The DENTIST - OFFICE MANAGEMENT DENTAL SOFTWARE

Welcome to the world of “THE DENTIST”, a complete dental management software tool for dental offices in India. The software has been developed in Visual Basic 2012 and has been designed for the current Windows 7 environment and for the upcoming Windows 8 Operating system. Future versions will also include options for accessing parts of the data with an Android tablet or with a browser.

This system has been specifically designed with the principle of maintaining the data of the dental office on a local machine as either a stand alone unit or a LAN server for the internal office. The philosophy of cloud computing has not been used since the concept of cloud computing is not really applicable for individual dental offices and the top priority is of data security as well as instant and fast access.

The entire data (barring the pictures) are stored in two “mdb” files which hold all the necessary tables for the software. Backing up the core data is as simple a task as making a copy of these two files. These two files have to be available in a folder and it serves as the data folder for the user on the computer. If another terminal has to access this data across the LAN it is a simple task of assigning the main data folder as a mapped drive for the other users.

The software is extremely simple to use and extremely intuitive. It is strongly advised to read the initial start up walk through to enable the dental office to easily get the system started and working. Just the start up should be sufficient for most experienced computer users to effectively start using the software. Of course details of all the options are available on this soft copy and can be used as a reference for detailed information.

Installing “THE DENTIST”

As mentioned earlier the software has been designed in Visual Basic 2012 which requires the Dot Net framework to be available along with Windows. Please follow the listed steps to ensure simple and smooth installation of the dental software.

Pre Installation sequence

1. Install Dotnet framework 4.5. (This is a free download from Microsoft and is a 46 MB file. After downloading it takes about 5 yo 6 minutes to install)

2. Run Reportview.exe to enable reports on the Dental Software. (This is a free download from Microsoft and is about 4 MB. This takes about 2 minutes install)

3. Install SMSCountry\_com\_object.exe for functioning of the SMS feature. BITEIN has an arrangement with SMS country for sending SMS from within the software. This file has to be installed for enabling the SMS feature. This is a free file available from [www.smscountry.com](http://www.smscountry.com) This takes about 2 minutes to install.

The above 3 are the Operating system prerequisites for effective functioning of the dental software. The above 3 steps have to be followed only once. They do not have to be repeated if an upgrade version of the dental software is being installed. Once the above 4 steps are completed please continue with the Setup process.

Installing “The Dentist”

The software can be directly installed from a CD/Flash drive or the entire setup can be copied to any folder on the hard disk and the installation procedure initiated. Installing is a simple matter of copying the dp2012.exe file on the hard disk of the computer. It is technically possible to run this exe file directly from a CD or a flash drive but it is not recommended. It is a good idea to create a desktop shortcut to the exe file and also include it in the Startup program list. The folder called “dch” which contains approximately 1400 files has to be also copied to the data folder once it has been created. This is mentioned in detail in the section on the Start Up Walkthrough.

**Start Up Walkthrough**

The Dentist software requires some basic data to be updated in a sequential and appropriate fashion to enable the proper usage and also to ensure proper functionality of all the features of the software. Even though the final objective can be achieved in a variety of sequences,

*Data Location*

One the software has been installed a data folder has to be identified. The data folder can be any folder sitting on either a local hard drive or a mapped hard drive on a LAN setup. It is suggested that this folder be named “Dentaldata”. Of course, it could have any valid Windows folder name if so desired. Naming it “Dentaldata” will make it a bit easier in case any debugging support is required in the future. Copy the two “mdb” files names dentalrecords2012.mdb and denappt.mdb to this created folder. These files will have been supplied on the CD/Flash drive on which the setup software was delivered.

The dental chart images have to be also copied to the same folder. These files are in a folder on the CD/Flash drive on the subfolder “dch”. The same subfolder has to be copied to the data folder. The suggested folder is “Dentadata”. The subfolder name “dch” cannot be changed.

In case this installation is being done as an upgrade to the previous version of “The Dentist” all the existing data can be ported to the new software with six clicks of the mouse. Fast forward to the “Porting previous data” section to read on about how the porting can be done. If this is a first time installation proceed with the walk through.

There are a few basic data items that are necessary to enable the patient management system to be appropriately functional. The software can be started by either clicking on the Desktop Icon or selecting it from the Program Files from the Windows Startup button. As soon as the software boots up, the user will be prompted to select the drive and folder where the data is stored. This will be the same folder as explained in the previous paragraphs in this section. It should hold the two “mdb” files which have the tables where all the dental office data is stored.

The selected folder and the path is always displayed on the top right border of the main screen window of the software. There are two basic sets of information that have to be keyed in to get all the data tables to be completely functional. One set is related to the appointment system while the other set is related to the patient management and inventory system of the dental office. Both shall be now dealt with sequentially.

*Appointment Calendar Walk Through*

The opening screen has a number of panels which will take the user to the relevant windows. Clicking on the large “Appointment” panel will open the digital appointment diary. Prior to doing this it is important to set up the Appointment Slots as well as the Operators (Dentists operating from the office) list. At the bottom of the vertical Appointment panel on the right side are two options a) Doctors and b) Appt Slots. Clicking on the first option will open a window which allows the updating of the Dentists/Operators for whom appointments are made in the dental office.

It is very important to understand the importance of the sequence of operators that are entered here. The first Dentist/Operator record added will be the primary dentist of the office. The software has a very powerful feature of appointment reminders for the patient as well as the operators via SMS and Email. The primary dentist/operator has the additional option to receive a SMS/Email detailing the appointment schedule of the other dentists in the office. This option is only available for the primary Dentist/Operator. Hence it is imperative that the first Dentist/Operator details that are entered should be of the primary operator of the dental office. The window is titled “Doctors Master Panel” and the doctors name, mobile number and Email ID has to be entered. There are two check boxes available below the three fields for data. The first one indicates if the primary doctor should be sent SMS reminders on the daily patient schedule. Checking the second box will enable the primary doctor to also receive a copy of the patient schedule of the other doctors for whom appointments have been made. A total of 12 doctors can be created for a single dental office.

