

Team C.I.Best

[REDACTED], Zachary Walker





Introduction



Zachary Walker

- [Redacted]
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- “Quick Start”
- Designed coding solutions
- Implemented code



Our Client - Franklin's Management Services

- Medium-sized property management company formed in 2002 by Brick Franklin and his wife, Susan.
- Based in Ohio, offers a variety of maintenance services.
- Currently, Susan manages all records on a combination of paper and Excel files.



Franklin's Data Needs

- Easy data entry
- Fully electronic
- Easily updated
- Able to accommodate Franklin's growing size.
- Easy sorting and re-sorting.



Sample Tables

	WorkOrderNumber	TaskID	RootCause	Part_ID	AssetID	Emergency	CreatorID	TechnicianID	TotalHours
1	000000000000001	000000000002	Clogged Toilet	78gl9	000000000004	N	080000000000	180000000000	0
2	000000000000001	000000000003	Clogged Toilet	78gl9	000000000004	N	080000000000	000000000001	0
3	123601110528899	000000000008	ID-10-T User Error	5u672	000000000001	N	020000000000	160000000000	2
4	123601110528899	000000000010	Tree fell on top of it	36502	000000000019	Y	020000000000	210000000000	7
5	123603102151399	000000000022	Too much exposure to Sun	12242	000000000012	Y	090000000000	240000000000	2
6	123603102151399	000000000026	The chain broke	Jck89r	000000000010	Y	040000000000	300000000000	3
7	123611071407399	000000000005	Gear stripped, no longer catches	4zf40	000000000026	N	070000000000	170000000000	2
8	123611071407399	000000000020	Destroyed by dog	78gl9	000000000002	Y	140000000000	230000000000	4
9	123619082679699	000000000009	Improper shutdown caused power failure	Ntz45	000000000014	Y	100000000000	240000000000	2
10	123619082679699	000000000011	Too much exposure to Sun	Bldz85	000000000030	Y	010000000000	250000000000	1

	Part_ID	Category	Sub_Category	SupplierName	PartName	Description	SupplierID	Quantity_In_Stock	Special_Features	Reorder_Point	Reorder_Quantity	Price
1	12242	Hvac	Air Quality	Danielson Inc	Air Bear	Air Filter 12x24x2	000000000004	60		55	120	69.00
2	15970	Paint / Tools / Supplies	Paint	Painting Pete	Petes Powerful Tape	60yard Blue Painter Tape	000000000031	95	No Adhesive Residue	50	80	6.29
3	20202	Hvac	Air Quality	Danielson Inc	Air Bear Large	Air Filter 20x20x20	000000000004	18		2	12	59.00
4	24242	Hvac	Air Quality	Danielson Inc	Honeyhive Stopper	Air Filter 24x24x2	000000000004	108		34	72	70.00
5	3340	Grease and Oils	Rotor Oil	Carlos Autos	Synthend HC Tuff	WD340-88 synthetic blend	000000000003	8	Heat and Cold resistant	2	4	26.50
6	36502	Hvac	Air Quality	Danielson Inc	Filter Bear Media Roll	Air Filter Roll Media 36x50x2	000000000004	70		12	100	85.99
7	3977a	Paint / Tools / Supplies	Paint	Painting Pete	EZ Paint Roller 3.0	9inch Fabric Paint Roller Cover	000000000031	22		10	15	10.00
8	3977b	Paint / Tools / Supplies	Paint	Painting Pete	EZ Paint 3.0	9inch Paint Roller Frame	000000000031	45	Rubber Grip	10	15	12.99
9	3jr70	Compressor	1hp Air Compressor	Inez Inc	New Line Compressor 1Hp V3	2.3 Cfm@ 125 Psi, 3 Gal Hotdog, 115V	000000000010	16	Dual Knob Mechanism	10	20	99.95
10	4zf40	Lubricants	Compressor Oil, 5 Gal	Lubrication Specialists	Valvoline Cold Oil 2d	Refrigerator, Compressor Oil	000000000013	48		25	40	27.85

Demonstration

SQLQuery2.sql - ac...UAD\zawalker (59)) * SQLQuery1.sql - ac...UAD\zawalker (61)) *

```
/* Finds Name and Specialty of Technicians who have worked at Zack's property before */  
SELECT FName, LName, TradeSpecialty  
FROM Employee INNER JOIN Technicians ON (EmployeeID = TechniciansID)  
WHERE EmployeeID IN (  
    SELECT techniciansID  
    FROM technicians  
    WHERE techniciansID IN (  
        SELECT technicianID  
        FROM WorkOrderTasks  
        WHERE WorkOrderNumber IN (  
            SELECT WorkOrderNumber  
            FROM WorkOrders  
            WHERE PropertyID IN (  
                SELECT PropertyID  
                FROM Residents  
                WHERE ResidentName = 'Zack'))));
```

