Doctor Practice Management System [DPMS]

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Case Study Analysis

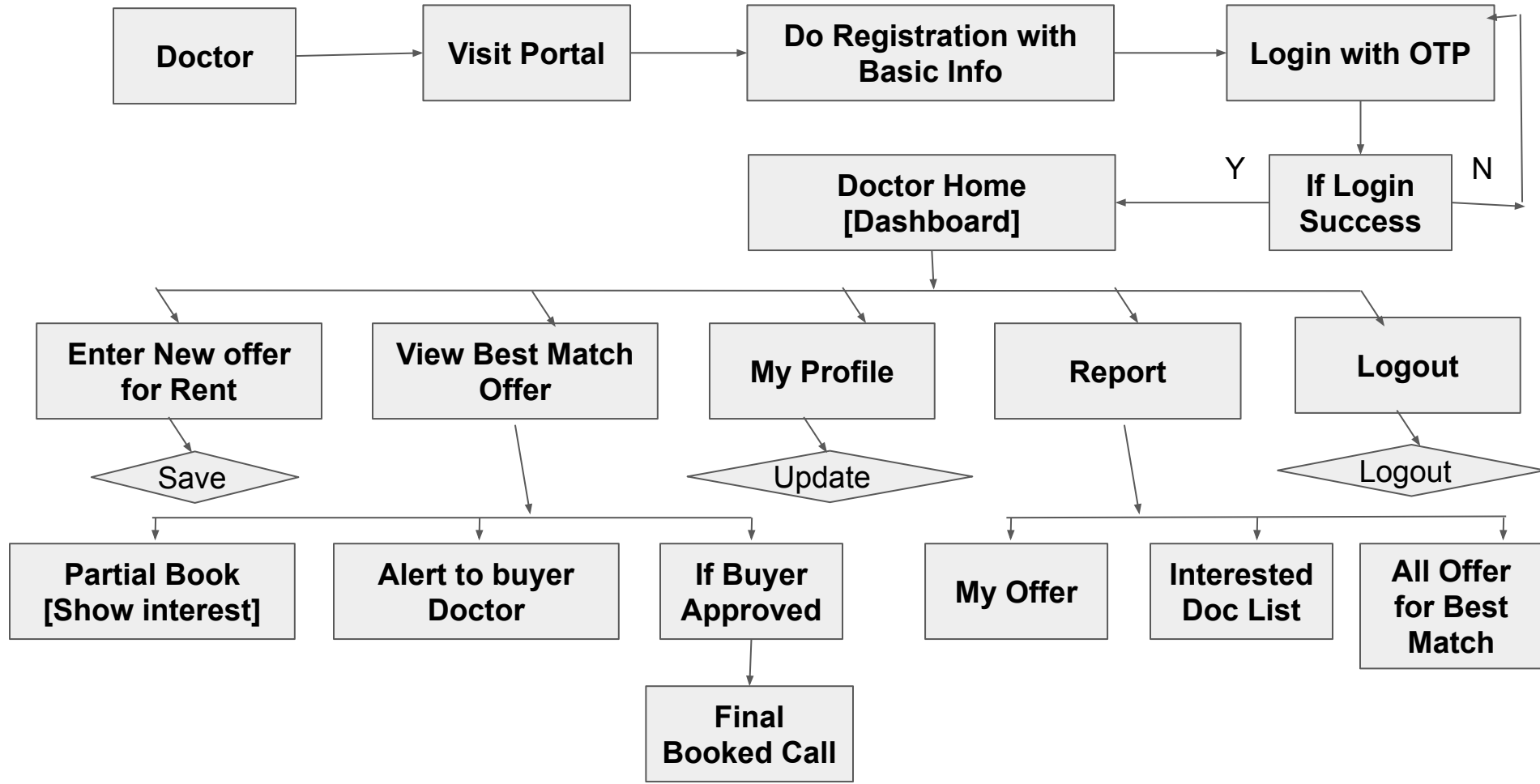In this Project we can consider Doctor with Practice & Doctor without practice