The window has a strip at the top which allows movement between entered records and also to create a new record, edit or delete an existing record and save any additions, modifications of deletions. This is a standard windows style strip and is also used in a few other data entry panels in the software. To add a doctor the yellow colored “plus” icon has to be clicked. On clicking this symbol a new blank record set is created and data can be entered into the three fields and two check boxes can be enabled or disabled. Once the data has been entered the last icon represented by the standard windows “save” image of a disk has to be clicked. On clicking this option a message box will be displayed indicating that the data has been saved. A click on the box will send control back to the doctors master panel window. A total of 12 doctors can be entered. If by any chance more records get added, they will be ignored. In case any data of an already created dentist has to be modified, the record can be accessed by clicking on the right or left arrows which moves the current record between the total of 12 records.

Please note that the maximum length of the doctors name is 30 characters. The mobile number that is entered will be used to send the SMS. Only the valid mobile number should be entered without any of the area code. Only the 10 digit number should be entered. A valid Email ID should be entered to enable Email messaging to function properly.

Once the doctors master has been created the next step is to create the appointment slots. This window will pop up on clicking the “Appt Slots” box on the bottom of the vertical Appointments Panel. The window is titled “Appointments Slot Setup”. This window will allow setting of the appointment slots. There is a default setting available and these slots can be modified to suit the official timings of the dental office. The large save panel has to be click to save the changes made.

*General Information Walk Through*

This completes the basic set up to be done for the Appointments part of the software. The next aspect that has to be created is the basic master information required for the patient management as well as the inventory control and billing etc. Out of all the available tabs there are two in the middle bottom which are important at this point of time. One is to update some “General Information” and the other is to set up the SMS and EMAIL accounts. Clicking on the Gen Info panel will open up a window with the heading showing “General Information Panel”. The dental office address is stored and the entire lot of Printing controls are set from this window. There are five different kinds of documents that the software can generate via a printer. These are i) Invoices ii) Receipts iii) General Reports iv) Prescriptions and v) Lab Notes. All these five reports may be printed either on a similar size and style of stationery or on different stationery for eg. the standard report might be printed on a blank sheet which the Invoice could be printed on a letter head and the prescriptions may be printed on a small letter head.

There are setting options available for each of these five kind of printing formats. The setting option is essentially the top and the left margin. A value can be set for each of these top and left margins in terms of pixels. A little bit of trial and error with sample prints is generally required to freeze this value. A simple way of calculation is to put 30 points for each cm of space in either of the margins. In addition to the top and left margins, the Invoice Series number can also be set. This is a fixed length and value, maximum five digit prefix for the Invoices. The Invoice number is and incremental self generated entity with the seed value which can be set in this window.

SMS/Email Walk Through

This window will open up on a click from the SMS/Email button adjacent to the General Information button. In this window the SMS account as well as the Email server details which will be used by the software, have to be set up.

“The Dentist” has an extremely powerful and robust digital appointment set up feature. Appointments can be given for upto three chairs across a maximum of 12 dentists/operators. These can be done for 20 slots every day for each of the three chairs. The appointment scheduler is color coded for ease of understanding and all details on its usage are presented in the Appointments section. The appointment scheduler as well as a number of other features in the software are linked with an SMS service as well as an Email service. The office has the option to use these features. If the SMS service or an Email service will be used then the basic setup has to be done from this window. A basic prerequisite for using either of these services is that the computer system has to be connected to the Internet. The SMS as well as the Email is sent via the internet. It has to be noted that the SMS service is also only through the net and cannot be routed via a mobile phone or by using an additional SIM card.

The SMS service is provided via a tie up with SMSCOUNTRY which provides SMS facilities. The dental office will have to get in touch with SMSCOUNTRY and purchase an account. The procedure is extremely simple and just requires an online application along with support documents as specified by SMS country. The company will provide an Account Name and a password. As was mentioned in the initial setup procedure, the third party library from SMS Country has to be installed to make it possible for the SMS to be sent out from the dental software. This has to be done just once prior to or even after the dental software has been installed.

The User Name and Password supplied by SMS Country has to be keyed in along with the Validity date. The company provides a one year validity after which a simple renewal has to be done to keep the account active. This window also allows checking of the balance available on the SMS account. A simple click on the “Balance” button provides the balance amount in the box below it.

Email services can also be used be the dental software. This requires four pieces of data, the Email User Account, Email Password, the Email Server ID and the SMTP server ID. The Email User account is a routine standard value and looks like an Email account for eg. [ajay@bitein.com](mailto:ajay@bitein.com). The password is usually supplied by the Email service provider. The Server User ID is also usually like an Email account and more often than not will be the same as the User Name. The last piece of data is the SMTP address and will look like a website address and standardly starts with the word “smtp”. This information has to be obtained from the Email service provider.

Utilities Section

This is the final set up procedure required for the initial Walk Through. This button is on the top right side, just below the Analysis button. Clicking on this button will open up the Utilities Window which is titled as “All Masters Data Panel”. This window allows creation of the various pop up lists which are used by the program. Each of these will be dealt with in detail. Even though this seems like a very simple option, an incorrect set up here can impact the functionality of the software adversely. Even if the functionality is not affected, the reports generated may not be of good value if this setup is not done correctly. This is just a one time process but with an option to enhance and fine tune the information even at a later date.

There are 10 buttons on the right side of this window and these buttons represent various pick up lists which can b created from this option. These are

1. Occupation
2. Health
3. Complaints
4. Work Type
5. Work Description
6. Category
7. Lab Work Types
8. Material Names
9. Keywords

This window functions in the same fashion for all the keywords. This is a single window which allows creations of any of these lists as well as checking and modification or deletion of any of the pick list items. The window has a top strip very similar to the Doctors window strip with icons for navigating between existing records, adding new ones or editing/deleting an existing record and saving any additions or changes made. This window also brings in a new feature of the software which also will be found in various options of the software. The bottom left side has a small box called the “Search Filter” box and it has a yellow input box. All Yellow input boxes in the software are for setting up a filter to the data being accessed. This allows great versatility to the software and makes data retrieval extremely easy.

