**Solution Development Plan**

Solution: PatientAppointment

Owner: JKim

Date: 12/08/2018

Change Log

|  |  |  |
| --- | --- | --- |
| Who | When | What |
| Jong Tai Kim | 12/08/2018 | Create the Solution Development Plan |
| Jong Tai Kim | 12/09/2018 | Change some documentation |

# **Summary**

The Clinic wants a data solution that will provide help track appointments for their patients.

# **Expectations**

1. The solution will store and present verified data.
2. The solution will allow for simple ad hoc queries.
3. The solution must include reports and a data entry application that is easy to use.
4. The solution should be simple to keep development and maintenance costs at a minimum.
5. A working prototype should be available in a short period of time.

OpenIssues

|  |  |  |
| --- | --- | --- |
| Who | When | What |
| Jong Tai Kim | 12/09/2018 | Reporting Objects (Excel Report) Issue |
|  |  |  |

Closed Issues

|  |  |  |
| --- | --- | --- |
| Who | When | What |
| Jong Tai Kim | 12/09/2018 | Reporting Objects Issue is solved |
|  |  |  |

# **Solution Naming Conventions**

## *Database (SQL Server)*

|  |  |  |  |
| --- | --- | --- | --- |
| Object Type | Convention | Example | Description |
| Table | TableName | Patients | A table used to hold data |
| View | vTableName | vPatients | A saved select statement that presents data |
| Stored Procedure | pTransactionTableName | pInsPatients | A set of saved statements that process data |
| Function | fDescriptionOfResult | fLookMaxIDInTable | A saved select statement that provides data |

## *ETL Processing Objects*

|  |  |  |  |
| --- | --- | --- | --- |
| Object Type | Convention | Example | Description |
| Table | ETLTableNameStaging | ETLPatientsStaging | Table used to hold staging data |
| View | vETLTableName | vPatients | View with transformation logic |
| Stored Procedure | pETLDescription | pETLFillPatients | Procedure with processing and transformation logic |
| Function | fETLDescriptionOfResult | fLookMaxIDInTable | Function with transformation logic |

## *Report Objects*

|  |  |  |  |
| --- | --- | --- | --- |
| Object Type | Convention | Example | Description |
| Data Source | ObjectTypeNameOfSource | DataSourceNorthwind | A DataSource that is part on a individual report |
| Report Component | ObjectTypeNameOfSubject | TableOrdersByPatients | A Table like report component |

# Data Objects

This is a list of all the known data objects

## Data Files

### File Name: PatientData.csv

Description: Contains Patient data in a comma separated values format. To be used for importing new data.

## OLTP Database Tables

### Table Name: Patients

Description: Contains Patient data

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Notes |
| PatientID | Int | 1 | Identity |
| PatientFirstName | nvarchar(100) | Bill |  |
| PatientLastName | nvarchar(100) | Smith |  |
| PatientPhoneNumber | nvarchar(100) | 425-577-1000 | Check to match Phone pattern xxx-xxx-xxxx |
| PatientAddress | nvarchar(100) | 1111 11th St. |  |
| PatientCity | nvarchar(100) | Seattle |  |
| PatientState | nvarchar(2) | WA |  |
| PatientZipCode | nvarchar(10) | 98105 | Check to match ZipCodecode pattern |

Constraints

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Column Name | Primary Key | Foreign Key | Not Null | Check | Unique | Default |
| PatientID | Yes | No | Yes | No | Yes | Yes |
| PatientFirstName | No | No | Yes | No | No | No |
| PatientLastName | No | No | Yes | No | No | No |
| PatientPhoneNumber | No | No | Yes | Yes | No | No |
| PatientAddress | No | No | Yes | No | No | No |
| PatientCity | No | No | Yes | No | No | No |
| PatientState | No | No | Yes | No | No | No |
| PatientZipCode | No | No | Yes | Yes | No | No |

