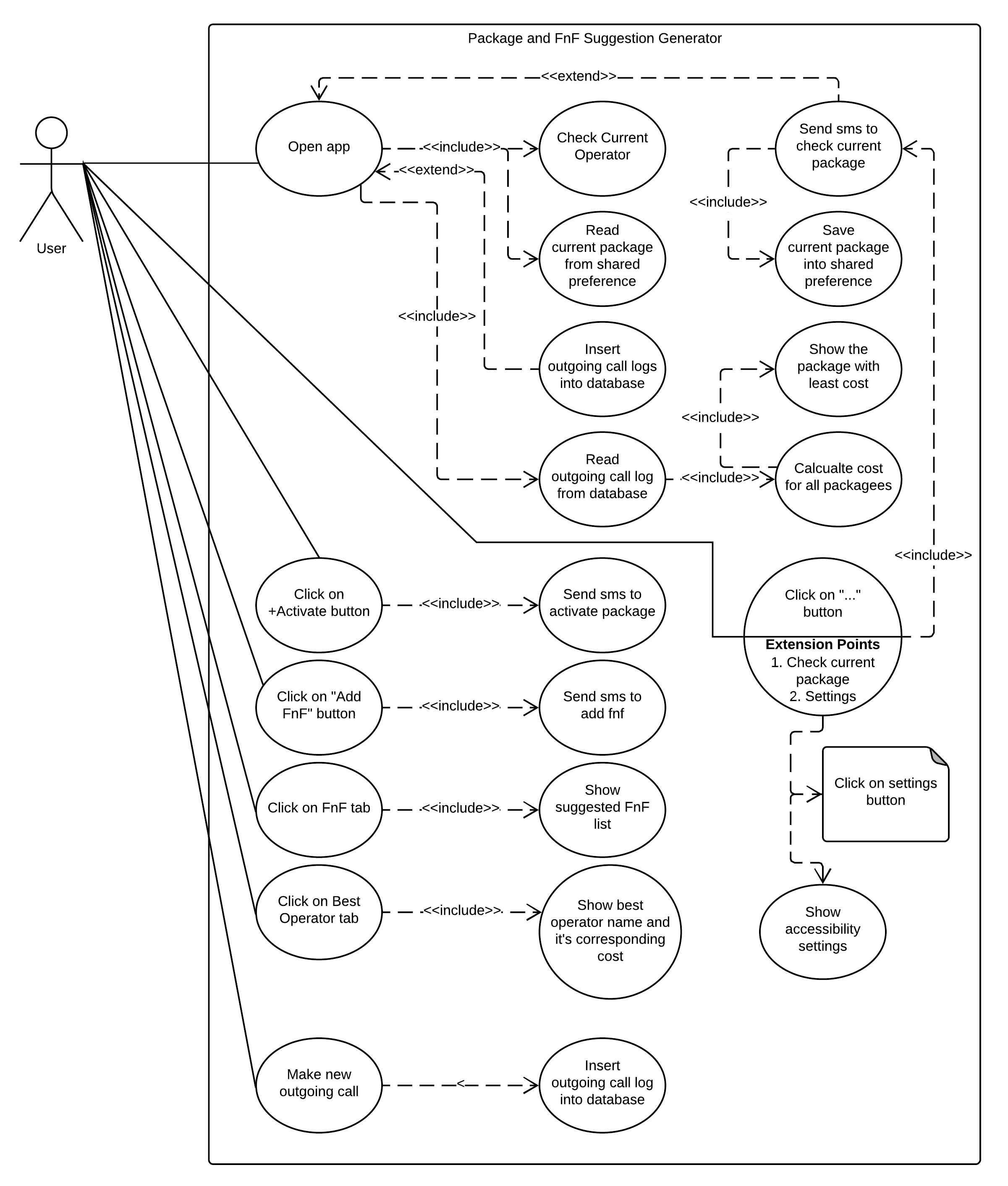


Figure : Use Case Diagram

* + 1. Constraints

The Banglalink operator doesn’t have any system to check package through sms. The airtel operator costs 0.55 taka to check package though sms but 0 taka through USSD call. The Teletalk operator doesn’t have any working service to check current packge. The Grameenphone operator sometimes take a long time to reply sms with current package.