The basic data for the Masters consists of a Name, a Code and a Description. The Description is use only in the case of the “Work Description” option where it is used as the data pick list. The code defines which pick list the Name will be displayed in. The codes for the various pick lists are as follows

1. Occupation : OCCUP
2. Health : HEALT
3. Complaints : COMPL
4. Work Type : WTYPE
5. Work Description : WDESC
6. Category : CATEG
7. Lab Work Types : LWORK
8. Material Names : INAME
9. Keywords : KEYWO

It is extremely important that these codes be entered properly when a new item is being added to the list. Existing items in a list can be easily filtered by typing the code in the yellow filter box field. Even easier is to just drag and drop the buttons to the search filter box. Click the mouse on any of the buttons on the right side of the window and without releasing the mouse clicker, drag the button to the yellow box. Once on the yellow box the mouse clicker should be released and the yellow input box will get the code of the dragged button. At the same time the data set being displayed in the windows via the navigation bar will be filtered to the code in the search box.

To add a new item to the list just click on the yellow “Plus” icon on the navigation strip on the top and a blank record will be created. Enter the item and the appropriate list code and then click on the “Save” icon (looks like a disc) and the new record will be added to the list. The functionality is the same as all navigation bars in the entire software.

The Occupation List is used as a field when creating a New Patient record. The patient database can then be subsequently searched/filtered on this field. The pick list is available in the Patients Window Panel and also in the Reports section where a filter criteria for the Occupation can be set. The maximum length of the name for items in the Occupation list is 30 characters. This list will always be presented alphabetically.

The next two lists are the “Health” ,“Complaints” and “Category” options. These two are also used in the New Patients master record and can be used in absolutely the same way as the Occupation field. The Patients master table can be filtered on the values entered in these fields. These filters are of good value when analysing the patients reporting to the dental office. The Category list can be very useful to classify patients as “Standard”, “Friends”, “Family”, “Doctors”, “Dentists”. Of course any number of items can be added to this list to give still more detailed information from the Reporting and Analysis sections.

The “Work Type” filter needs very special mention. Even though the functioning of this field is exactly the same as the above, it is used in the Work Done table and not in the Patient Master table. Every work done entry will have a Work Type name to identify the kind of work that has been done. This list if appropriately used, can generate very powerful reports and analysis charts. These reports and graphs can play a very critical element in further expansion and change in working style of the dental office.

The concept of the Work Type Filter is to identify all dental procedures into different types. These procedures can then be selectively analysed and collections and production values can be obtained for each procedure and can also be compared. A basic list of all procedures has already been populated on the startup database at the time of setup. This list has been created after a lot of detailed thought process. It is entirely possible to let this list remain the way it has been created and the patient management system can be initiated. Of course, if any customization is required it is a simple task of either adding more data or modifying/deleting any of the existing work types. It is strongly advised to use this list as the basic core list. A few additions and deletions for customization will make it a very powerful tool for analytic reports.

The Work Description list is the only one from among the available lists which functions differently. This list is not used for generating any analytical reports. It is actually a help for automatically introducing long strings of repeated information while entering the work done for any patient in a sitting. A good example is “root canal biomechanical preparation done. Temporary dressing given.” This is a common string which is used. Instead of typing it every time, it is easier to create this in the Work Description field. A short name can be given which is not used in the actual pickup. While entering the work done, a short cut key will throw up a list of all such description and it get s added automatically to the input box. Any number of such descriptive threads can be created.

The Lab Work Types list is used in the Lab Notes option. Any number of different Lab Work Types can be created. A default list is already available. More can be added or existing ones not in use can be deleted. This will also provide a filter on the Lab Note report.

The Material Names list is used in the inventory section. The inventory section is just a purchases and consumptions data table for the dental office. When creating a record in the Purchases option, the most important field is the Item being purchased. The item is identified on the basis of a 30 character descriptive name. This master allows this kind of list to be created. All instruments, consumable and equipment names should be added to this list.

The final list that is maintained is the Keywords. This is used only as a search reference categorization of digital pictures, radiographs and OPG’s. This list is used only for the associated data files and if there are no such files being maintained there is no requirement for the keywords list. The Keywords list is also pre-set with suggested names based on previous user responses. This iist can be completely customized based on requirements. This list pops up in the Associated Data Files section when a digital picture or radiograph is seen in a full screen mode. It is also available for the Yellow search box in the same section.

This completes the basic setup Walk Through. The software is now set for daily usage for patient data management, appointments, purchases, digital data files, lab notes, prescriptions, recalls and all other aspects and sections of the software.

**Patient Management Section**

This section deals with the core of the Dental Software which is the patient data management. This section has four essential elements available – Family Data, Patient Data, Dental Chart and Work Done. There is also an associated reports section and an analytic available for this data.

*Family Data Panel*

This is the start for any new patient to be added to the dental office database. A single mouse click will activate this section and a window opens up with the header “Family Information Panel”. A family is a grouping of patients who have the same address data. The purpose is to make it possible to send mailers without duplications. The family data holds a family name, a mailing address, land line phone numbers and a details field for any description information, if required, for the family. The family data also computes the total dues for all patients in a family group and the receivable balance for the family.

This window allows creation of new families, modification of existing family data or deletion of an incorrectly entered family. The data entry methodology of this window is a good example of how most of the data is updated in this software. When this window opens up it will have a pink colored background and will have all its fields displayed. The fields will not be enabled for editing and can only be viewed. The pink background is a default background for all windows when they are in only a display mode. There are three buttons on the bottom which will allow addition of a new family, modification of an existing family and saving new or modified data. The top of the window has a navigation strip. Clicking on the right or left arrows will move the window data from one record to another in either the forward or the backward direction.

Clicking on the Add Family button will shift the window into a new family input mode. The background of the window will change to pastel yellow. This background color is always indicative of a new record being added. All the fields now become available for a new family to be added. Control moves form one field to another as they are updated or with the tab key. Once all the data has been added clicking the “Save Family” button will add the family to the database. Once the data is saved the color of the window will revert back to the original and the panel is ready for further data work. Adding one more family will require the same process to be initiated again by clicking on the “Add Family” button. If for some reason the new family information has to be aborted, clicking on the “Cancel” button will abort the data entry and the background color will also revert back to the non edit mode.

