

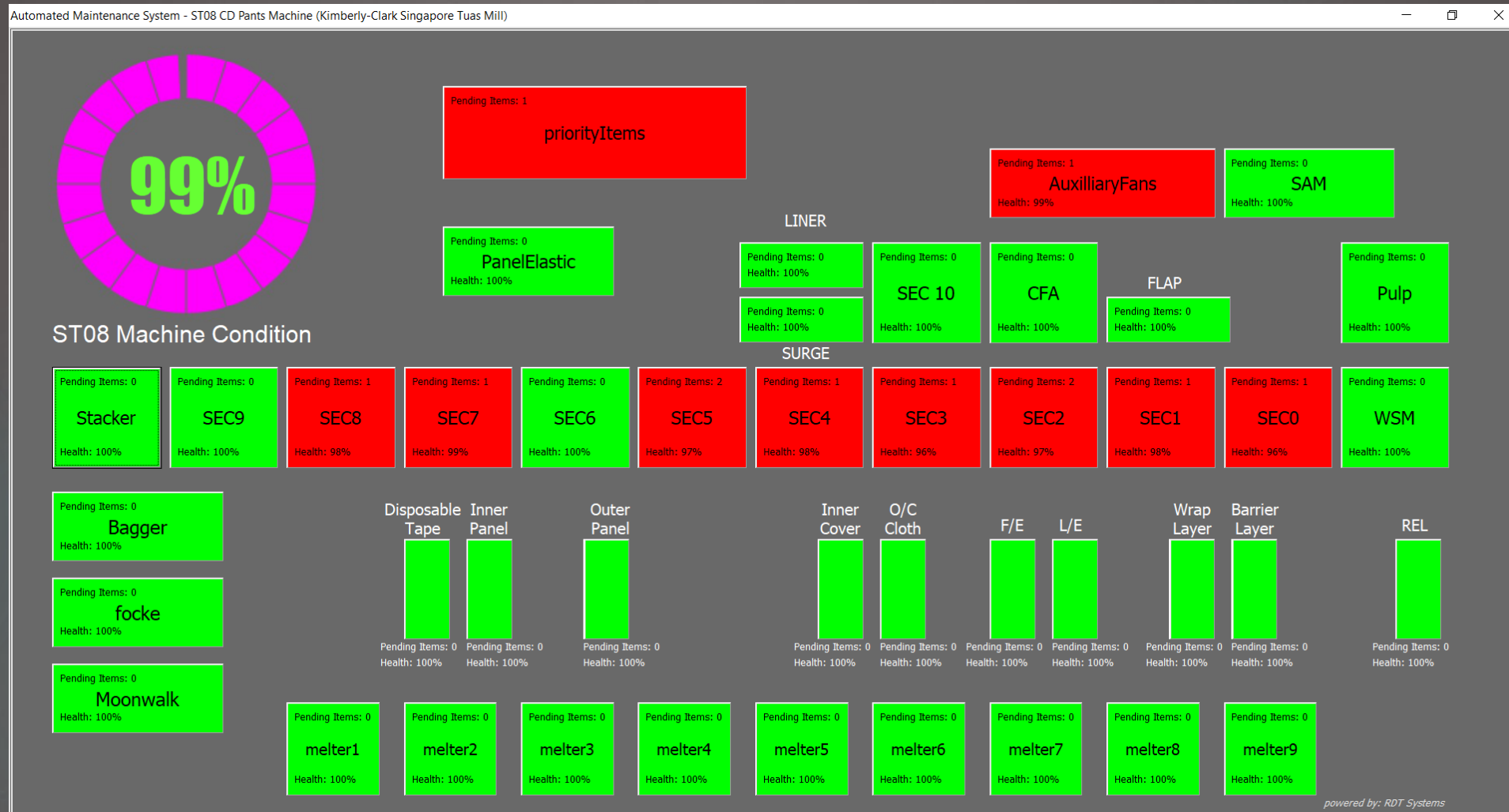


June 18,2023

Automated Maintenance System Realization

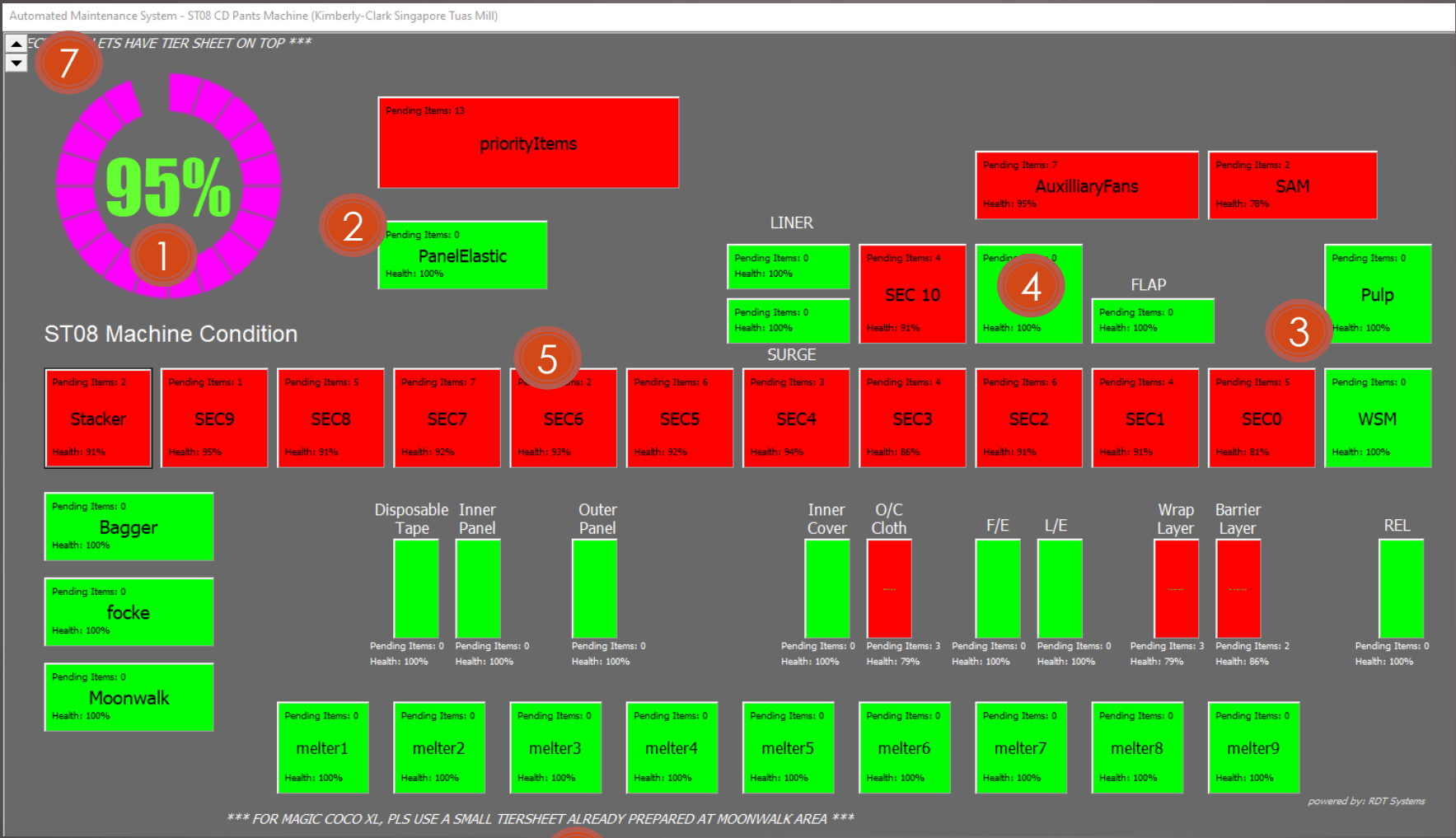
Kimberly-Clark Singapore Tuas Mill

User Interface *(simple, clean, informative UX/UI in actual machine setup layout)*



