


CASE STUDY



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Table of Contents

Application Background	3
Client Profile.....	3
Business Need	3
Challenges	3
Solution Features.....	3
Benefits	4
Technology	4

Application Background

- Creating web based dental application for dentists to create patient reports, with enhanced UI and responsive design.
- Business Engagement Model
- Off-Shore dedicated Resource Model

Client Profile

The client is a Dentist based in US, and looking forward to make a solution that works for dentists to

- Analyze and Set Patient details to create Patient Reports..

Business Need

Client was looking to develop an application using asp.net,HTML,Ajax,JQuery,c# and SQL as backend. He was also looking for specific features as below.

- Create Reports as per patient analysis.
- Familiar window Application like User interface.
- Visualize patient details graphically using image interactions.
- XML Reporting for patients
- Quick & Responsive design for devices like iPad as well as compatibility with various browsers.
- Wants to enhance Application in future for integrating different features.

Challenges

- Browser Compatibility: Application will going to run on iPad as well as table tops, so we have to develop application such that it can run on IE, Fire fox, Chrome and Safari.
- Image Processing on Operations: Application have some features which requires operations on Images, operations on various Image coordinates, Pixel based runtime modification on patient images.
- Completely Client Side Operations: Client requires all the processes at the client side, there are large no of operations which all need to be performed through the client side scripts.

Solution Feature

- We have used technologies like JQuery, Ajax & Java-Script with pure HTML design for achieving browser compatibility.
- We have used Web services to work on images so time consuming operation can be easily done without client interaction. We have used HTML 5 canvas to achieve image operations used on image operations based on image coordinate location, freehand drawing, and runtime modification on images etc.

- We have used Web-Service Layer architecture to achieve requirement of client side operations for responsive design.

Benefits

- Client can use the application from any browser or any device.
- Client can use Most of Features in application including Graphic operations very efficiently without facing any page load issues.
- Application is designed in such manner that, any time in future it can be extend easily.
- We achieve a Great level of Client Satisfaction, by meeting his needs.

Technology

- .Net Framework 3.5
- J Query 1.7.1 & 1.8.2
- Microsoft Visual Studio 2012
- Microsoft SQL Server 2012
- Various Online & Offline tools for rapid development of XML & XSLT, Java-script & JQuery & CSS Designs.

Feature Included

- All the buttons, Images etc. created at runtime from database.
- Various operations get performed on image as per different button selection.
- All operations are performed by Ajax & JQuery so there is no post-back or page-load once the page is loaded.

Age: 28 10 DOB: 02.03.1986 Pt # 1

2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16											Notes	
32	17											Referrals	
31	30	29	28	27	26	25	24	23	22	21	20	19	18

Notes for tooth 25
Disk Distal,

Existing OCC Amal	Existing OCC Com	Existing OL Amal	Existing OL Com	Existing Pulp	ASAP	Buccal Pit	Check In 3 Months	DB Pit
Existing RCT	Existing Sealant	Existing SSC	Ext'ed	Fistula	Disk Distal	Disk Mesial	Distal Cl 3	DO
Fluorosis	FX	HC	HP	Incisal Fx	Ext	Ext If Symp	Facial	Fluoride Varnish
May Need CRN in Future	Missing	Mobile	Not Clinically Present	Ortho Has Material on	Lingual	Mesial Cl 3	MO	MOD
PEG	Premature Exfoliation	Rotated	Stain	Watch Buccal	OB	OCC	OL	Ortho Band With GI Cement

Page Up Page Up

Exam and Treatment Plan
Parent Report
Parental Concerns
Follow-up

Next Back

Change To a Different Patient

Add A Note To a Patient/Parent Report

Add Primary Teeth Clear All Teeth Clear This Tooth Only Other Recommendations

Feature Included

- All the buttons, Images etc. created at runtime from database.
- There is a different Set of buttons as per the selected value in List shown at Left.

