At Rummy Circle, we are in a constant pursuit of making our gaming platform more engaging and much more fun. When a player falls in love with the gaming experience we provide, he/she wants more of it. And the real fun comes with Cash Gaming.

You can start playing cash games by depositing money in your RummyCircle Wallet. You can start playing with as small an amount as Rs. 25.

To enhance the gaming experience, the Product Team keeps coming up with innovative and amazing Product Features which needs to be tested before going live for all the players.

Here is how we setup our tests:

1. Define the segments on which the feature needs to be tested
2. Split the segments randomly into two groups. We call them Control & Test Groups
3. Implement the new feature for the Test Group while maintaining the status quo for the Control

Once the Test is run for a desired period, we look at the data to decide eventually which group performed better. If the Test Group performs better, then we go ahead with implementing the feature for all players of the chosen segments.

In one of these tests, we selected one segment and split them into two groups: Control & Test. Players from the Test Group were exposed to the new feature while the players in the Control Group were not.

Attached with this is the data file. Based on the data, please find the answers to the questions below:

1. Please create appropriate visualizations to show the relative performance of the Test Path compared to the Control on the following metrics:
   1. LTP
   2. Conversion Rate
   3. Fun Games
   4. Cash Games
2. Basis the data provided, would you recommend going with the new feature? If yes, then why. And if no, then why not?
3. **Bonus Question:** Please use appropriate statistical Tests to establish significance of the differences between Control and Test Path on the four metrics listed in 1 and state the results.

# Definitions

**User ID**

A numerical ID assigned to each user on their registration.

**Fun Games**

Games played with fun chips in your account. These chips are provided free of cost to the players so that they get a first hand experience of Rummy without having to worry about cost.

**Cash Games**

Games played by wagering money. To play a cash game, you have to deposit some cash first.

**Player**

Is a user who has played a Game is called a player. If the user has played a cash game, he/she will be called a ***Cash Player*** or ***Paid Player*** else if they have played a Fun Game, they will be called ***Fun Players* or *Unpaid Player*** else if they have not played any cash or fun games, they shall simply be called ***Users***.

**Conversion**

We define conversion when a user plays his first cash Game after depositing Cash. Base for Calculating **Conversion Rate** is the set of all registered users.

**\*LTP**

Defined as “Lead to Paid ratio”. LTP = Count of Paid Users/Count of Total Users

**Revenue**

A part of a players’ winning in Cash Game which the Platform charges as a commission from the winner in a game is called Revenue. We do not charge any commission from a player who lost a game.