Some of the devices like Mi doesn’t allow the app to read sms automatically. It is required to allow this option manually by the user.

* + 1. Assumptions and Dependencies

It was assumed that Sim Card remains same for all outgoing calls. Different recharge offers were not taken into count.

The whole application is dependent on the call rate found in the operator’s website.



System Design

* + 1. Data Flow Diagram

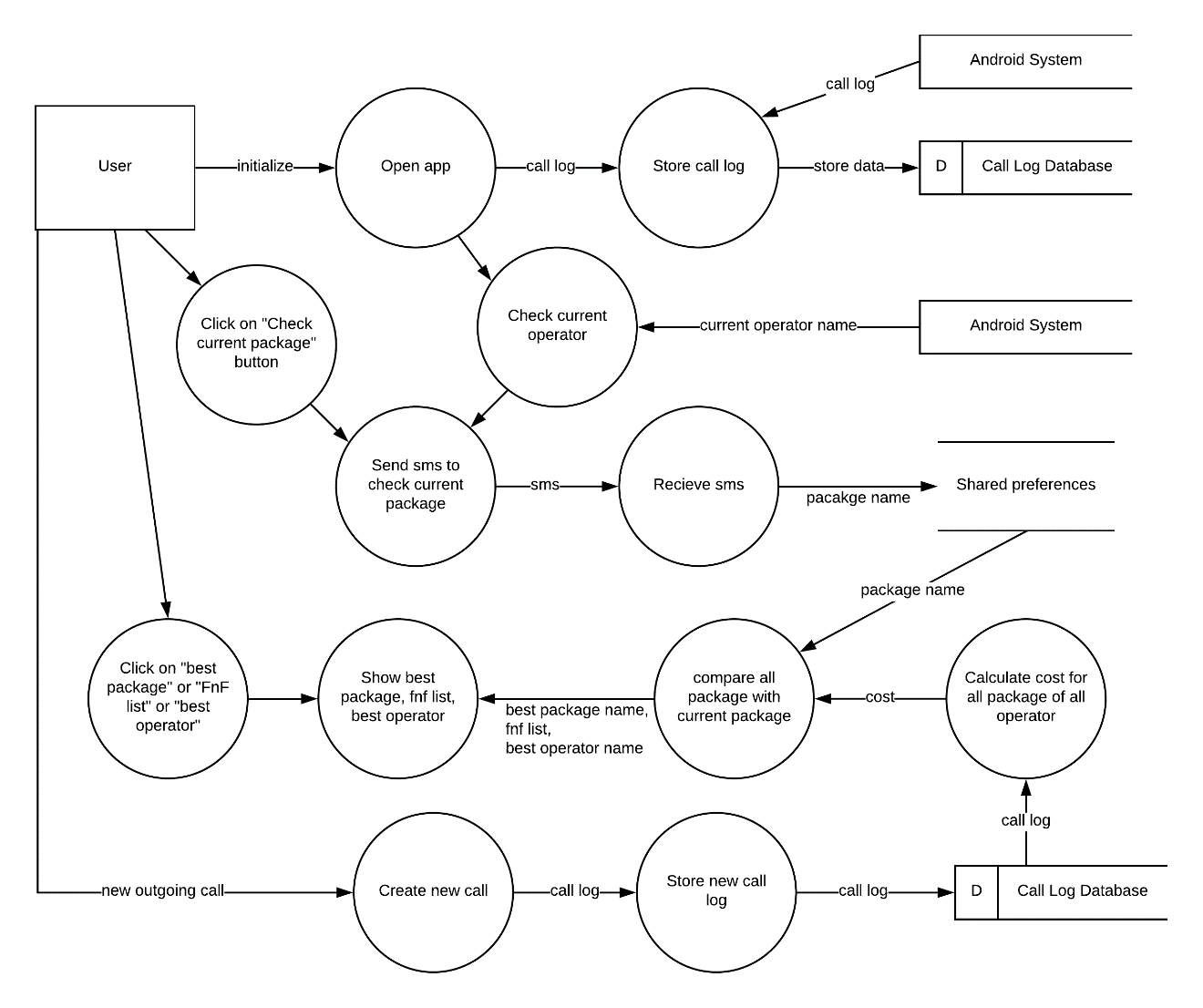


Figure : Data Flow Diagram

* + 1. Activity Diagram

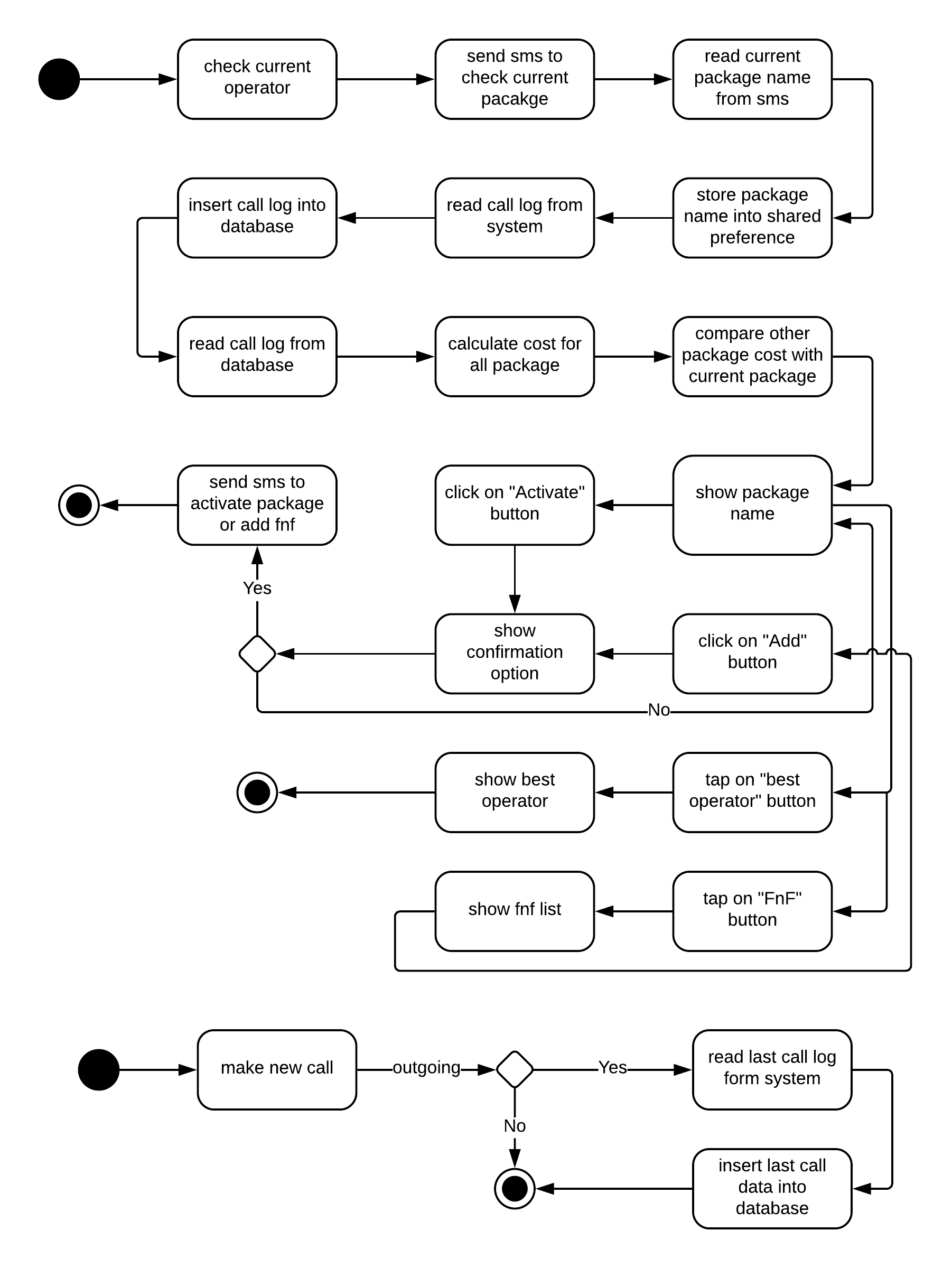


Figure : Activity Diagram

* + 1. Class Diagram

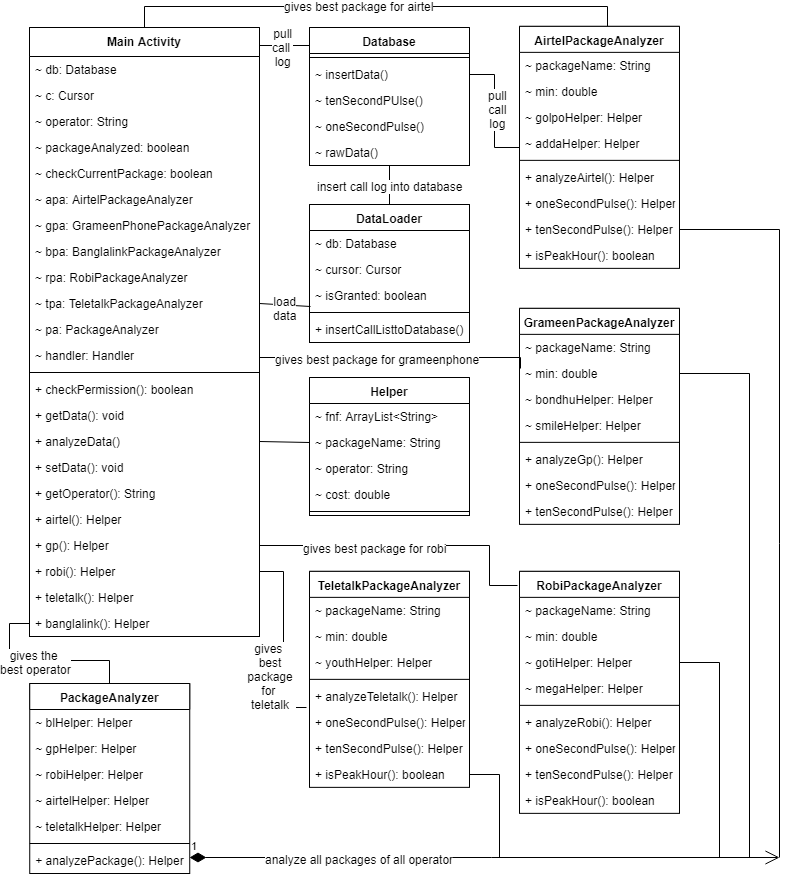


Figure : Class Diagram

* + 1. ER Diagram

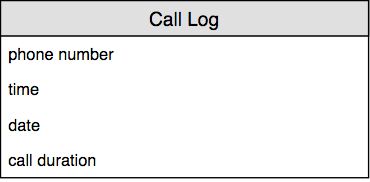


Figure : ER Diagram

* + 1. Input and Output Interface

