सत्यमेव जयते

Ministry of AYUSH

CHIRAYU

Problem Code: SH1

Problem Statement: Ayurveda Pharma-covigilance Portal(Web & App)

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INTRODUCTION

Problem Statement

Though for centuries ASU drugs are considered as safe and innocuous drugs, this perception is likely to change in the light of some recent occurrence of incidences of ADR during their use. This along with increased wide spread use of both at national and international levels has increased interaction of these drugs with diverse genomic profiles. The purpose of the programme is to collect and collate data, analyze it and use the inferences to recommend informed regulatory interventions, besides communicating risks to healthcare professionals and the public. At present, it is cumbersome to convey information obtained from primary centers to secondary and then tertiary centers.

Limitations of Existing Solution

There is an application 'ADR PvPI' to collect data regarding the adverse drug reactions from the PPC – ASU(primary level which consists of either Healthcare Professionals or the Patients). There are several issues in the app including the host is not able to track the status of report delivery, improper generation of reference number as well as the pdf.

Proposal

We propose android application and web portal in the name of **'CHIRAYU'** to automate the process of collection of ADR Data, tracking of ADR forms, monitoring ADR reports and overcoming problems by giving solution for all levels working under NPP-ASU. The solution would be designed in multilevel architecture and multilevel user management would be provided to maintain security. The modules provided for each level namely PPC, RPC and NPRC will be provided on the basis of user rights. The web portal will be developed keeping in mind that the process of monitoring adverse effects MIS Reports of ASU drugs will be easy and user friendly. The android application will be developed keeping in mind that the coordinator, sub-coordinator, general public, etc. have proper track of movement of ADR form at respective centers.

