

## Main Modules

1. Dashboard
2. Patient
3. Report

## Entries

1. Clinic
2. User
3. Clinic-user
4. Role
5. Role Permission
6. User-Role
7. Patient

## Clinic

Field	Type	Comment
ID	GUID	Primary key
Full Name	String(100)	
Short Name	String(10)	This should be unique and will use this value in local application to identify the current clinic.
Location	String(100)	

Clinic information will enter/update in cloud system by admin and will pull in local database by watching system.

Whenever new clinic add admin will create new clinic and deploy the application in that location and pull data from cloud.

## User

Field	Type	Comment
ID	GUID	Primary key
Name	String(50)	
LoginName	String(12)	Will use for login

Password	String(20)	Encrypted text
Profile pic	String(100)	

In the system there will not be any self register process, all users will be created by admin usually in cloud. The admin user will be created by script when deploy the application. There will not be any recover password system if anybody forget password admin will reset password for them. User itself will able to change there name, password and profile picture not login name.

### User-Clinic

Field	Type	Comment
ID	GUID	Primary
UserId	GUID	Foreign key
ClinicId	GUID	Foreign key

One user can associate with multiple clinic.

### Role

Field	Type	Comment
ID	GUID	Primary key
Name	String(20)	
Active	Bit	

Role is global and will associate to user. Roles will share to all clinic. There will no role only for a specific clinic.

### Possibles roles

- a. Admin
- b. Program manager
- c. Program officer
- d. Patient register
- e. Photographer
- f. Primary Grader
- g. Secondary Grader
- h. Arbitrator

## Permission

Name	Read	Entry	Edit/Delete
User	y/n	y/n	y/n
Clinic	y/n	y/n	y/n
Dashboard	y/n	-	-
Patient	y/n	y/n	y/n
Photography	y/n	y/n	y/n
Primary Grading	y/n	y/n	y/n
Secondary Grading	y/n	y/n	y/n
Arbitration	y/n	y/n	y/n
Report	y/n	-	-

Permission will set to role. If one user associate to multiple clinic he will get same role and permission in each clinic that means clinic wise role permission set will not be possible.

## User-Role

Field	Type	Comment
ID	GUID	Primary key
UserId	GUID	Foreign key
RoleId	GUID	Foreign key

One user can associate with multiple role, Permissions among roles will be OR that means if any action is denied to a role and allowed in associated another role than user will be allowed to perform the action.

## Patient

Patient is the main entity in this system. Patient information can create only from local system, From cloud only update will be possible. Patient have two types of informations

1. Fixed information, which will use to search patient
2. Visit/appointment information(Historical)

## Fixed info

Field name	Type	Comment
Patients full Name	String(50)	Mandatory
PatientId	String(50)	Hospital will provide the id(Mandatory)
Date of Registration	Date	Auto from system date
Patients age	Date	User will enter age system will convert it to DOB (Mandatory)
Genger	Male/Female	Mandatory
ClinicId	GUID	Auto selected
Address	(Union, Upazila, District)	
Own Mobile		
Relative mobile		
Religion	Muslim/Hindu/Christian/Buddhist/others	Mandatory
Marital Status	Married/unmarried/widow/others	Mandatory
Occupation	Business/Retired/Housewife/Farmer/Day Labor/student/others	Mandatory
Height	number	In inch

### Visit information

Visit informations will show side by side in patient details page. This information will enter in different steps

Step 1 Enter Historical information

Step 2 Photography information

Step 3 Primary grade information

Step 4 Secondary grade information

Step 5 Arbitration information

Step 6 Treatment plan

**Patient status**

In each step patient status will set internally.

(waiting for photography, waiting for primary grading, waiting for secondary grading, waiting for arbitration, referral outcome )

**Step 1 Enter Historical information**

To ensure that the correct patient is present: Ask the patient for their name, address and date of birth -Yes/No,Do the name, address and date of birth they provided match the details above?

