**TATKAL Ticket Reservation Scheme**

**Business/Company:** IRCTC- Indian Railways Catering and Tourism Corporation

**Company Description:** IRCTC is a subsidiary of the [Indian Railways](https://en.wikipedia.org/wiki/Indian_Railways) that handles the catering, tourism and online ticketing operations of the Indian railways.  IRCTC is the leading travel e-commerce site in the India with the highest transaction share in the travel category.

**Process Name:** TATKAL ticket booking operations

**Process Description:** Indian Railways provides reservations on all classes of travel except general class. The reservations can be made online, in person at a travel agency or Indian Railways booking counter. Each ticket is assigned with a unique ticket number called PNR (Passenger name record) number. The booking can be done under various quotas and status. To check the status of a valid travel ticket we need to check the status of ticket online using PNR (Passenger name record) number. The Tatkal Scheme is an Indian Railways scheme for journey at very short notices. 'Tatkal' literally means 'immediately'. Tatkal Booking starts one day in advance, excluding the day of journey e.g. for a journey on 3rd, bookings would open at 10 am on 2nd. Currently, it is said to sell about 40-45,000 Tatkal railway tickets between 10 am and 11 am. Limited number of seats can be booked by this method and there will be extra charge on the tickets.

**Triggering Event:** User login into the IRCTC E-Ticketing platform.

**Result:** Emergency ticket booking at IRCTC E-Ticketing platform with minimal user efforts.

**As Is Process Steps:**

1. **Open Website**: <https://www.irctc.co.in> (**Actors involved:** User, E-Ticketing Platform)
2. **Login**: We will enter our username and password. In case of an invalid entry in username or password or captcha, the portal will prompt to enter the correct details again. (**Actors involved**: User, E-Ticketing Platform)
3. **Enter Travel Itinerary**: Origin and destination station needs to be entered along with date of journey. We can fetch these details directly from our ‘favorite journey’ section. After entering the correct source and destination, we will click on search button which will trigger an event. This event fires a query based on your parameters to the centralized database which returns the train schedule for the particular date. (**Actors involved:** User, E-Ticketing Platform)
4. **Select payment method**: Once train and class (AC or normal coaches) selection is done, we can select the mode which we want to use for our payment. (**Actors involved**: User, E-Ticketing Platform, Payment Gateway)
5. **Confirm Ticket**: After successful transaction of the payment, we will get the ticket confirmation page along with the necessary details. (**Actors involved**: User, E-Ticketing Platform)

**Problems with As Is process:**

1. **Problem Statement:** Online Traffic surge during Tatkal hours.

**Solution proposed in To Be process:** To remove Traffic surge at TATKAL booking hours, flexible booking timings can be provided. There can be a 1-hour TATKAL window for trains leaving before 2 AM, while another 1-hour window for trains leaving after 2 PM. This way the concentration of the load will be distributed over two hours.

1. **Problem:** IRCTC have Ads on their site with many images and maybe some Java scripts which adds an additional load time for the web pages to load. Thus, these factors slow down your online tatkal booking process.

**Solution proposed in To Be process:** Ads can be removed during Tatkal booking hours, minimizing the load time for the web pages to load, making online booking fast and efficient.

1. **Problem Statement**: IRCTC is facing the biggest challenge of overcrowded servers. Indian Railways consistently sells more than 1 lakh tickets every day. The possible issue is servers are concentrated in one region.

**Solution proposed in To Be process**: The key solution these days is cloud computing. If they have cloud computing infrastructure in place, then Delhi customers can connect to Delhi servers and Mumbai customers can connect to the western server, wherever it is placed. On deploying cloud, another convenient factor is if the Delhi server is overloaded, then you can move transactions to the server in the nearest region and this will help proportion the load.

1. **Problem:** Processing payments has been a huge task as it creates bottleneck at payment gateway end. It involves a series of menu selections by users each causing pages to load followed by complex handshakes between IRCTC, third party gateways, and the banks, security checks and so on. Each step is prone to failures too. On the whole, 29% of attempted payments failed.

**Solution proposed in To Be process:** Decoupling payment and ticket booking by making wallet payments mandatory during TATKAL booking hours. This will make the ticket booking process shorter and better. This process won’t be dependent on payment gateways confirmation to book tickets.

**To Be Process Steps:**

1. **Open Website**: <https://www.irctc.co.in> (**Actors involved:** User, E-Ticketing Platform)
2. **Login**: We will enter our username and password. In case of an invalid entry in username or password or captcha, the portal will prompt to enter the correct details again. (**Actors involved:** User, E-Ticketing Platform)
3. **Disable Ads**: A background process will run which will disable all advertisements during the tatkal timings between 10 AM to 12 PM. (**Actors involved:** E-Ticketing Platform)
4. **Enter Travel Itinerary**: Origin and destination station needs to be entered along with date of journey. We can fetch these details directly from our ‘favorite journey’ section. After entering the correct source and destination, we will click on search button which will trigger an event. This event fires a query based on your parameters to the centralized database which returns the train schedule for the particular time of the day as per one of the 2 tatkal slots. (**Actors involved**: User, E-Ticketing Platform)
5. **Show Wallet Payment option:** All payment methods except wallet payments will be disabled by a background process during the tatkal timings. (**Actors involved**: E-Ticketing Platform)
6. **Make Payment**: Once train and class (AC coaches or normal chair car) selection is done, we will pay the train fare from IRCTC wallet payment method. (**Actors involved**: User, E-Ticketing Platform)
7. **Confirm Ticket**: After successful transaction of the payment, we will get the ticket confirmation page along with the necessary details. (**Actors involved:** User, E-Ticketing Platform)

**Note:** Once the user logins during the tatkal hours and enters the to and from station along with the travel date, a background process will run and only the train pertaining to the time slot of the tatkal slot will be displayed.