150 %

Results Messages

	FName	LName	TradeSpecialty
1	Brick	Franklin	Electrician
2	Mia	Toretto	AC Technician
3	Harry	Potter	Painter



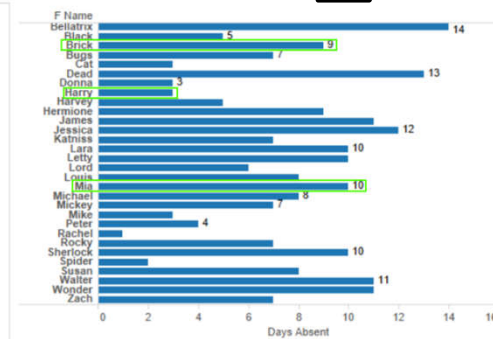
Find Technicians who have previously worked on Zack's residence and see if they are suitable.

How Accidents are impacted by Hours Worked and Location

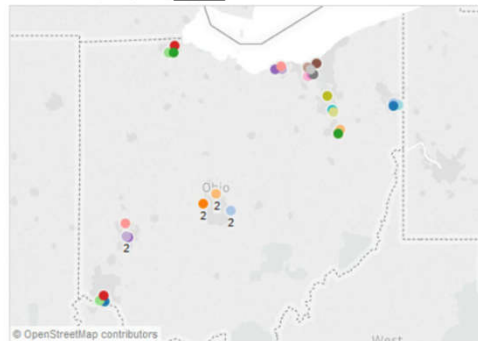
Average Hours Each Tech Spent Per Work Order Task (Zachary)



Number of Days Missed Due to Accidents



Accidents by Property



Accident-Prone Trade Specialties



Assess Employee Efficiency & Reliability

SQLQuery6.sql - ac...UAD\zawalker (69))*											
SQLQuery5.sql - ac...UAD\zawalker (68))*											
SQLQuery4.sql - ac...UAD\zawalker (63))*											
SQLQuery3.sql - ac...UAD\zawalker (65))*											
/* Create a Work Order */											
INSERT INTO WorkOrders											
VALUES ('0000000000000002',											
(SELECT PropertyID											
FROM Residents											
WHERE ResidentName = 'Zack'),											
getdate(), getdate(), '2018-12-05',											
(SELECT TOP 1 EndDate											
FROM WorkOrders											
WHERE PropertyID IN											
(SELECT PropertyID											
FROM Residents											
WHERE ResidentName = 'Zack')),											
'Presentation', 'Part needs to be specially ordered', 'Open',											
(SELECT ResidentID											
FROM Residents											
WHERE ResidentName = 'Zack'),											
'Plumbing');											
150 %											
Results Messages											
WorkOrderNumber	PropertyID	DesiredDate	StartDate	EndDate	LastMaintenanceDate	CreatedBy	NotesAboutJob	WorkStatus	ResidentID	Category	
1	0000000000000001	619072530599	1900-01-01	2018-11-19	2018-11-19	2018-11-19		Open	028000000000	Plumbing	
2	0000000000000002	630021780899	2018-11-28	2018-11-28	2018-12-05	2017-06-13	Presentation Part needs to be specially ordered	Open	000000000001	Plumbing	
3	123601110528899	628030446199	2018-01-26	2018-01-28	2018-01-28	2017-01-31	Bugs Call when outside	Completed	024000000000	NULL	
4	123603102151399	619071977799	2017-11-11	2017-11-12	2017-11-14	2017-10-21	Mike Go around the back door	Delayed	015000000000	NULL	
5	123611071407399	644021847799	2018-10-25	2018-10-26	2018-10-27	2018-06-04	Lara Call when outside	Delayed	021000000000	NULL	



Create a Work Order for Zack

SQLQuery6.sql - ac...UAD\zawalker (69))* SQLQuery5.sql - ac...UAD\zawalker (68))* SQLQuery4.sql - ac...UAD\zawalker (63))* SQLQuery3.sql - ac...UAD\zawalker (65))*

```

/* Add the Task */
Select TOP 1 TechniciansID
FROM Technicians
WHERE TradeSpecialty = 'Maintenance';
INSERT INTO WorkOrderTasks
VALUES ('0000000000000002', '000000000031', 'Resident Unsure of Root Cause', '78gl9', '000000000004', 'Y',
'080000000000', (SELECT TOP 1 TechniciansID from Technicians where TradeSpecialty = 'Maintenance'), '0');
/* Note that the TechnicianID Field is populated with a Maintenance technician
even though we know it is a Plumbing task. The trigger automatically detects and fixes this problem. */
SELECT * FROM WorkOrderTasks;