Field	Type	Comment
Monthly income		
Weight		In KG
Smoker	Yes/No	if yes-How long
<b>Patients disease History</b>		
Heart disease	Yes/No	
Hypertension	Yes/No	
Diabetes Mellitus	Yes/No	
Diabetic Retinopathy	Yes/No	
Diabetic Nephropathy	Yes/No	
Diabetic Neuropathy	Yes/No	
<b>Information regarding Diabetes (NB: In next visit this section will auto populate from previous visit)</b>		
Type of Diabetes	type-1/Type-2/GDM	
Duration of Diabetes	Date	User will provide year system will convert it to date
Present Treatment History	Oral HA, Insulin, Diet, exercise, None above-Check box (multiple choose )	
<b>Investigations</b>		
FBS	string	mmol/L or mg/dL
2 hours AFB	string	mmol/L or mg/dL

RBS	string	mmol/L or mg/dL																										
HbA1C	string	%																										
S. Creatinine	string	mg/dL																										
Lipid Profile	string																											
Total Cholesterol	string	mg/dl																										
TG	string	mg/dl																										
LDL	string	mg/dl																										
HDL	string	mg/dl																										
<b>Vision Status (This information will record for both left and right eye)</b>																												
Missing eye	Yes/No																											
Visual acuity not measured																												
Visual acuity no correction	Snellen Chart Logmar Chart																											
Visual acuity with correction	<table border="1"> <thead> <tr> <th>Right eye</th> <th>Left eye</th> </tr> </thead> <tbody> <tr><td>6/3</td><td>6/3</td></tr> <tr><td>6/4</td><td>6/4</td></tr> <tr><td>6/5</td><td>6/5</td></tr> <tr><td>6/6</td><td>6/6</td></tr> <tr><td>6/9</td><td>6/9</td></tr> <tr><td>6/12</td><td>6/12</td></tr> <tr><td>6/24</td><td>6/24</td></tr> <tr><td>6/36</td><td>6/36</td></tr> <tr><td>6/60</td><td>6/60</td></tr> <tr><td>5/60</td><td>5/60</td></tr> <tr><td>4/60</td><td>4/60</td></tr> <tr><td>3/60</td><td>3/60</td></tr> </tbody> </table>	Right eye	Left eye	6/3	6/3	6/4	6/4	6/5	6/5	6/6	6/6	6/9	6/9	6/12	6/12	6/24	6/24	6/36	6/36	6/60	6/60	5/60	5/60	4/60	4/60	3/60	3/60	
Right eye	Left eye																											
6/3	6/3																											
6/4	6/4																											
6/5	6/5																											
6/6	6/6																											
6/9	6/9																											
6/12	6/12																											
6/24	6/24																											
6/36	6/36																											
6/60	6/60																											
5/60	5/60																											
4/60	4/60																											
3/60	3/60																											

	<table border="1"> <tr><td>2/60</td><td>2/60</td></tr> <tr><td>1/60</td><td>1/60</td></tr> <tr><td>CF</td><td>CF</td></tr> <tr><td>HM</td><td>HM</td></tr> <tr><td>PL</td><td>PL</td></tr> <tr><td>NPL</td><td>NPL</td></tr> </table>	2/60	2/60	1/60	1/60	CF	CF	HM	HM	PL	PL	NPL	NPL	
2/60	2/60													
1/60	1/60													
CF	CF													
HM	HM													
PL	PL													
NPL	NPL													
Visual acuity with pinhole														
<b>Known allergies</b>														
medicine for dilatation	Yes/No	if yes, List of drops												
Drop Name	Tropicamide 0.5% Phenylephrine 2.5% Tropicamide 1% Undiluted Other dilation drops	multiselect												
Myrdiatic reaction	Yes/No													

## Step 2 Photography information

To ensure that the correct patient is present: Ask the patient for their name, address and date of birth -Yes/No, Do the name, address and date of birth they provided match the details above? After that it needs to get the consent from the patient to use the photograph for analysis

Field	Data Type	Comment
Concent	Consent list	
Image quality	Adequate Inadequate	For both eye
severity	High/Medium/Low	
Comment		

In this step photographer will take photo, each time click the new photo will show in full window to check the quality. All pictures will show as thumb view, from this view user will able to enlarge the picture. User will select desired pictures and save the informations. System will remove the other unnecessary images.

### Step 3 Grading

Grading can complete by 3 steps

- a. Primary grading
- b. Secondary grading
- c. Arbitration

In each step system will capture same data. During secondary grading grader will not be able to see the primary grading value.