### Table Name: Clinics

Description: Contains Clinic data

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Notes |
| ClinicID | Int | 1 | Identity |
| ClinicName | nvarchar(100) | Mental Clinic | Unique |
| ClinicPhoneNumber | nvarchar(100) | 425-577-1000 | Check to match Phone pattern xxx-xxx-xxxx |
| ClinicAddress | nvarchar(100) | 1111 11th St. |  |
| ClinicCity | nvarchar(100) | Seattle |  |
| ClinicState | nvarchar(2) | WA |  |
| ClinicZipCode | nvarchar(10) | 98105 | Check to match ZipCodecode pattern |

Constraints

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Column Name | Primary Key | Foreign Key | Not Null | Check | Unique | Default |
| ClinicID | Yes | No | Yes | No | Yes | Yes |
| ClinicName | No | No | Yes | No | Yes | No |
| ClinicPhoneNumber | No | No | Yes | Yes | No | No |
| ClinicAddress | No | No | Yes | No | No | No |
| ClinicCity | No | No | Yes | No | No | No |
| ClinicState | No | No | Yes | No | No | No |
| ClinicZipCode | No | No | Yes | Yes | No | No |

### Table Name: Doctors

Description: Contains Doctor data

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Notes |
| DoctorID | Int | 1 | Identity |
| DoctorFirstName | nvarchar(100) | Bill |  |
| DoctorLastName | nvarchar(100) | Smith |  |
| DoctorPhoneNumber | nvarchar(100) | 425-577-1000 | Check to match Phone pattern xxx-xxx-xxxx |
| DoctorAddress | nvarchar(100) | 1111 11th St. |  |
| DoctorCity | nvarchar(100) | Seattle |  |
| DoctorState | nvarchar(2) | WA |  |
| DoctorZipCode | nvarchar(10) | 98105 | Check to match ZipCodecode pattern |

Constraints

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Column Name | Primary Key | Foreign Key | Not Null | Check | Unique | Default |
| DoctorID | Yes | No | Yes | No | Yes | Yes |
| DoctorFirstName | No | No | Yes | No | No | No |
| DoctorLastName | No | No | Yes | No | No | No |
| DoctorPhoneNumber | No | No | Yes | Yes | No | No |
| DoctorAddress | No | No | Yes | No | No | No |
| DoctorCity | No | No | Yes | No | No | No |
| DoctorState | No | No | Yes | No | No | No |
| DoctorZipCode | No | No | Yes | Yes | No | No |

### Table Name: Appointments

Description: Contains Appointment data

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Notes |
| AppointmentID | Int | 1 | Identity |
| PatientID | Int | 1 | From Patients Table |
| ClinicID | Int | 1 | From Clinics Table |
| DoctorID | Int | 1 | From Doctor Table |
| AppointmentDateTime | Datetime | 2018-10-11 12:00 |  |

Constraints

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Column Name | Primary Key | Foreign Key | Not Null | Check | Unique | Default |
| AppointmentID | Yes | No | Yes | No | Yes | Yes |
| PatientID | No | Yes | Yes | No | No | No |
| ClinicID | No | Yes | Yes | No | No | No |
| DoctorID | No | Yes | Yes | No | No | No |
| AppointmentDateTime | No | No | Yes | No | No | No |

## *OLTP Views*

### View Name: vPatients

Description: Abstracts data from the Patients table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Notes |
| PatientID | Int | 1 |  |
| PatientFirstName | nvarchar(100) | Bill |  |
| PatientLastName | nvarchar(100) | Smith |  |
| PatientPhoneNumber | nvarchar(100) | 425-577-1000 |  |
| PatientAddress | nvarchar(100) | 1111 11th St. |  |
| PatientCity | nvarchar(100) | Seattle |  |
| PatientState | nvarchar(2) | WA |  |
| PatientZipCode | nvarchar(10) | 98105 |  |

### View Name: vClinics

Description: Abstracts data from the Clinics table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Notes |
| ClinicID | Int | 1 |  |
| ClinicName | nvarchar(100) | Mental Clinic |  |
| ClinicPhoneNumber | nvarchar(100) | 425-577-1000 |  |
| ClinicAddress | nvarchar(100) | 1111 11th St. |  |
| ClinicCity | nvarchar(100) | Seattle |  |
| ClinicState | nvarchar(2) | WA |  |
| ClinicZipCode | nvarchar(10) | 98105 |  |
| Column Name | Data Type | Example |  |