Clicking on the middle button which is the “Edit Button” allows modification of the currently selected data record. Once the modifications are made, clicking the Save Button will save the changes and revert the status back to the original condition. During the “Edit Mode” the background of the entire window sill change to the pastel yellow color. This system remains constant in the various windows in the software. In case a record has to be deleted, it is necessary to first enter the “Edit Mode” by clicking on the Edit Button in the bottom center. The window will change to a pastel yellow background. A small cross image like an X will get highlighted in the top navigation strip. Clicking on this button will delete the existing family record. In case there are any patients associated with the family, the family will not be deleted and a relevant message will come up. In case there is no patient associated with the family, the family record will be deleted and the window will shift back to the regular display mode and the color will also change back to the display mode.

*Patient Data Panel*

This window creates a new patient registration in the database and is the start of the data entry process and history of any registered patient. This panel along with the “Work Done” panel forms the most critical and also the most often used component of the entire software. The Patient Data Panel allows creation of a New Patient or optionally modification / deletion of an existing patient record. The functioning of this panel is very similar to that of the Family panel. This panel also has a navigation strip on top and three buttons on the bottom for Adding Patients, Editing/Deleting a record and saving new or modified data. As with the family panel, the window background color changes on entering the add patient or the edit patient mode.

The data for a patient record should be carefully entered to enable precise analytic reports to be created for any point of time. The most important field for this panel is the name of the patient. It is suggested that a constant protocol be followed for entering the name. It is a good idea to enter the surname followed by the first name. This makes it easy to pick the name of a list box in various places in the software. An example is “SHAH NAVNIT P” where evidently the patients first name is NAVNIT and the surname is SHAH. This will make this patient appear in the S list in an alphabetical order. There is a powerful filter box feature which allows the list box to be short listed based on any component of the patients name.

The Search Filter box is located on the bottom right corner with three fields of data entry possible. All these fields are yellow in color. Any yellow field in the entire software indicates that it will help filter or search for a particular value in the relevant database. In this box there are three search fields, the patient name, category and complaint. The patient data base can be instantly filtered on the basis of any of these fields. If for eg, the word “SHAH” is typed into the patient name filter box, only patients who have the word “SHAH” embedded in the name will be available for editing or deleting. If the word “SHAH NAVNIT” is entered then only those records that have the full name “SHAH NAVNIT” will be available. Similarly if “BLEEDIING GUMS” is entered in the complaints field, only those patients for whom this complaint has been entered will be available in the panel. The most commonly used filter condition is the name of the patient. It is also available in all places where a list box for selection of patients has been created.

Now back to the main patient data entry screen. The next key component for the patients data panel is the selection of the family with which this patient record will be linked. Every patient has to be linked to a family. Hence it is mandatory that a family be created prior to creation of a patient registration record. On selection of a family, the window on the top right side of the screen pops up a list of other patients who are in the same family. After selection of the family, the registration date, birthdate, email, occupation and patient category fields can be entered. Below this basic general data is a section for entering the medical information for the patient. This consists of the ASA status of the patient, the chief complaint of the patient and any medical disorders or complications the patient may have. The chief complaint is a drop box kind of input. A click on the down arrow of the right side of the field will give a drop box list of complaints which have been previously created in the masters table. The medical disorders field can have multiple pieces of information which can be either typed in or can be selected by clicking on any of the options listed below the field. A patient may have multiple situations and all the relevant ones can be clicked and added to this field. Seven of the most common disorders are pre-listed. Then last field in this group is a general details field for any kind of additional information that may be needed to be stored for the patient.

There are two small boxes on the right side of the screen. The top box is a picture box. If there is a camera attached to any USB port of the computer it can be used to take a picture of the patient. A single mouse click on the top window will open up a child window for taking a picture of the patient. This picture will come up in this panel whenever the patients record is being accessed. Below this windows are some other office related details of the patient that can be added or updated. These are the “referring person”, the “status” of the patient and the recall date as well as the last visit date of the patient. Of these fields, the “Status” field is the most important. This field can be set at the “Work Done” panel. While a patient is undergoing treatment, the status field gets set as “I”. When the treatment is completed, the status field gets set as “C”. Note that recall letters are generated only for patients whose status is set as “C”. Patients who have discontinued the services or ar deceased should be set as “D”. Greeting cards or labels will not be generated for patients whose status has been set as “D”.

Addition, saving, editing and deleting the patients master records functions within the same framework of rules as the family data. Note that a patient record can only be deleted provided there is no work done entry for the patient. If a patient with work done entries has to be deleted, first all the work done entries have to be deleted and only then can the patient record be deleted.

*Daily Work Panel*

This panel window is the option that is used the maximum and also will generate the maximum amount of data in the data tables. Every visit of the patient to the dental office will generate at least one record for this panel. In case the patient has had a very long appointment and there are multiple jobs done, it is recommended to make multiple entries from this panel to enable ease of searching and also to generate meaningful data analytic reports. The functioning of this panel is very similar to the Family Data Panel and the Patient Data Panel. There is a navigation tool at the top of the panel and the three essential buttons at the bottom for Adding a new record, Editing/Deleting an existing one and confirming any updates. In addition it has six other relevant buttons which shall be discussed in this section.

This panel has a list box on the left hand side which displays the name of all the patients who have been created. This list box helps select the patient for whom either the work done entries are being displayed/edited/deleted or a new entry has to be bade. Selecting a patient requires moving the cursor to the desired patient name and double clicking on it with the mouse. The patients are listed in alphabetical order by name. Hitting any alpha key will move the cursor to the first instance of a patient name starting with that particular alphabet. If the “P” key is pressed the list will display from the first available patient name starting with “P”. If there is none, the closest to that alphabet will be the first one. This works fine when the number of patients is limited. If a second key is pressed the list gets refreshed starting from the second alpha key. For eg. If P and A are pressed it will not take the list to all patients starting with “PA”. Rather there will be a list popping up starting with the first instance of “P” and it will get refreshed with a list starting with “A”.

Narrowing down the list is done by using the yellow filter text box sitting on top of the list. It is blank by default. If any alpha characters are added to this filter box, the list of patients will narrow down to all those names which have the character string which has been typed, embedded in the name. In case the work “SHAH” is typed, it will narrow down all names which have “SHAH” embedded in the name. Not that this will obviously include all those with the surname “SHAH” but will also include names like “SHAHANI” or even a patient with the name entered as “REHMAN SHAHEEN” as the string “SHAH” is part of the name. This filter box makes it very easy to narrow down the patient list. Double clicking on any name will select that patient. The currently selected patient will be displayed on the main screen at the top. Once a patient is selected the basic data entry/edit process can be initiated.