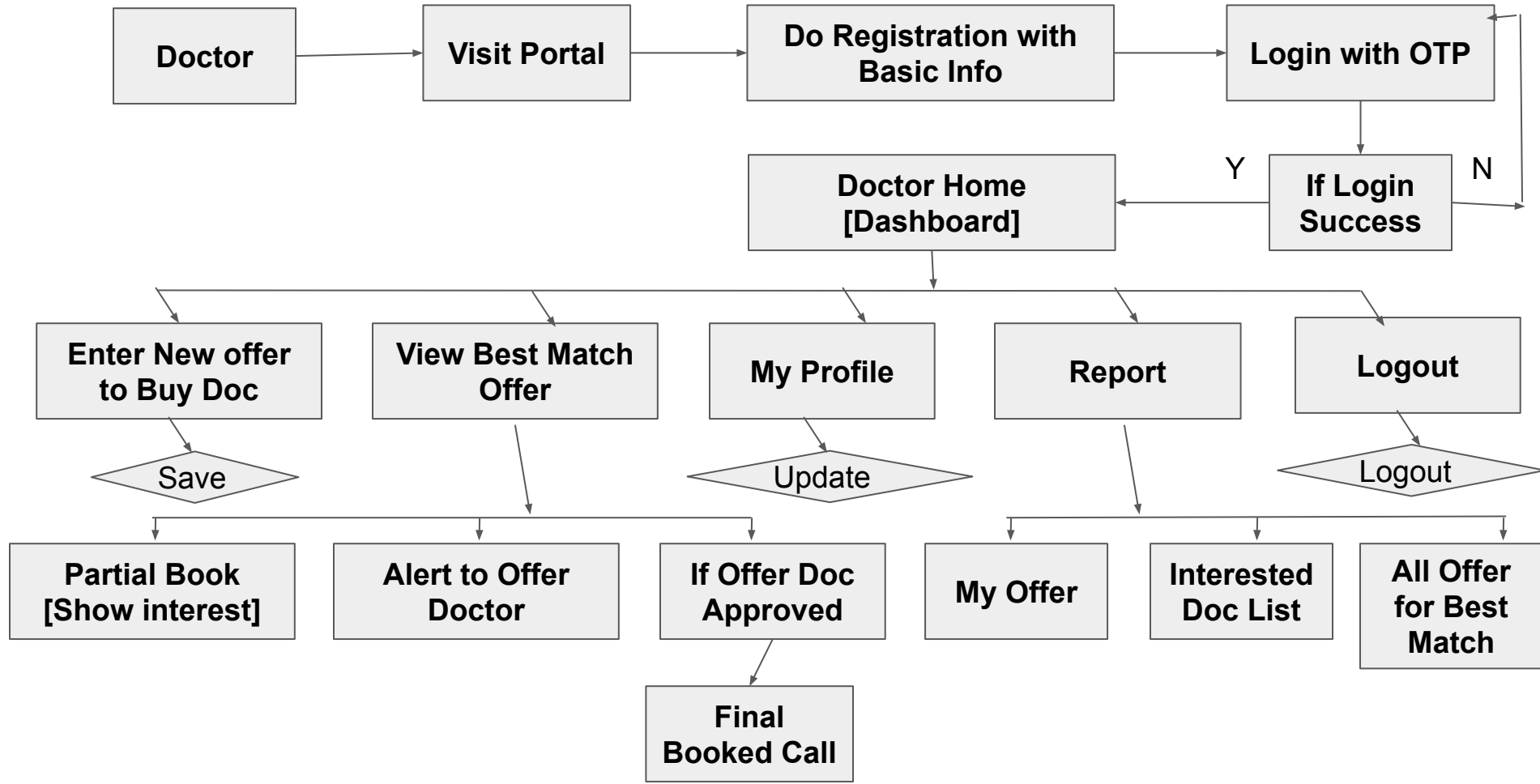| A	B
Doctor with Practice	Doctor without practice
He want to rent his practice	He want to buy practice
He will make a offer practice for Rent	He will make a offer to buy doctor practice
Eg - ABC doctor want to rent his practice in Ahmednagar for 1 day from 1st may to 5th may 2021 at Rate 1000 to 1200 per day	Eg - PQR doctor want to buy doctor practice in Pune for 1 day from 1st may to 5th may 2021 at Rate 800 to 1200 per day

Find the best match between A & B i.e Offer practice match with buyer doctor

In this system i am not consider online payment after offer booking. We can consider in future if & when required.