Age: 28 10 DOB: 02.03.1986 Pt # 1

Molars CL 2	
< bt >	
E TO E	R L
< bt >	
CL 1	
< bt >	
CL 3	
Cuspids CL 2	
< bt >	
E TO E	L
< bt >	R
CL 1	
< bt >	
CL 3	

Up Down

0	A	AP	A-	P			
-1	-2	-3	-4	-5	-6	-7	-8
-9	-10	-11	-12				
+1	+2	+3	+4	+5	+6	+7	+8
+9	+10	+11	+12				

Show Previous Tracking
Up
Down

Ortho Tracking Notes

View Chart

Followup Item(s)

Exam Tx Plan	1
Exam Tx Plan	2
Ortho Tracking	3
Hygiene	4
Narrative	5
Parent Report Exam Tx Plan	6

➔
➔

Next
Back

Change To a Different Patient

Add A Note To a Patient/Parent Report

Feature Included

- Image is made in HTML 5 Canvas.
- Various operations can be perform on Image including Freehand of various colors.
- Image gives different effect as per the location of click on the image itself.

John (Johnny) Lennon Age: 28 10 DOB: 02.03.1986 Pt # 1

Gingival Health	Oral Hygiene	O H I
Healthy	Excellent	Brushing
Moderate Gingivitis	Good	Flossing
Severe Gingivitis	Good to Fair	Brushing and Flossing
Check Gingivitis In 6 Weeks	Fair	Check OH In 3 Weeks
Check Probing Depths In 4 Weeks	Needs Improvement	Check OH In 3 Weeks

I Want To Start Over With The OH Diagram

Red indicates plaque
 Blue indicates gingivitis
 Grey indicates tartar

Add The Usual Areas

F & L Plaque	IP Plaque
F & L Tartar	IP Tartar
Gingivities	Add 3 Small Smiley Faces
	Add a Medium Smiley Face
	Add a Big Sunny Smiley Face

Auto Buttons I Want To Draw Freehand

Are all probing depths on all erupted permanent teeth <= 3mm?

Click Here to Sign Off This Section

Hygiene note to be added to the Exam and Treatment Plan. Enter the notes in the narrative.

View Chart

Followup Item(s)

Exam Tx Plan	1
Exam Tx Plan	2
Ortho Tracking	3
Hygiene	4
Narrative	5
Parent Report Exam Tx Plan	6

Change To a Different Patient

Add A Note To a Patient/Parent Report

Feature Included

- Report looks like simple HTML is dynamically generated using XML & XSLT.
- Browser based print functionality is included to print the report.

Age: 28 10
DOB: 02.03.1986
Pt # 1

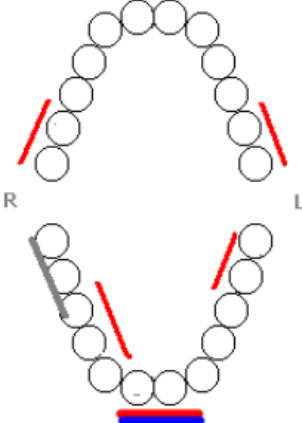
Findings

Oral Hygiene : Fair
Health of Gum Tissue : Moderate
Gingivitis

Gingivitis is the result of ineffective brushing along the gum line and/or flossing between teeth. Plaque builds up, produces inflammation in the gums, and this results in bleeding gums. More effective brushing along the gum line and flossing will help to return the gums to a state of health.
Overall Decay Rate : Moderate - based on visual exam only.

Decay was noted in the grooves of the back teeth.
Decay was noted between teeth. Flossing recommended; brushing alone will be ineffective in preventing decay between teeth. Along the Gum Line

Tommy's permanent 6 year molars are coming in now. These teeth come in behind all the other teeth. Extra effective brushing is recommended for the biting surfaces of these teeth. When they have come in fully, we frequently recommend that sealants be placed.
Tommy's permanent 12 year molars



Red indicates plaque
Blue indicates gingivitis
Grey indicates tartar

SAVE:
Tx Plan
Ortho Tracking

PRINT:
1 Patient Report

SAVE:
Tx Plan
Ortho Tracking
Do Not Print A Patient Report

Page Up Scroll Up

Page Down Scroll Down

Print 1st Div

View Chart

Followup Item(s)	
Exam Tx Plan	1
Exam Tx Plan	2
Ortho Tracking	3
Hygiene	4
Narrative	5
Parent Report Exam Tx Plan	6
➔	➔
Next	Back
Change To a Different Patient	
Add A Note To a Patient/Parent Report	