```

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	WorkOrderNumber	TaskID	RootCause	Part_ID	AssetID	Emergency	CreatorID	TechnicianID	TotalHours
1	0000000000000001	000000000002	Clogged Toilet	78gl9	000000000004	N	080000000000	180000000000	0
2	0000000000000001	000000000003	Clogged Toilet	78gl9	000000000004	N	080000000000	000000000001	0
3	0000000000000002	000000000031	Resident Unsure of Root Cause	78gl9	000000000004	Y	080000000000	000000000003	0
4	123601110528899	000000000008	ID-10-T User Error	5u672	000000000001	N	020000000000	160000000000	2
5	123601110528899	000000000010	Tree fell on top of it	36502	000000000019	Y	020000000000	210000000000	7
6	123603102151399	000000000022	Too much exposure to Sun	12242	000000000012	Y	090000000000	240000000000	2
7	123603102151399	000000000026	The chain broke	Jck89r	000000000010	Y	040000000000	300000000000	3
8	123611071407399	000000000005	Gear stripped, no longer catches	4zf40	000000000026	N	070000000000	170000000000	2
9	123611071407399	000000000020	Destroyed by dog	78gl9	000000000002	Y	140000000000	230000000000	4
10	123619082679699	000000000009	Improper shutdown caused power failure	Ntz45	000000000014	Y	100000000000	240000000000	2



Add the Task - and watch as an appropriate Technician is automatically selected

SQLQuery6.sql - ac...UAD\zawalker (69))* SQLQuery5.sql - ac...UAD\zawalker (68))* SQLQuery4.sql - ac...UAD\zawalker (63))* SQLQuery3.sql - ac...UAD\zawalker (65))*

```

/* Add the Task */
Select TOP 1 TechniciansID
FROM Technicians
WHERE TradeSpecialty = 'Maintenance';

```

150 %

TechniciansID
180000000000

SQLQuery7.sql - ac...UAD\zawalker (62))* SQLQuery5.sql - ac...UAD\zawalker (68))* SQLQuery4.sql - ac...UAD\zawalker (63))* SQLQuery3.sql - ac...l

```
/* Find the Supplier who supplies the necessary part for Zack */  
SELECT s.SupplierName, ContactPerson, Phone, WebAddress  
FROM Suppliers s, Parts p, WorkOrders wo, WorkOrderTasks wot, Residents r  
WHERE s.SupplierID = p.SupplierID  
AND p.Part_ID = wot.Part_ID  
AND wot.WorkOrderNumber = wo.WorkOrderNumber  
AND wo.ResidentID = r.ResidentID  
AND r.ResidentName = 'Zack';
```

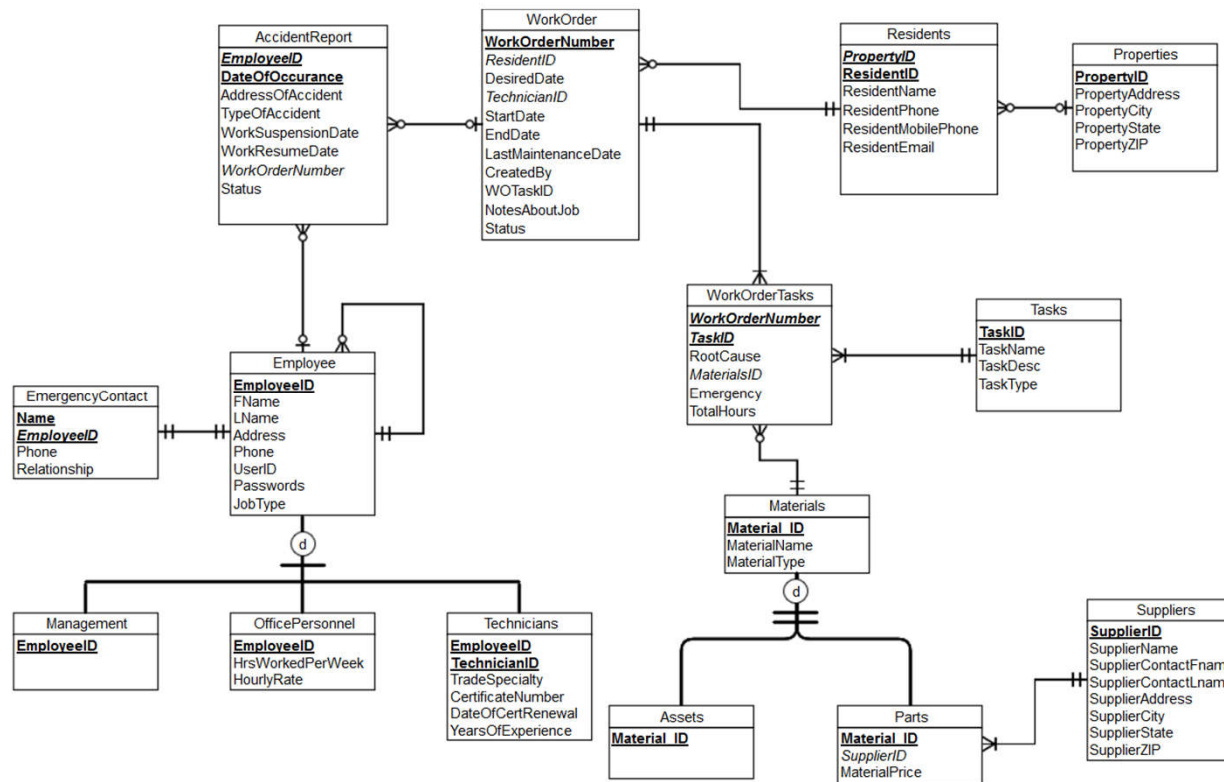
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Results Messages