Adding a new work done entry will require the first button displayed as “ADD NEW WORK” button to be clicked. This will change the panel background color to lemon yellow indicating that a data entry or edit is in process. The date has to be entered (default value is the current date). Please check the “Set Up Walk through” for date setting requirements in the Windows system. The next field to be entered is the actual description of the work done. This data entry screen is the source of a number of analytical reports which could help enhance the dental practice immensely. Even though this text box is primarily a large descriptive space to enter the kind of work done, it is important that a certain pattern be followed for the data entry. This helps in retrieval and search of the data. Dental treatment usually requires multiple sittings, especially in patients who have multiple teeth which have to be treated. It also requires a number of follow ups and treatments which have to be done constantly over a period of time. If for any reason such a patient returns for a follow up and there are about 70 to 80 entries done for the patient, searching among them is time consuming and tedious process. In case, the required information is the jobs done for one particular tooth, the search filter box could be used for this purpose, provided data has been entered in a systematic fashion. If all reference to the upper right second molar are done using the standards system as tooth number “17”, the software could easily short list all the work done records for the patient which have the string “17” in the work done description. But if a standard nomenclature was not followed, this kind of search would not be possible.

Hence it is imperative that a standardized protocol be used when making this descriptive work done entry. It is also suggested that if there are multiple jobs that have been done for the patient during one session, there should be multiple entries made for the jobs. Instead of making one long descriptive entry, it is encouraged to split it into multiple records. The reason for this is that each record also carries additional data which will be discussed in the next two paragraphs. This data helps in providing pertinent and useful information regarding the practice. In case a patient has had three restorations, a scaling and a fluoride treatment done it makes more sense to make three entries. This will allow a different work type for all the three entries and also the fees due and production and receipts will also be split in the three entries. This will also give very powerful due and paid analysis reports.

The software also allows a help and insert for standard work descriptions. Long statements and descriptions can be created in the Utilities section. Any of these can be inserted with a single stroke in the work description field. There is a label above this field which throws up a list of all previously created descriptions. Double clicking any of these descriptions will insert it into the work done field at the current cursor position.

The following fields are all critical and generate more analytic reports. The next three financial fields are the Production, Dues and Paid amount. The Production is the amount that is to be charged for the procedure entered in the work done according to the standard dental office charges. The Dues field has to be an amount the same as the production or possibly lesser than the production amount. This value will be lesser than the production only if the patient has been given a discount. These two fields will generate information on the amount of discounted work that has been done for any period of time. The next field is the amount paid. The difference between the due and the paid generates the pending bills report. The fourth field on this line is a descriptive field as to the mode of payment. The options are Cash, Cheque and Credit Card.

The next line has a very important data field. This is the work type and it has to be selected from the list which is generated from the masters. A default list of work types is provided with the basic installation with the full flexibility to edit or modify the list. Appropriate selection of the work types ensures proper analytical reports which will allow the practice to be modified or moved in the more progressive and productive direction. The adjacent field is the name of the doctor who did the treatment. This is also picked up from a list which is generated from the list of doctors which is in turn created in the appointments section of the software. This field will also generate reports on th work output of the different doctors in the practice.

There are two more fields of data entry based on which more useful reports are generated. These two fields are the last two fields for the work done entry, but will be dealt with here in continuity with the above fields. These two fields are the Periods and Units produced. The periods fields refers to the number of sittings required for the particular work done entry. It can be value ranging from 1 to 9. The next field is the amount of work done for eg. If a scaling was completed then the units of work done is 1. In case three implants were placed, the units of work done is 3. These two fields in combination produce a report which co-related the percentage of collections vs the amount of time taken as well as the sitting required per unit production of the various work types.

The field on the previous line has not be dealt with. This is the prescriptions field. There is a master list of prescriptions which can be pre-set with specific names. There is no limit to the number of prescriptions that can be made. This field will allow any of the pre-set prescriptions to be picked up and also printed. A record is also maintained as to what prescriptions have been made for the patients for any future reference.

This completes all the essential data entry fields that are required to make a full work done entry. This panel will be the most used panel in the dental software. Adding a new record or editing/deleting an existing record function exactly like the Family and Patient panels. The three buttons at the bottom allow Creating a New Record, Saving it, Editing or Deleting or Cancelling any input being done.

This panel has two additional boxes available and also a data navigation strip at the top. As mentioned earlier the patient name list is on the left side. Not that as a patient selection is made or the cursor moved down the list and any particular patient is selected the values displayed in the top navigation strip changes. It shows the total number of work done records that have been made in the system for the particular patient. The right and left arrows will allow scrolling between the work done records for the selected patient. In addition the top right side box will also change its values. It displays the current dues, amount paid the balance payable by the patient. It is essentially an easy reckoner about the patients finances with the dental office.

There is one last box to be explained for this panel. This is the “Search Filter Box” at the bottom right corner. This box will allow the work done entries for any given patient to be further narrowed down based on the search criteria entered in this box. The three possible filters that can be set either individually or in a combination are for the work description, the work type and the doctor who worked on the patient. Any string value entered in the work description filter will narrow down the work done entries to the ones that match this string for any patient. This is of immense value in searching work done for a particular tooth or a procedure of a certain kind. The second field will narrow down on the basis of the data entered in the original work done field of the data entry panel. Similarly the third field will narrow the data based on the doctor who worked for the patient.

There are also five other specialised buttons for this panel which generate relevant information that may be required at the time of work done data entry. The first button click will pop up a window with a scrollable display of all work done entries for the selected patient. These records could be potentially viewed one at a time within the work done panel but this pop up window gives a complete list at a glance. The second button click will print the associated prescription with the work done entry. The prescription has already been preset for its contents as well as the top and left headings. The third button pops up a window which stores the treatment plan for the patient. This is just for a display of the treatment plan of the patient which has been created in the treatment plan panel window. The final two buttons will either display a graphic status chart of the patient or will allow updating and modification of the graphic status chart. The functionality of this chart is exactly the same as described in the Dental Chart section.