Dynamic Visual Info's and Interactive Controls

Dynamic Visual Info's



1. Overall machine health condition
2. Pending items per section
3. Health condition per section
4. Green buttons means, zero pending items (100% healthy)
5. Red button shows that there is a needed maintenance item for a particular section
6. Top and Bottom banners for reminders, announcements, etc.
7. Zoom control to fit all screen size

Interactive Controls

PanelElastic

Health: 100%

LINK

SEC 10

CFA

FLAP

Pulp

Items Due for Maintenance

ID#	Sub Section	Maintenance Item	Activity	SAP	Spare Location	Freq (days)	Est Time (mins)	Due Date
120	Final cut-off Outfeed conveyor	Conveyor Belt	Replacement	nil	nil	180	30	6/7/2023
158	Vacuum Fan Dynamic	Impeler	Replacement	nil	nil	1000	180	6/7/2023
170	Vacuum Suction Fan	Motor DR Side	Replacement	nil	nil	1000	120	6/7/2023
183	Fiberizer Feed Roll	Rotor Blade	Replacement	nil	nil	1000	180	6/7/2023
189	Scarifier Return fan	Bearing DR side	Replacement	nil	nil	730	60	6/7/2023
216	De-bulker Module	Bottom roll Bearing DR side	Replacement	nil	nil	365	120	6/7/2023
330	Maintacker	plasma coated drive roll	CIL/ Adjust	nil	nil	7	15	6/7/2023
360	2 in 1 Module	Vaccum hose Replacement	CIL/ Adjust	nil	nil	30	10	6/7/2023
428	Fife Guide Back Panel	Motor	CIL/ Adjust	nil	nil	30	5	6/7/2023
500	Product rotator transfer drum	Commutator Felt	CIL/ Adjust	nil	nil	7	10	6/7/2023
550	Liner surge embosse	felt	CIL/ Adjust	nil	nil	14	10	6/7/2023
557	Splicing unit	linear bearing	CIL/ Adjust	nil	nil	30	10	6/7/2023
579	Festoon	bearing	CIL/ Adjust	nil	nil	30	10	6/7/2023

melter1

Health: 100%

melter2

Health: 100%

melter3

Health: 100%

melter4

Health: 100%

melter5

Health: 100%

melter6

Health: 100%

melter7

Health: 100%

melter8

Health: 100%

melter9

Health: 100%

Selectable item list pops-out after a red button is clicked

Maintenance Item

Activity

SAP

Conveyor Belt

Replacement

nil

Impeler

nil

Motor DR Side

nil

Rotor Blade

nil

Bearing DR side

nil

Bottom roll Bearing DR side

nil

plasma coated drive roll

nil

Vaccum hose Replacement

nil

Motor

nil

Commutator Felt

nil

felt

nil

linear bearing

nil

bearing

nil

Name and WID

NAME

WID

OK

UserName and WID verification before system update is allowed

Warning

You are not allowed to update ST08 Automated Maintenance System without entering your Name and WID. Do you want to try again?

OK

After task completion condition verification

Automated Maintenance System (ST08)

Is Conveyor Belt Replacement ok until next due date?

Yes

No

Findings and Recommendations if any

Remarks

Please write your findings and recommendations here:

OK

Cancel

Remarks

You must enter your findings and recommendations. Do you want to try again?

Yes

No

Actual Time taken on task completion

Actual Time

Time taken to finished the task (mins)

OK

Cancel

Database (in excel sheet, which everyone is familiar with and for easy data migration)

Legend:

Auto Only

Manual Input

Auto and Manual Input

Highlighted Values

Send Findings

Send Priority

Due within 10 days

ID	Section	PM Alai	Sub Section	Maintenance Item	Activity	SAP	Spare Locatic	Frequency (da	Estimated (m	Actual (mir	Due Dat	Calculated D	Override due d
1	SAM	0	Filter	SAM PD Blower Filter	Replacemer	nil	nil	60	30	234	17-Aug-23	17-Aug-23	
2	SAM	0	Filter	SAM Receiving bin filter (top of fan room) 3Filter	Replacemer	nil	nil	30	30	33	17-Jul-23	17-Jul-23	
3	SAM	0	Filter	Positive displacement Blower Filter	Replacemer	nil	nil	365	15		12-Jun-24	12-Jun-24	
4	SAM	0	Salina	CYClone return salina valve Assembly	Replacemer	nil	nil	1000	120		08-Mar-26	08-Mar-26	
5	AuxiliaryFans	0	PD Blower	Gearbox	Replacemer	nil	nil	1000	120		11-Mar-26	11-Mar-26	
6	AuxiliaryFans	0	PD Blower	Timing Belt	Replacemer	nil	nil	365	60		12-Jun-24	12-Jun-24	
7	SECO	0	Forming Drum	Forming Drum Outer Felt (OP)	Replacemer	nil	nil	365	30		12-Jun-24	12-Jun-24	
8	SECO	0	Forming Drum	Forming Drum Outer Felt (DR)	Replacemer	nil	nil	365	30		05-Jun-24	05-Jun-24	
9	SECO	0	Forming Drum	Forming Drum Inner Felt (OP)	Replacemer	nil	nil	365	30		05-Jun-24	05-Jun-24	
10	SECO	0	Forming Drum	Forming Drum Inner Felt (DR)	Replacemer	nil	nil	365	30		05-Jun-24	05-Jun-24	
11	SECO	0	Forming Drum	Scarfing Roll Felt (OP)	Replacemer	nil	nil	730	30		05-Jun-25	05-Jun-25	
12	SECO	0	Forming Drum	Scarfing Roll Felt (DR)	Replacemer	nil	nil	730	30		05-Jun-25	05-Jun-25	
13	SECO	0	Pad transfer conveyor	Conveyor Belt	Replacemer	nil	nil	180	30		03-Dec-23	03-Dec-23	
14	SECO	0	Pad transfer conveyor	Drive roll	Replacemer	nil	nil	730	100		05-Jun-25	05-Jun-25	
15	SECO	0	Pad transfer conveyor	Pillow bearing	Replacemer	nil	nil	730	120	12	16-Jun-25	16-Jun-25	
16	SECO	0	Adhesive	Pad Integrity Applicator Control Module (Liner si	Replacemer	nil	nil	730	45		05-Jun-25	05-Jun-25	
17	SECO	0	Adhesive	Pad Integrity Applicator Solenoid Valve (Liner si	Replacemer	nil	nil	730	30		05-Jun-25	05-Jun-25	
18	SECO	0	Adhesive	Pad Integrity Applicator Control Module (Poly sic	Replacemer	nil	nil	730	45		05-Jun-25	05-Jun-25	
19	SECO	0	Adhesive	Pad Integrity Applicator Solenoid Valve (Poly sic	Replacemer	nil	nil	730	30		05-Jun-25	05-Jun-25	
20	SEC1	0	Debulker Conveyor	Conveyor Belt	Replacemer	nil	nil	730	30		05-Jun-25	05-Jun-25	
21	SEC1	0	Debulker Conveyor	Drive roll	Replacemer	nil	nil	730	100		05-Jun-25	05-Jun-25	
22	SEC1	0	Debulker Conveyor	Pillow bearing	Replacemer	nil	nil	730	120		05-Jun-25	05-Jun-25	
23	SEC1	1	Pad Cut-off	Anvil	Replacemer	nil	nil	730	180		07-Jun-23	13-Jun-25	07-Jun-23
24	SEC1	0	Pad Cut-off	Knife Holder	Replacemer	nil	nil	1000	30		02-Mar-26	02-Mar-26	
25	SECO	0	Pad Cut-off	Conveyor Belt	Replacemer	nil	nil	730	20		05-Jun-25	05-Jun-25	

- Database Auto Update from UI inputs
 - Date done
 - Done by who
 - Dates done historical data
 - Findings and Suggestions
 - Due date