Flow diagram [Offer Practice]

```
Doctor → Visit Portal → Do Registration with Basic Info → Login with OTP
```

Login with OTP → If Login Success
If Login Success → (Y) → Doctor Home [Dashboard]
If Login Success → (N) → back to Login with OTP

Doctor Home [Dashboard] branches to:
- Enter New offer for Rent
- View Best Match Offer
- My Profile
- Report
- Logout

Enter New offer for Rent → Save →
- Partial Book [Show interest]
- Alert to buyer Doctor
- If Buyer Approved

View Best Match Offer → Alert to buyer Doctor

My Profile → Update → If Buyer Approved

If Buyer Approved → Final Booked Call

Report →
- My Offer
- Interested Doc List
- All Offer for Best Match

Logout → Logout

Flow diagram [Buyer Doctor]

```
[Doctor] → [Visit Portal] → [Do Registration with Basic Info] → [Login with OTP]
                                                                        │
                                                                        ▼
                                                              [If Login Success]
                                                               Y ←          → N
                                                                │
                                                                ▼
[Doctor Home [Dashboard]]
        │
  ┌─────┼──────────┬──────────────┬─────────────┐
  ▼     ▼          ▼              ▼             ▼
[Enter New    [View Best    [My Profile]    [Report]    [Logout]
offer to      Match
Buy Doc]      Offer]
  │               │              │              │             │
  ▼ Save          │              ▼ Update       │             ▼ Logout
                  │                             │
[Partial Book   [Alert to Offer   [If Offer Doc    [My Offer]  [Interested   [All Offer
[Show interest]  Doctor]           Approved]                    Doc List]     for Best
                                      │                                       Match]
                                      ▼
                                  [Final Booked Call]
```

System Design Consideration

We Can Develop Doctor Practice Management System[DPMS] using following technology

- MS Dot Net Framework
- Visual Studio as IDE
- ASP.Net Using C# Language
- Apply Bootstrap Theme for design
- MS-SQL Server as backend database.

I preferred these technologies because i have done lot of projects with same so based on this experienced i can complete this project with less time and better quality.

Also i am familiar with current market technology trend so based on that we can also use below technology stack.

- Angular / React JS (SPA)
- Visual Studio / Visual Studio Code as IDE
- MicroServices using Asp.Net Core
- MS-SQL Server as a backend database or NoSQL (MongoDB)

    We can use these latest technology to improve performance, reliability & Scalability of application

Database Design

We can make following tables in Database for design this system

- tbl_Doctor Master(Doctor Registration)
- tbl_Degree Master
- tbl_Speciality Master
- tbl_StateMaster
- tbl_DistMaster
- tbl_CityMaster
- tbl_Offertransaction
- tbl_Offertranslog
- tbl_AdminLogin
- tbl_Log

Note -

For making CRUD operation on these tables we can write multiple queries in Stored procedures.

tbl_DoctorMaster

Field Name	Datatype	Key	Field Name	Datatype	Key
Doc_Id	numeric	PK	EmailId	varchar	
DocName	varchar		EXPYears	Double	
Gender	char		ClinicName	varchar	
Degree_Id	numeric	FK	ClinicPhone	numeric	
Speciality_Id	numeric	FK	RegistrationNo	varchar	
Address	varchar		CreatedOn	DateTime	
State_Id	numeric	FK	CreatedBy	numeric	
Dist_Id	numeric	FK	ModifyOn	DateTime	
City_Id	numeric	Fk	ModifyBy	numeric	
Pincode	varchar		IsActive	varchar	
MobileNo	numeric		OTP	varchar	

tbl_DegreeMaster

Field Name	Datatype	Key
Degree_Id	numeric	PK
Degree	varchar	
CreatedOn	DateTime	
CreatedBy	numeric	
ModifyOn	DateTime	
ModifyBy	numeric	
IsActive	varchar	

tbl_SpecialityMaster

Field Name	Datatype	Key
Speciality_Id	numeric	PK
Speciality	varchar	
CreatedOn	DateTime	
CreatedBy	numeric	
ModifyOn	DateTime	
ModifyBy	numeric	
IsActive	varchar	

tbl_StateMaster

Field Name	Datatype	Key
State_Id	numeric	PK
State	varchar	
CreatedOn	DateTime	
CreatedBy	numeric	
ModifyOn	DateTime	
ModifyBy	numeric	
IsActive	varchar	

tbl_DistMaster

Field Name	Datatype	Key
Dist_Id	numeric	PK
Dist	varchar	
State_Id	numeric	FK
CreatedOn	DateTime	
CreatedBy	numeric	
ModifyOn	DateTime	
ModifyBy	numeric	
IsActive	varchar	

tbl_CityMaster

Field Name	Datatype	Key
City_Id	numeric	PK
City	varchar	
State_Id	numeric	FK
Dist_Id	numeric	FK
CreatedOn	DateTime	
CreatedBy	numeric	
ModifyOn	DateTime	
ModifyBy	numeric	
IsActive	varchar	