### View Name: vDoctors

Description: Abstracts data from the Doctors table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Notes |
| DoctorID | Int | 1 |  |
| DoctorFirstName | nvarchar(100) | Bill |  |
| DoctorLastName | nvarchar(100) | Smith |  |
| DoctorPhoneNumber | nvarchar(100) | 425-577-1000 |  |
| DoctorAddress | nvarchar(100) | 1111 11th St. |  |
| DoctorCity | nvarchar(100) | Seattle |  |
| DoctorState | nvarchar(2) | WA |  |
| DoctorZipCode | nvarchar(10) | 98105 |  |

### View Name: vAppointments

Description: Abstracts data from the Patients table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Notes |
| AppointmentID | Int | 1 |  |
| PatientID | Int | 1 |  |
| ClinicID | Int | 1 |  |
| DoctorID | Int | 1 |  |
| AppointmentDateTime | Datetime | 2018-10-11 12:00 |  |

## *OLTP Stored Procedures*

### Procedure Name: pInsPatients

Description: Abstracts data inserts for the Patients table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Direction |
| PatientID | Int | @NewPatientID | Output |
| PatientFirstName | nvarchar(100) | Bill | Input |
| PatientLastName | nvarchar(100) | Smith | Input |
| PatientPhoneNumber | nvarchar(100) | 425-577-1000 | Input |
| PatientAddress | nvarchar(100) | 1111 11th St. | Input |
| PatientCity | nvarchar(100) | Seattle | Input |
| PatientState | nvarchar(2) | WA | Input |
| PatientZipCode | nvarchar(10) | 98105 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pUpdPatients

Description: Abstracts data updates for the Patients table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Direction |
| PatientID | Int | 1 | Input |
| PatientFirstName | nvarchar(100) | Bill | Input |
| PatientLastName | nvarchar(100) | Smith | Input |
| PatientPhoneNumber | nvarchar(100) | 425-577-1000 | Input |
| PatientAddress | nvarchar(100) | 1111 11th St. | Input |
| PatientCity | nvarchar(100) | Seattle | Input |
| PatientState | nvarchar(2) | WA | Input |
| PatientZipCode | nvarchar(10) | 98105 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pDelPatients

Description: Abstracts data deletes for the Patients table

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Name | Data Type | Example | Direction |
| PatientID | Int | 1 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pInsClinics

Description: Abstracts data inserts for the Clinics table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Direction |
| ClinicID | Int | @NewClinicID | Output |
| ClinicName | nvarchar(100) | Mental Clinic | Input |
| ClinicPhoneNumber | nvarchar(100) | 425-577-1000 | Input |
| ClinicAddress | nvarchar(100) | 1111 11th St. | Input |
| ClinicCity | nvarchar(100) | Seattle | Input |
| ClinicState | nvarchar(2) | WA | Input |
| ClinicZipCode | nvarchar(10) | 98105 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pUpdClinics

Description: Abstracts data updates for the Clinics table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Direction |
| ClinicID | Int | 1 | Input |
| ClinicName | nvarchar(100) | Mental Clinic | Input |
| ClinicPhoneNumber | nvarchar(100) | 425-577-1000 | Input |
| ClinicAddress | nvarchar(100) | 1111 11th St. | Input |
| ClinicCity | nvarchar(100) | Seattle | Input |
| ClinicState | nvarchar(2) | WA | Input |
| ClinicZipCode | nvarchar(10) | 98105 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pDelClinics

Description: Abstracts data deletes for the Clinics table

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Name | Data Type | Example | Direction |
| ClinicID | Int | 1 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pInsDoctors

Description: Abstracts data inserts for the Doctors table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Direction |
| DoctorID | Int | @NewDoctorID | Output |
| DoctorFirstName | nvarchar(100) | Bill | Input |
| DoctorLastName | nvarchar(100) | Smith | Input |
| DoctorPhoneNumber | nvarchar(100) | 425-577-1000 | Input |
| DoctorAddress | nvarchar(100) | 1111 11th St. | Input |
| DoctorCity | nvarchar(100) | Seattle | Input |
| DoctorState | nvarchar(2) | WA | Input |
| DoctorZipCode | nvarchar(10) | 98105 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pUpdDoctors