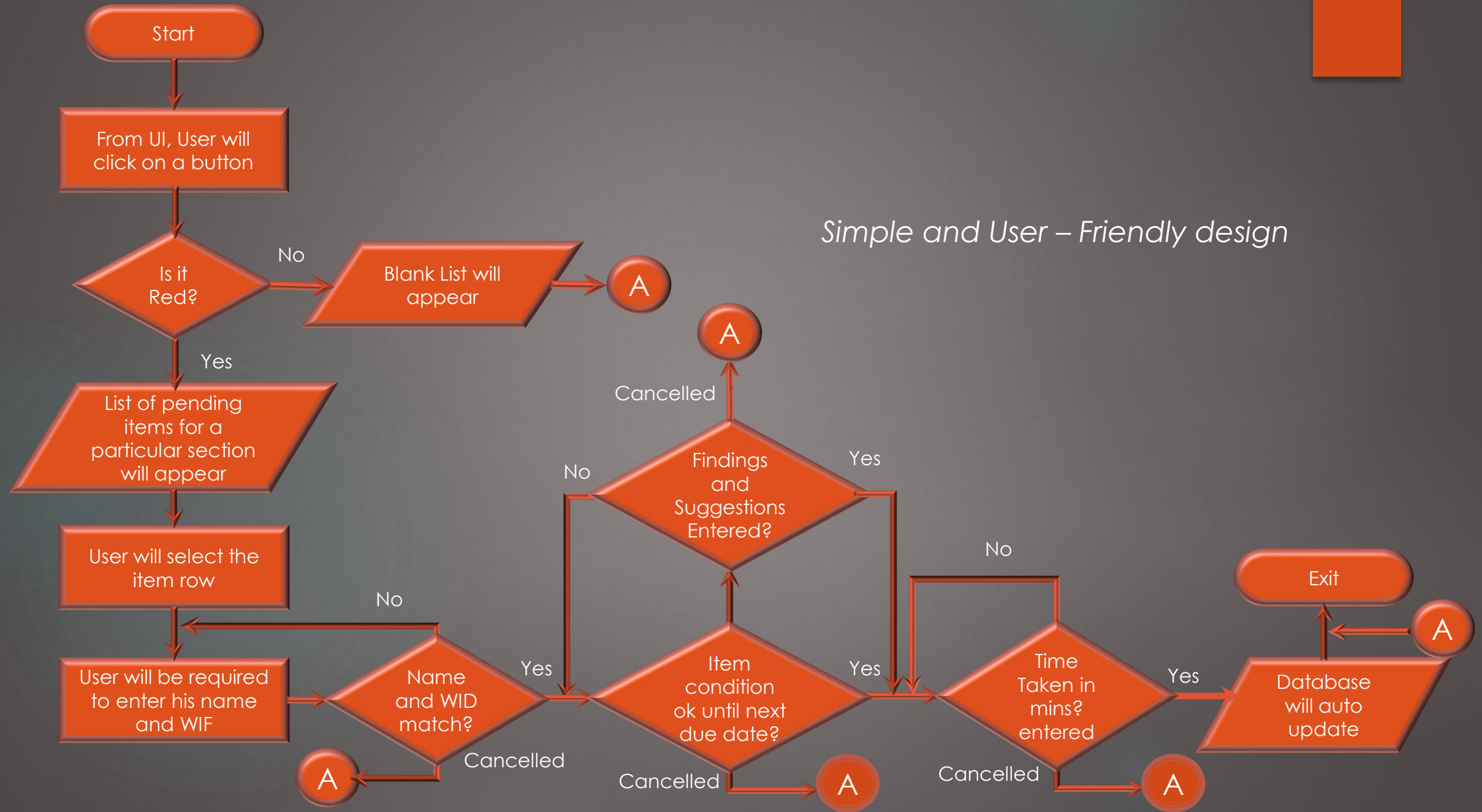
2. Auto Daily Email Notifications

- Priority Items
- Items with Findings and Suggestions from the crew
- Parts replacement due within 10 days

3. User Controllable Items after data review

- Override Due date
- Select Priority items
- Button click for manual sending of updates (email)

Process Flow:



System requirements:

1. MS Office 2019 or higher
2. Latest VBA Update
3. Dedicated PC or Shared PC but no other excel file is used on that PC cause UI in VBA form will not allow other excel file to run while it is in use
4. Outlook account to enable auto email sending of updates
5. Share point access