The given pictures in [section 3.4](#section_3_4) resembles the output interface except for figure 3. Here, only the buttons and figure 3 are the part of input interface.



System Assessment

* + 1. System Requirement

Operating system: Android

Minimum API level: 18

Minimum android version: 4.2.1

* + 1. Testing

The app was tested on several android devices like Huawei, Samsung, MI, Symphony of different android versions like Lollipop, Marshmallow, Nougat, Oreo and showed the best possible results. The users were satisfied with the outcome, the app provided. For example, it gave the accurate result for Super FnF as well as other.

* + 1. Testing Strategies

Dummy call log was created in emulator with known numbers, call duration, time and date. It gave accurate result for Package, Super FnF, General FnF and Operator.

* + 1. Result Analysis

For both real device and dummy device call log, result was perfect as the user desired.



Conclusion and Future Work

The app was developed to help people choosing economy Package for phone call as well as their corresponding Super FnF, General FnF. User can easily activate his/her suggested best package, fnf and super fnf by clicking on specific buttons without any doubt. While building the app, it was assumed that all the phone calls were made by same SIM card. The app can only detect operator of SIM-1 in dual sim phone. Hence, it will give suggestion only for SIM-1 in dual sim phone.

Calling cost was calculated by hard coded call rate. This app can be further developed to crawl data (call rate) from the operator’s website automatically. Functionality to give suggestion for both SIM in dual sim phone can be introduced.