TECHNOLOGY STACK

ANDROID DEVELOPMENT

- Android Studio
- Java

WEB DEVELOPMENT

- CSS
- HTML
- Java Script
- ASP.Net C#

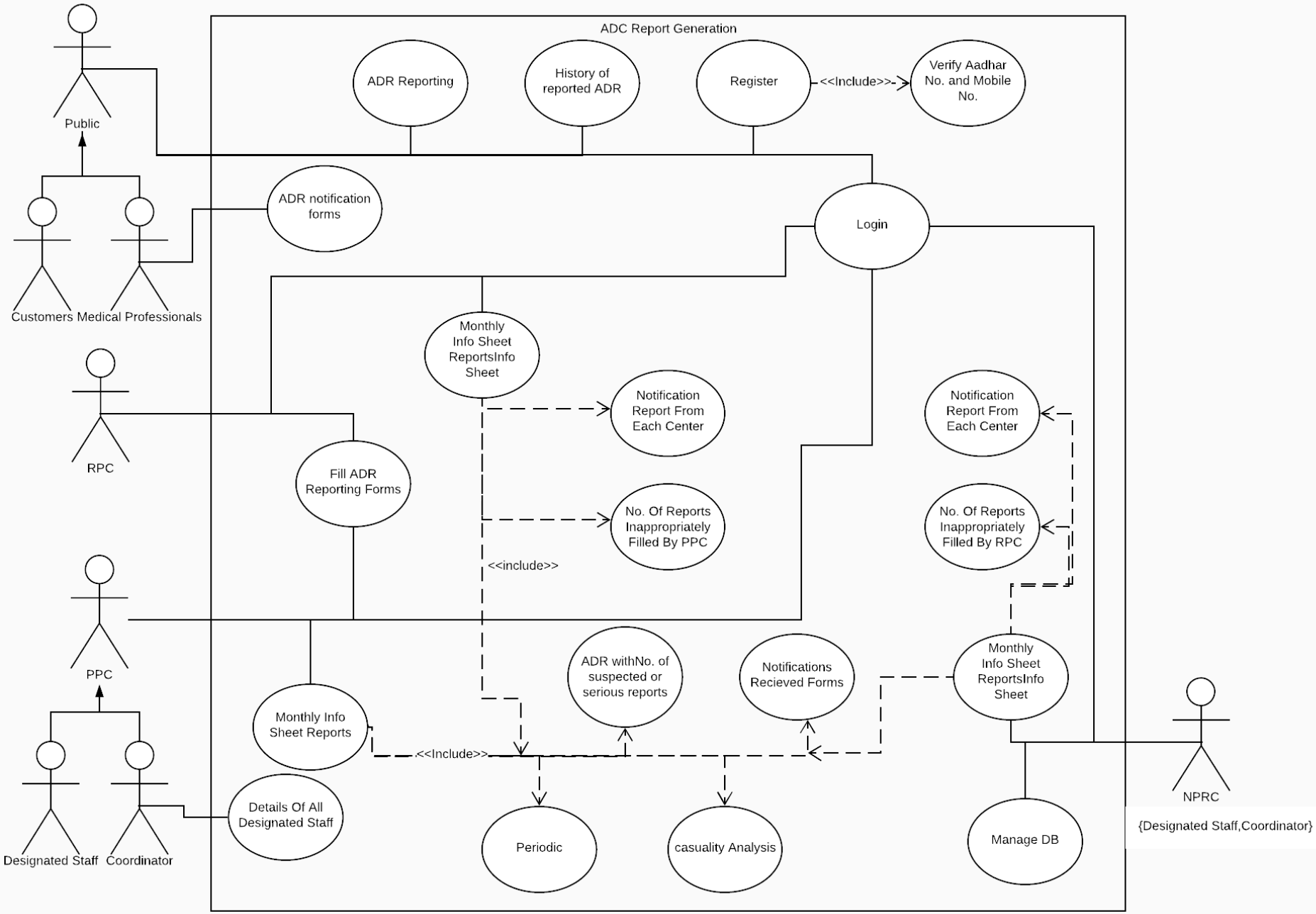
MACHINE LEARNING

- Python
- Tensorflow
- Numpy

SQL

- MongoDB
- MS SQL SERVER

User Case Diagram



ANDROID APPLICATION

Working Prototype of CHIRAYU App

- Sign In / Sign Up of App User based on Aadhaar no data and OTP authentication of new registration.
- Biometric technique(fingerprint) for login and validating data of user in database.
- ADR form filling according to the form provided by the Ministry.
- ADR form design is divide in following levels :
  - Reporter's Details
  - Notifier's Details
  - Patient Details
  - Reaction Details,
  - Drug Details(multiple drugs for a specific form).
- Geolocation is also being fetched at the time of ADR report submission for further authentication of Reporter.
- Detailed Statistical Reports , Track of ADR's for coordinators and APP users

ANDROID APPLICATION

Enhanced Features of CHIRAYU App (For Future)

- Simplifying the App login process using face recognition technique .
- Simplifying ADR registration process by using new innovations like
  - Speech to text conversion
  - OCR Technique
- Streamlining the review process, thereby providing the statistical analysis for the same.
- Notification to respective coordinator whenever new ADR is reported by various users.
- Notification to NPRC within 24 hours if adverse reaction is reported.
- **CHATBOT –** For clarification and detailed knowledge about the project and common drugs will be implemented using Machine Learning. Users can directly receive information without involvement of any manual intervention.
- ADR reporting forms on android applications are not in vernacular languages but can be incorporated in future version of project.

WEB PORTAL

SALIENT FEATURES:

- *Will be provided only to coordinators at various levels.*
- *Master registration like user master , Centre master , drug master , etc.*
- *ADR review and evaluation module including probability/ causality assessment.*
- *Reporting of ADR forms and evaluation modules.*
- *The reports have been designed and managed according to the requirements of ministry mentioned in protocols.*

Thank you for your patience to view our complete project proposal.

We look forward to your initial and regular inputs to discuss the proposal and deliver a solution as per the requirements of the Ministry.

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