tbl_Log

Field Name	Datatype	Key
Log_Id	numeric	PK
Doc_id	numeric	FK
LoginTime	DateTime	
LogoutTime	DateTime	
CreatedOn	DateTime	
CreatedBy	numeric	

tbl_OfferTransaction

Field Name	Datatype	Key	Field Name	Datatype	Key
Offer_Id	numeric	PK	FromDate	Date	
FDoc_Id	numeric	FK	ToDate	Date	
OfferType	varchar		Min Price	Double	
Address	varchar		Max Price	Double	
State_Id	numeric	FK	OfferStatus	varchar	
Dist_Id	numeric	FK	TDoc_id	Numeric	FK
City_Id	numeric	Fk	CreatedBy	numeric	
PinCode	varchar		ModifyOn	DateTime	
Degree_Id	numeric	FK	ModifyBy	numeric	
Speciality_Id	numeric	FK	IsActive	varchar	
NoOfDay	numeric				

tbl_OfferTranslog

Field Name	Datatype	Key
OfferTrans_Id	numeric	PK
Offer_Id	Numeric	FK
TDoc_Id	numeric	FK
Status	varchar	
CreatedOn	DateTime	
CreatedBy	numeric	
ModifyOn	DateTime	
ModifyBy	numeric	

tbl_AdminLogin

Field Name	Datatype	Key
Admin_Id	numeric	PK
Username	Varchar	
Password	varchar	

LOGO

DPMS Main Screen

Menu

| Doctor Registration | Doctor Login | About Us | Contact Us | Admin Login |

| Doctor With Us 12505 | Total Offer Upto 1234567 | Best Match upto 2345 | Active Offer 450 |

Info Alert

Here we can put Basic Information about this system.
How we can help to find best match Offer Practice with Buyer Doctor.
OR
Any Dynamic data we want to show

@ABC Company

Doctor Registration

Doctor Name :

Gender : ◯ **M**   ◯ **F**   **Year of Exp :**

Degree : ▼   **Speciality :** ▼   Select Speciality from Dropdown

Address :

State : ▼   **Dist :** ▼

City : ▼   **Pincode :**

Mobile :   **Email :**

Clinic Name :   **Clinic Address:**

Registration No :

Save

After Registration show popup please login with your registered mobile no to access your offers

LOGO

Doctor Login

Enter Registered Mobile no

Get OTP

If Entered Mobile no Matched with Registered Mobile then OTP send & stored in table for validation

Enter OTP

If Entered OTP Matched then Login success & send user to Home Page. Here if required We can use captcha also for better security

Login

Click on login button to login

Doctor Home[Dashboard]

Enter New Offer

Menu

View Best Match

My Profile

My Offer

Interested Doc List

Total Offer	Best Match	Interested Doc
25	12	4

Top 5 Best match offer

SN	Doc	Mobile	Date	Rate	Action	Status
1	ABC	8181818181	1st-5th May	1000-1200	Book	Open
2	PQR	8181818181	1st-5th May	800-1200	Book	Approved

After Approved Color Change

@ABC Company

Last login → 01/05/2021 10.30 a.m

Offer Entry

Offer Type : ▼   Rent Practice
Buy Doctor

Address :

State : ▼   **Dist :** ▼

City : ▼   **Pincode :**

Degree : ▼   **Speciality :** ▼

From Date :   **To Date :**

No.of Day :   **Min price:**

Max price :   **Status :** ▼

Save   **Update**

Best Match Offer Report

Filters -

State   ALL ▼
Dist   ALL ▼
City   ALL ▼
Pincode [   ]
Speciality ALL ▼
Degree ALL ▼

Date [FD] [TD]

Rate Range
100   2000

@ABC Company

Status | Search

SN	Doc	Mobile	Date	Rate	Action	Status
1	ABC	8181818181	1st-5th May	1000-1200	**Book**	Open
2	PQR	8181818181	1st-5th May	800-1200	**Book**	Approved

After Approved Color Change

Export

My Profile

Doctor Name : Vishal joshi

Gender : ● M ○ F   **Year of Exp :** 10

Degree : MBBS ▼   **Speciality :** Cataract ▼ ← Select Speciality from Dropdown

Address : Savedi

State : MH ▼   **Dist :** Ahmednagar ▼

City : Nagar ▼   **Pincode :** 414001

Mobile : 8149184810   **Email :** joshivishal80@yahoo.in

Clinic Name : ABC Clinic   **Clinic Address:** Delhigate, A.nagar

Registration No : 445677

Update ← For update doctor profile

@ABC Company

My Offer

From Date FD   **To Date** TD   Ok

SN	Type	Date	Rate	Buyer Doc	Status	Edit
1	ABC	1st-5th May	1000-1200	Vishal	Open	Edit
2	PQR	1st-5th May	800-1200	Kiran	Approved	Edit