Field	Datatype	Comment
<b>Retinopathy</b>		
Retinopathy	R0/R1/R2/R3S/R3A	For both eye
<b>Sub options for Retinopathy</b>		
R0	No sub option	<b>No Diabetes Retinopathy</b>
R1	<ol style="list-style-type: none"> <li>a. 1 or more microaneurysm (S)</li> <li>b. 1 or more hemorrhage (S)</li> <li>c. Any Exudate cause by DR</li> <li>d. 5 or fewer CWS in the present of other DR</li> <li>e. More than 5 CWS in the presence of other DR</li> </ol>	<b>Background DR</b>
R2	<ol style="list-style-type: none"> <li>a. Internal Microvascular Abnormality (IRMA)</li> <li>b. Venus Beading</li> <li>c. Venus Loop or reduplication</li> <li>d. Multiple deep, round or blot haemorrhage</li> </ol>	<b>PRE- PROLIFERATIVE DR</b>
R3S	<ol style="list-style-type: none"> <li>a. Stable pre-retinal fibrosis</li> </ol>	<b>STABLE POST TREATMENT PROLIFERATIVE DR</b>



	<ul style="list-style-type: none"> <li>b. Stable fibrous proliferation (disc or elsewhere)+ Peripheral retinal scatter laser</li> <li>c. Stable R2 features ( from feature based grading) + Peripheral retinal scatter laser</li> <li>d. R1 feature (from feature based grading)</li> </ul>	
R3A	<ul style="list-style-type: none"> <li>a. New Vessels on the Disc (NVD)</li> <li>b. New Vessels Elsewhere (NVE)</li> <li>c. Pre -retinal haemorrhage</li> <li>d. Vitreous hemorrhage</li> <li>e. Pre -Retinal fibrosis due to DR</li> <li>f. tractional retinal detachment due to DR</li> <li>g. Reactivation of previous stable of R3S eye</li> <li>h. Rubeosis Iridis</li> </ul>	<b>ACTIVE PROLIFERATIVE DR</b>
<b>Maculopathy</b>		
Maculopathy	M0/M1	For boh eye
<b>Sub options for Maculopathy</b>		
M0	No sub option	
M1	<ul style="list-style-type: none"> <li>a. Exudate within 1 disc diameter (DD) of the fovea</li> <li>b. Circinate of group of exudates within the macula</li> <li>c. Any Micro aneurysm of hemorrhage within 1 DD of the fovea only if associate with a best</li> </ul>	

	VA of + 0.3 log mar (6/12) or worse	
<b>Photocoagulation</b>		
Photocoagulation	P0/P1	For bothEye
EyeCondition	Amblyopia Ant ischaemic optic neuropathy Aphakia Arterial emboli Asteroid hyalosis BRAO BRVO Cataract Complications of cataract surgery Conjunctival Corneal CRAO CRVO Endophthalmitis Endophthalmitis not related to cataract surgery Glaucoma Inherited defects Iritis/Uveitis Lid disorder Macular degeneration Nerve pulsy Neurological Optic nerve disorders Post vit. detachment Posterior capsule opacification Post-operative inflammation Pseudoaphakia Retinitis Scleral Thyroid trauma/foreign body Vitreous disorder	For bothEye
overallGradding		This will be autocalculated from the selection

OutCome		For primary and secondary grading the outcome will be auto selected according the formula and arbitrator will able to select the option from dropdown.
---------	--	--

### Treatment plan

Field	Data type	Comment
Prognosis_Static	yes/no	
Prognosis_improved	yes/no	
Prognosis_advanced	yes/no	
Laser	yes/no	
Laser_Comment		
Injection	yes/no	
Injection_Comment		
Surgery	yes/no	
Surgery_Comment		

### Dashboard

In dashboard user can see different summary in chart for a duration, depending on the clinic association data will vary for different user. user will able to change the duration from top. User will also able to see the list of chart data clicking on a link.

Following charts will be shown in dashboard

1. Patient statement per clinic-Grand total (Number) and last twelve months by bar chart. If user login to the local system it will show only the current clinic data, if user login to the cloud he will able to see the associated clinic data.
2. Male-female segregation clinic wise
3. Annual recall monthwise
4. Annual recall notification(next 3 month it will be list)
5. Grading statement-daily, monthly and yearly (How many patients are R0M0, R1M0, R2M0, R2M1,R3SM0,R3SM1 R3AM0,R3AM1)
6. Refer for treatment- daily, monthly and yearly
7. Follow-up statement-monthly,quarterly, half yearly
8. Treatment statement- Injection/Laser/Surgery

**Report**

All report should be exportable to excel and pdf format. To generate report user will able to set different criteria(date range , location , gender ). Following report will be available

1. Annual recall patient list ( field will be ID, name, address, phone no, gender ,registration date ,last visit date, Worse grading)
2. Awaiting for Arbitration (ID, name, address, phone no, gender ,registration date ,last visit date, Worse grading ,