*Dental Chart*

This option is a graphic display of the patients oral status. The chart provides us the overall picture at a glance and makes it quite easy to get an instant idea of the amount of dental work required. Since the chart is a dynamically created tool, the oral health situation can be visualized for any particular date subsequent to the patients registration date. The chart created on the registration date is the base line. Using the dental chart is extremely simple. All it needs is a drag and drop onto the dental chart. Prior to creating the chart, the patient has to be selected. The patient list box on the left side functions in exactly the same way as in the “Daily Work” option. On selection of a patient, the name of the patient is display on top of the chart. Al the 32 teeth are display with a buccal representation as well as an occlusal view representation. It is assume that all the teeth are normal and in sound condition. Just above the patient selection box is the date field which allows selection of the date for which the chart is being updated. The default value is the current date, but it can be modified to any date with the date picker which pops up when the down arrow is clicked. The front and back arrow buttons will advance or go back one day each.

The char is updated using the drag and drop method. The top of the chart gas 28 images depicting the various situations a tooth may have. Assigning any of the situations to a tooth is a matter of clicking on any of these images and then dragging the selected image to the tooth to which it has to be assigned. It has to be dragged and dropped on the buccal view of any tooth. The occlusal view will not accept a dragged icon. Keeping the mouse key pressed will enable the drag and releasing the button will drop it if the button is released with the cursor on any of the 32 buccal tooth images. When any of the top 28 icons is double clicked and the mouse button not released the cursor becomes a circle with a slash line indicating that it is in the drag mode. If the cursor is moved to any of the teeth the cursor will change to a square with a plus sign which indicates that it could be dropped at that tooth. If the mouse button is released then the tooth image will change to the icon image which has been dragged to the tooth. Any tooth can be assigned multiple states over a period of time as the dental treatment is carried out.

As various states are assigned to a tooth, a complete history of the progress of the tooth is kept based on the dates on which the assignments were done. In case there are multiple assignments made on the same date for any given tooth, only the last assignment will be display for that particular date. In case a tooth is assigned an icon icon incorrectly or even if a series of assignments are made incorrectly it can be rectified by assigning the first icon which represents a normal tooth. Not that assigning a normal icon to a tooth has one major effect. When a normal icon is dropped on a tooth, all previous assignments which have been made are deleted and there will be no history available for that particular tooth and it is displayed as absolutely normal.

The right side of the chart has two additional options. Adjacent to the top of the chart are two arrow buttons, one right and one left arrow button. These buttons advance the chart to either and earlier state or a next state based on updates which have been made either prior or after the current dates. If there are no updates then it does not have any effect. This is different than just advancing or moving back by one day. This option automatically searches for the next available update date or the previous update date for the selected patient chart.

The right bottom of the chart has an option to generate an image file for the char that is on display. The large red button with the legend “Create Button” can be clicked to generate the graphic file. It is necessary to supply a name for the file that will be created. The name has to be typed into the text box which is below the “Create Image” button. It has to be a valid windows file name. Once the name is entered, clicking the red button will generate a JPG image file with the given name. When the Create Image Button is clicked a folder selection box pops up which requires selection of the the folder in which the image file which will be created will be stored. It is necessary to select a valid folder/subfolder to be able to generate this image file.

The patient char can also be displayed when the Daily Work done is being done as it has been described in that section. The key difference is that there is no update available when the “Display Chart” selection is made from the Daily Work option.

**Reports Section**

The Reports Section provides six different reports from the dental data that is available. The window which opens up on clicking this button accepts a variety of selection options. The selection options play a role based on the report that has been selected. If a selection option is not relevant for a certain report, the selected value is ignored. All reports are displayed in its own window. Any report can be optionally printed to any printer that is available from the Windows OS. The data can also be exported as a PDF, Excel or a Word document. These print and export options are all available at the top of the report window.

The box allows a number of parameters to be entered for which the reports will be filtered. Depending on the report being selected the relevant parameters will be selected to apply the filter. The left side of the panel shows a patient master list. A patient can be selected for the work done reports. Any patient selection will be ignored in case a report is selected where it is not applicable. The description of the reports lists the applicable for each of them. The two parameters which are almost ubiquitous in their usage are the “From” and “To” date values. These two values filter the date range for most of the reports. These dates always have a default value and these values can be changed or modified using the date picker. There are 8 more parameters which can be set for the reports. The relevant ones are activated when a report is viewed. These eight are the Category of the patient, the referring person, the occupation of the patient, the complaint of the patient, the ASA health status, the city entered in the address field of the family, the work type and the doctor who had done a treatment entry. Values for these parameters may be left blank if no filter is desired. The search on these filtered values are for the value to be embedded in the data being filtered. An example is if the word “DOC” is entered in the “Occupation” filter all data which has the valued “DOC” embedded in the field being searched will be included in the report.

There are six different reports that can be generated and they are listed in the large buttons at the bottom. The first one generates a list of all Families based on the selection criteria. The second is a list of patients based on its particular selection criteria. The third is the Work Done for any particular patient and this report will be based on the currently selected patient from the Reports Panel box. The next report is the daily work done report for the dental office. This will generate all the treatments carried out for all patients by all doctors for any given date. The next report is more of a summary data for any given date and the data is displayed in a window that pops up. The last of the reports is a print out of all address labels for the filtered family list.

*Family List Report*

This report generates a list of all families based on the selection criteria. A list of all families which fall within the “To” and “From” date values will be listed. This report will also get filtered for the City parameter in case a value has been entered. This report displays the registration date, the family name, the address, city, pin code and phone number in each row.

*Patient List Report*

This report generates a list of all patients for the selected criteria. All registered patients which fall within the “To” and “From” date values entered. If any values have been entered in the Category, Referred, Occupation and Complaint filter box the list will be filtered for the values entered. This report will display the Registration date of the patient, the patient name, the birthdate, the Email ID, the mobile number and the current status of the patient in each row.