Not Editable after Approved

Export

@ABC Company

Interested Doctor List

From Date FD   **To Date** TD   Ok

SN	Doc	Mobile	Date	Rate	Action
1	ABC	8181818181	1st-5th May	1000-1200	Approve
2	PQR	8181818181	1st-5th May	800-1200	Approve

Export

@ABC Company

LOGO

Admin Login

Enter Username

Enter Password

If login success then goto admin dashboard

Login

Click on login button to login

LOGO

LOGOUT

Menu

| State Master | District Master | City Master | Degree Master | Speciality Master |

Doctor With Us
12505

Total Offer Upto
1234567

Best Match upto
2345

Active Offer
450

Info Alert

Here we can show MIS Reports
OR
Any Dynamic data we want to show

@ABC Company

Degree Master

Degree :

IsActive : ● **A**ctive   ○ **Deactive**

Save   **Update**   **cancel**

SN	Degree	Status	Edit	Deactive
1	MBBS	Active	**Edit**	**Deactive**
2	BHMS	Deactive	**Edit**	**Deactive**

@ABC Company

Master Forms

SIMILARLY **OTHER MASTER DATA** ENTRY FORMS WILL WORK

- ○ State Master
- ○ District Master
- ○ City Master
- ○ Speciality Master

API Integration

We can create Web API with the help of below controllers

o **Doctor Controller -**
We can Expose all the functionality of doctor with the help of doctor controller Eg - CRUD operations

o **Offer Controller -**
We can Expose all the functionality of Offer with the help of Offer controller
Eg - To find best match

o **Location Controller -**
We can Expose all the functionality of Location with the help of Location controller
Eg - in filter operations

Algorithm to find best match Offer Practice with Buyer Doctor

We can find Best match using multiple ways. Here we can consider 2 ways

   1) Using Code side Filter on Dataset or datatable -
If we consider code side then it is fast execution but less secure

   2) Using SQL Algorithmic / Dynamic SQL query -
If we consider SQL Algorithmic then it is slower execution as compared with code side but more secured.

We can go with 2nd(I.e SQL Algorithmic) because it is very secure & dynamic.

So let's start sql algorithmic analysis from next slide

SQL Algorithm for find Best Match

For this we create dynamic sql where condition to filtered out best match.

Let's consider sample query for getting all offers is

(Required Column)   (This where condition is dynamic as follows)

Select * from tbl_Offer @SQL_where

DEClare @where1 VARCHAR(max)

DECLARE @SQL_where VARCHAR(max)

set @where1= ' Where '

set @SQL_where = @where1+' '+ Status = '%@Status%'

(Syntax might not correct please consider only where value for filter)

1) If(@state = 'ALL') then @SQL_where else SET @SQL_where = StateId = '1'

2) If(@Dist = 'ALL') then @SQL_where else SET @SQL_where = @SQL_where +' '+ DistId = '1'

3) If(@City = 'ALL') then @SQL_where else SET @SQL_where = @SQL_where +' '+ CityId = '1'

4) If(@Pincode = NULL) then @SQL_where else SET @SQL_where = @SQL_where +' '+ Pincode = '123'

5) If(@Degree = 'ALL') then @SQL_where else SET @SQL_where = @SQL_where +' '+ DegreeId = '12'

6) If(@Speciality = 'ALL') then @SQL_where else SET @SQL_where = @SQL_where +' '+ SpecialityId = '123'

7) If(@FromDate = NULL && @ToDate = NULL) then @SQL_where else SET @SQL_where = @SQL_where +' '+ FromDate >= '05/01/2021' and ToDate <= '05/05/2021'

8) If(@MinRate = NULL && @Max = NULL) then @SQL_where else SET @SQL_where = @SQL_where +' '+ MinRate => '100' and MaxRate <= '2000'

Final Query with all filter for finding best match might be like as -

Select * from tbl_offer where Status = 'ALL' and StateId = '1' and DistId = '1' and CityId = '1' and Pincode = '1234' and @DegreeId='1' and @SpecialityId = '1' and FromDT >= '05/01/2021' and ToDT <= '05/05/2021' and MinRate >= '100' and MaxRate <='2000'

Thank You