Description: Abstracts data updates for the Doctors table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Direction |
| DoctorID | Int | 1 | Input |
| DoctorFirstName | nvarchar(100) | Bill | Input |
| DoctorLastName | nvarchar(100) | Smith | Input |
| DoctorPhoneNumber | nvarchar(100) | 425-577-1000 | Input |
| DoctorAddress | nvarchar(100) | 1111 11th St. | Input |
| DoctorCity | nvarchar(100) | Seattle | Input |
| DoctorState | nvarchar(2) | WA | Input |
| DoctorZipCode | nvarchar(10) | 98105 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pDelDoctors

Description: Abstracts data deletes for the Doctors table

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Name | Data Type | Example | Direction |
| DoctorID | Int | 1 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pInsAppointments

Description: Abstracts data inserts for the Appointments table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Direction |
| AppointmentID | Int | @NewAppointmentID | Output |
| PatientID | Int | 1 | Input |
| ClinicID | Int | 1 | Input |
| DoctorID | Int | 1 | Input |
| AppointmentDateTime | Datetime | 2018-10-11 12:00 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pUpdAppointments

Description: Abstracts data updates for the Appointments table

|  |  |  |  |
| --- | --- | --- | --- |
| Column Name | Data Type | Example | Direction |
| AppointmentID | Int | 1 | Input |
| PatientID | Int | 1 | Input |
| ClinicID | Int | 1 | Input |
| DoctorID | Int | 1 | Input |
| AppointmentDateTime | Datetime | 2018-10-11 12:00 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

### Procedure Name: pDelAppointments

Description: Abstracts data deletes for the Appointments table

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Name | Data Type | Example | Direction |
| AppointmentID | Int | 1 | Input |

Return Codes:

1 = Insert succeeded

-1 = Insert failed

## *OLTP Functions*

None required

# **ETL Objects**

This is a list of all the known ETL objects

## *ETL Staging Tables*

None required

## *ETL Views*

None required

## *ETL Stored Procedures*

None required

## *ETL Functions*

None required

# Reporting Objects

This is a list of all the known Report objects

## Excel Reports

### Report Name: ExcelReport\_PatientAppointments\_JongTaiKim.xlsx

Description: Contains Patient sales data

|  |  |  |
| --- | --- | --- |
| Column | Example | Description |
| Patients Doctors Appointments | “Bill Smith” – “Sarah Thompson” – “2018-12-09 10:30” (the entry value indicates 1) | Consist of Patient name (row), Doctor Name (column) and Appointment Date and time (row) |
| Patients Clinics Appointments | “Bill Smith” – “Mental Clinic” – “2018-12-09 10:30” (the entry value says 1) | Consist of Patient name (row), Clinic Name (column) and Appointment Date (row) |

## Reporting Server Reports

None Required

## Power BI Reports

### Report Name: PowerBIReport\_PatientAppointments\_JongTaiKim.pbi

Description: Contains Patient sales data

|  |  |  |
| --- | --- | --- |
| Column | Example | Description |
| Schedule of Patients and Doctor | “Bill Smith” – “Sarah Thompson” (The entry value is “2018-12-09”) | Consist of Patient Name (Row) and Doctor Name (Column) and Appointment Date (value) |
| Schedule of Patients and Clinic | “Bill Smith” – “Mental Clinic” (The entry value is “2018-12-09”) | Consist of Patient Name (Row) and Clinic Name (Column) and Appointment Date (value) |
| Clinic Map | Map of Clinic’s Location | Presents location of each clinic |

## Tableau Reports

### Report Name: TableauReport\_PatientAppointments\_JongTaiKim.pbi

Description: Contains Patient appointments data

|  |  |  |
| --- | --- | --- |
| Column | Example | Description |
| Schedule of Patients and Doctors and Clinics | “Bill Smith” – “Sarah Thompson” – “Mental Clinic” – “2018-12-09 10:30” (The entry value is 1) | Consist of Patient Name (Row) and Doctor Name (row), Clinic Name (row) and Appointment Date (column), time (column) |
| Clinic Map | Map of Clinic’s Location | Presents location of each clinic |