*Work Done Report*

This report generates the work done for any selected patient. The patient selection is to be made from the left side patient list box. The name of the selected patient is displayed just above the report selection buttons. The work done will be displayed for the selected patient within the “From” and “To” date range. The report displays the date of work, the actual work done, the work type, the doctor, the dues and paid amounts and the sittings for each of the rows. As with the other reports, this one can also be exported or printed.

*Daily Work Report*

This report generates the work done for the day by the dental office across all operators. The “To” date field is picked up to set the date for which this report is generated. Each row of this report displays the patient name, the work description, the due and paid amount, the work type, the operator and the sittings.

*Day Summary Report*

This report generates a pop up box with a summary statement for any given day. The “To” date field value is used to generate this report. This report displays a window which gives the following values for the particular day – the total patients attended for the day, new patients for the day, the total number of sittings done for the day, the production for the day, the dues and the collections.

**Billing Section**

This is the billing window panel which allows creating a new invoice, printing an existing invoice or a receipt. This window panel functions very much like the family, patient or work done panels. There are three primary buttons at the bottom to Add, Edit and Save an Invoice. There is a fourth button on the bottom left side which allows printing of a receipt. The panel has a patient selection list on the left side which functions exactly in the same style as in all other panels in the software. The top of the panel has a record navigator which allows scrolling between all invoices for the currently selected invoice. The main body of the panel has 10 fields for bill heads. Individual amounts can be set for each of the bill heads. There is also a narration field at the bottom for special notes. The invoice number is self generated based on the series and number set in the Utilities panel. The default date is the current system date.

Clicking the add invoice option will set up the panel for making a new invoice. The patient has to be selected from the patient list. The selected patients name will be displayed on the top area of the window panel. If necessary a new date can be selected with the date picker. Then the bill heads can be entered along with the amounts. Bill heads can be picked up by pressing the Alt and B buttons. The ALT B pops up a list box of possible bill heads and the selected one gets inserted in the bill head field. As the amounts are entered for the bill heads the total amount gets updated at the bottom and also appears in words. Once all the bill heads have been entered with the relevant amounts, the invoice can be saved by clicking the save button. This invoice can then be printed by using the large print button on top right side of the panel.

The invoice will output on any printer that is available on the system. It is suggested to print the invoice on the office letter head. The top and left margins can be set from the General Information option and this has been explained in the Initial setup up section of this manual. The print option will print the currently selected invoice. It can be used to print a just created invoice or any invoice which has been created in the past.

There is one more option available on this panel. This is the Print Receipt button. Clicking this button will create a printed receipt based on the data and values entered for the invoice. The top and left margins for the receipt can be also set in the General Information panel and has been explained in the relevant section in this manual.

**Inventory Section**

This Inventory option is a single window shop

**Rx Section**

This section allows the creation of Prescriptions which can be directly picked up during the work done entry. The window panel has two fields. One is the name of the prescription while the second one is a descriptive field which allows text formatting. This will contain the actual prescription as it will be printed. There is no limit on the number of prescriptions that be created and made available at work done. The navigation bar on top allows scrolling between existing prescriptions as well as to add a new one and save additions or modifications.

Clicking the Plus sign on the navigation bar will create a blank record which can be updated and then saved by clicking on the Save Icon which looks like a computer disk. The cross button will delete any unnecessary prescription that might have been inadvertently created. The margins of the printed prescription can be set in the Gen Info section and this has been explained in the relevant part of this manual.

**Digital Appointments Section**

The Digital Appointment Section is a very powerful and robust section which takes dental appointment management to a very high level of sophistication. It is extremely easy to use and very intuitive but at the same time has an excellent and comprehensive color coded visual display. The appointments screen comes up on clicking the large vertical Appointments panel on the right side of the opening screen. All the data of the appointments section is stored in the Denappt.mdb database.

The appointments screen displays the data for any given day for all the three chairs for all the 20 appointment slots with the patients name and description. A single click can generate a weekly display on a single screen for all the three chairs. Of course, the weekly display cannot show details of the patients name and procedure. If the details have to be seen on the weekly display screen, it is still possible by just moving the mouse cursor to the appointment slot and the details will appear in a display box on the top of the screen.

The appointments section on the daily display as well as the weekly display has been color coded for the 12 operators. These are preset colors and cannot be changed. The names of the operators are displayed on the right side of the screen in their specific color buttons. The sequence of these doctors is based on the time of creation of the record from first to last. The currently selected operator is displayed on the larger panel on the top with the doctors name as well as color. A doctor can be selected by a single click of the mouse on the button of the desired doctor. The buttons of the various doctors are also in the color assigned to the particular doctor.

The left side of the screen displays a list of all patients. This list is presented alphabetically. A jump can be made to any alphabetical sequence by hitting the key. It has to be noted that each key press of an alphabetical key from A – Z will move the selection to the first occurrence of the specific alphabet. If a further narrow range is desired, it can be achieved by using the yellow filter box on top of the list. If any value is entered in this box, the list gets filtered to all occurrences of the value in the filter box. For eg. if the characters “SHAH” is typed in the yellow box, the list will show only those names which have the characters “SHAH” in the name field. This does not mean that only names starting with “SHAH” will show up. It means that all names having the sequence “SHAH” will come up. The name “BADSHAH” will also feature and so will all with the surname “SHAH”. This selection system appears all over in the software and works in the same fashion.

The top left corner of the screen (above the patient list) displays the date for which the digital appointment schedule is being displayed. The day of the week is also displayed below the date. It might be possible that the day of the week being displayed is one day ahead which means that even though the day on the displayed date is “Tuesday” the displayed day of the week is ‘Wednesday”. In case this problem exists, the solution is very simple and is based on the Windows operating system. In the Control Panel of the Windows operating system the “Regional Settings” option has to be selected. This setting is under the Clocks, Language & Region subsection. In the Regional settings option the first day of the week which is under the Formats tab has to be set as “Sunday”. Once this is done the accurate day of the week will be displayed in places in the software. The default value is always the current date. This date can be easily changed in one of two different ways.

A new date can be just picked up from a date time picker which is a drop down calendar on the date field. In fact all date fields are entered in this style in the software. There are also two arrows below the day of the week. The left arrow will decrease the date by one day while the right arrow click will advance the date by one day. As a date is changed the entire screen will refill the appointments of the date selected.