	SupplierName	ContactPerson	Phone	WebAddress
1	Rogers Inspections	Will Rogers	480215896	www.rogerseyes.com



Which supplier has the part that we'll need to special order?



Old ERD

New ERD

SQLQuery9.sql - ac...UAD\zawalker (67))*							
SQLQuery8.sql - ac...UAD\zawalker (73))*							
SQLQuery7.sql - ac...UAD\zawalker (62))*							
/* Check the DelayedWOLog Table */							
SELECT *							
FROM DelayedWOLog;							
150 %							
Results Messages							
	WO#	WOT#	StartDate	AssignedTech	WORootCause	ReasonForDelay	StatusChangeDate
1	123611071407399	0000000000005	2018-10-26	1700000000000	Lawnmower destroyed by dog	resident not home	2018-11-19
2	123611071407399	0000000000020	2018-10-26	2300000000000	Lawnmower destroyed by dog	resident not home	2018-11-19
3	123619082679699	0000000000009	2018-10-13	2400000000000	Solar Panel Failure	Resident not home	2018-11-19
4	123619082679699	0000000000011	2018-10-13	2500000000000	Solar Panel Failure	Resident not home	2018-11-19



Check to be sure Zack's Work Order isn't already in the Delayed table

SQLQuery9.sql - ac...UAD\zawalker (67)))* SQLQuery8.sql - ac...UAD\zawalker (73)))* SQLQuery7.sql - ac...UAD\zawalker (62)))* SQLQuery5.sql - ac...UAD\zawalker (68)))*

```

/* Execute stored procedure to delay Zack's Work Order */
EXEC DelayWorkOrder '00000000000002', 'Root Cause Unknown', 'Part not in stock';

/* Check the table to ensure his Work Order is in the Delayed Log */
SELECT *
FROM DelayedWOLog;

/* Check the WorkOrder table to ensure the status is set to "Delayed" */
SELECT *
FROM WorkOrders
WHERE ResidentID = (
    SELECT ResidentID
    FROM Residents
    WHERE ResidentName = 'Zack');

```

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Results Messages

	WO#	WOT#	StartDate	AssignedTech	WORootCause	ReasonForDelay	StatusChangeDate
1	0000000000000002	00000000000031	2018-11-28	00000000000003	Root Cause Unknown	Part not in stock	2018-11-28
2	123611071407399	00000000000005	2018-10-26	17000000000000	Lawnmower destroyed by dog	resident not home	2018-11-19
3	123611071407399	00000000000020	2018-10-26	23000000000000	Lawnmower destroyed by dog	resident not home	2018-11-19
4	123619082679699	00000000000009	2018-10-13	24000000000000	Solar Panel Failure	Resident not home	2018-11-19
5	123619082679699	00000000000011	2018-10-13	25000000000000	Solar Panel Failure	Resident not home	2018-11-19

	WorkOrderNumber	PropertyID	DesiredDate	StartDate	EndDate	LastMaintenanceDate	CreatedBy	NotesAboutJob	WorkStatus	ResidentID	Category
1	0000000000000002	630021780899	2018-11-28	2018-11-28	2018-12-05	2017-06-13	Presentation	Part needs to be specially ordered	Delayed	00000000000001	Plumbing



Delay Zack's Work Order

Fin.