Adjacent to the left columns is a vertical list of appointment slots. These are the same as has been set up as explained in the Setup Walk Through. Above this is a large button which displays the legend “Weekly Display” . Clicking on this button will shift control to the Weekly display of the appointment display. It should be noted that the Weekly Display does not allow any additions, modifications or deletions. The Weekly screen is just for display. Any updates to the appointments data can only be done from the Daily Appointment Scheduler.

*Making an Appointment*

The top centre of the Daily Appointment Screen has four data fields. The top field is for the patients name and the one adjacent to it is the procedure text box where the scheduled procedure can be typed. Below this are two fields showing the Email ID and Mobile number of the patient. When making an appointment there are certain elements of data that are mandatory. The first step is to make sure that a doctor/operator is selected. This is a simple matter of just a single click on the desired dentist. The currently selected dentist name and color is displayed on the top right box.

The second step is to select the patient for whom the appointment is being made. There are two possibilities for this. It might be an appointment for a pre-existing patient or it might be an appointment for a new patient who is not yet registered. Selecting an existing patient requires just moving the cursor to the desired patient and double clicking on the patient. The patient list box is on the left side of the screen as previously mentioned. A double click on the selected patient immediately updates the box on the top of the screen and it gets filled with the patients name and the Email ID and mobile phone number appear in the two boxes below the patients name. This completes selection of a pre-existing patient. In case a new patient has to be given an appointment, the name of the new patient has to directly entered into the box on top along with the Email ID and the mobile phone number.

The third step is to enter the procedure for which the appointment is being made. This is directly entered in the procedure text box on top of the screen. This step completes all the necessary data required for making an appointment. The next step will make the actual appointment.

The fourth step is to make the actual appointment. There are three columns of appointment boxes alongside the appointment slots. These are for Chairs One, Two and Three. Once the data has been set allotting the appointment to any particular slot is very simple. The cursor has to be parked at the appointment slot and the mouse has to be double clicked. On the double click the appointment slot color will change to the selected doctors color and the text box will get filled with the name of the patient and the procedure to be carried out. As the appointment data base is updated the double click also initiates the process to send an SMS to the patient. This will take place only if a valid mobile phone number is available and if the SMS account has been activated. A message box pops up indicating if the reminder message has been sent or not. If a repeat message has to be sent at any point of time, the cursor has to be parked at the appointment slot and the Alt and the S key has to be pressed. This will send a repeat SMS reminder. Note that only a single SMS will be sent to the patient’s mobile number for the selected appointment slot.

*Making a multiple appointment*

If a continuous appointment has to be made for a single patient across multiple slots it could be done by double clicking on each of the appointment slots. The only issue is that a SMS would be sent to the patient for each of the appointment slots. This can be quite confusing and misleading. The proper approach is to make an appointment for the starting slot. The subsequent slots can be blocked for the same patient by using the “DITTO” technique. The word “DITTO” has to be typed into the patient text box on top. The cursor has to be then parked on the next appointment slot and the mouse double clicked. The appointment slot color will change to the doctors color and the word “DITTO” will appear indicating that the appointment slot is blocked for the patient listed in the previous slot. This can be repeated for continuous multiple appointments. This ensures that patients do not receive unnecessary SMS reminders.

*Deleting an appointment*

Cancelling or deleting an appointment is also a very simple procedure. Ensure that the patient text box field is blank. Then the cursor has to be parked in the appointment slot and the mouse double clicked. The appointment slot will change to white and the appointment will be cancelled. Note that there is no SMS message that is sent to the patient whose appointment is being cancelled.

*Sending Appointment Schedules to Doctors*

A SMS text can be sent to all doctors for the schedule for any day. The appointment calendar has to be opened up for the particular date and the large button on the bottom right side with the label “SMS Appt Schedule” has to be clicked. Clicking this will send out an SMS to all doctors who have an appointment on the given day. Note that appointment SMS text will only be sent to the doctor if a valid mobile number has been entered in the Doctors details and if the check box for Sending SMS has been enabled. Also note that for the primary doctor additional SMS texts of the other doctors will also be sent in case the Check box for the same has been enabled. As the SMS text is sent to each doctor a message box pops up indicating that the message has been sent.

*Personal Scheduling*

The digital appointment scheduler is designed with the appointment slots for upto three chairs as the central core. These appointment slots can be occupied by a mix of the 12 dentists/operators. There are a number of situations where the dentists have their own personal schedules and may not be available. In such a situation if appointments are scheduled of the chairs for these dentists/operators it can lead to a lot of confusions. The software has provided a basic personal scheduler which blends in with the digital appointment diary. The personal scheduler can be accessed easily once a dentist/operator has been selected. The currently selected dentist/operator is always displayed on the top right side panel of the daily appointment scheduler. A double click on this panel opens up a window which is a personal scheduler. To block any period the date has to be selected (the same as selecting the date in the daily appointment screen) and then the specific appointment slots can be blocked by just writing the schedules for those time periods. Just type the contents and the appointment slot is blocked. In case a patient appointment has already been made, those slots will be blocked out with the dentists color code.

A very nifty feature is an automated entire day block. In case the dentist is not available for the entire day, the text has to be entered in the box on top and the “Block Entire Day” has to be clicked. All the free appointments for the entire day will be blocked out. Note that this process takes a bit of time as it has to scan all records prior to blocking out the entire day. Once any appointment slot has been blocked in the personal calendar, no appointment can be made for that slot for the dentist/operator from the appointment scheduler. An appropriate message box will come up with the message that the appointment slot is not available for that particular dentist.

In case an appointment slot has been blocked and either it was an error or the personal schedule has opened and the dentist is now available, the personal block can be removed. The removal of a blocked appointment slot is once again a very simple procedure. All data from the field has to be deleted and then the mouse should be double clicked. This will remove the previously entered schedule and the slot will now become available for further appointments.

*Weekly Appointment Screen*

The weekly schedule come up when the “Weekly Display” button is clicked. On clicking this the screen changes to the weekly display where an entire weeks appointment schedule comes up in the color coded format. This screen is only a display screen and no appointments can be made from this screen. It also cannot display all the details of each appointment in the small box. Just moving the mouse cursor over the small box will pop up the details of the appointment.