

Background: The current church room booking system relies on manual paperwork, which is considered inefficient. Therefore, there is a need for software automation.

This documentation lists the detailed steps for building the Bukit Batok Presbyterian Church (BBPC) Room Booking system from the group up. It is developed using tools from **Microsoft Power Platform (Power Apps, Power Automate and Dataverse)**.

After discussion with the church administration teams on 11th July 2024, below are the additional requirements:

- Earliest time for booking to be 8am and Latest Time is at 9.30pm.
- No. of Persons to be added
- Ministry (Drop-down list): Sunday School, Youth Fellowship, Women Fellowship, etc
- An additional screen for the three consent checkboxes to be included. Additionally, the Rules and Regulations in PNG format will be attached to the email sent to the Requestor after the room is approved.
- Administration side has the right to amend the booking if the booking is done wrongly.
- Approval email received for each booking needs to show not only the days of booking, but also the day of the week. For example, 12th July 2024 (Friday)
- Ability to perform: (a) Cancel booking, (b) Block booking, (c) Recurring booking.
- Overall plan view of the bookings for the current and advanced months for caretaker's advanced preparation. (not viewable on the user's side)

Below are several checks to ensure the system functions correctly as intended.

First check: If the room selected is Booked, the 'Book' button is disabled.

The screenshot displays the Microsoft Power Apps interface for the BBPC Room Booking system. At the top, a formula bar shows the logic: `If(Availability = "Booked", DisplayMode.Disabled, DisplayMode.Edit)`. The left-hand pane shows the 'Tree view' with a list of screens and components. The 'Book' screen is selected, showing a list of components including 'Pax', 'RoomName', 'EndTime', 'NumberOfPersons', 'Reasons', 'BBPCRoomBooking', 'BBPCLogo', and 'SelectRoom'. The main canvas area shows a preview of the 'Book' form. The form includes fields for 'Level' (set to 1), 'Select Vacant room to book' (set to MPH (A)), and 'No. of Persons' (set to 30). It also has date and time pickers for 'Start Time' (09:30) and 'End Time' (10:00). A 'Room Availability' section shows 'Vacant' in green. Below these are input fields for 'Name', 'Email', and 'Contact', and dropdown menus for 'English' and 'Youth Ministry'. A text area for 'Please state the reasons for booking.' is present. At the bottom, a 'Book' button is shown, which is disabled (greyed out) due to the conditional logic.

The button 'Book' would only be active when the Room selected with the Room Availability showing 'Vacant'. If the Room selected with the Room Availability showing 'Booked', the 'Book' button would be disabled. See below.

BBPC Room Booking

Level

1

Select Vacant room to book

MPH (A)

No. of Persons

30

Date

7/13/2024

Start Time

09

30

End Time

10

00

Room Availability

Vacant

Room Details

Please state the reasons for booking.

Name

Enter your name here.

Email

Enter your email here.

Contact

Enter your contact here.

English

Youth Ministry

If Others, please state here. Requirement (if any)

Book

BBPC Room Booking

Level

1

Select Vacant room to book

MPH (A)

No. of Persons

30

Date

7/30/2024

Start Time

09

30

End Time

10

00

Room Availability

Booked

Room Details

Please state the reasons for booking.

Name

Enter your name here.

Email

Enter your email here.

Contact

Enter your contact here.

English

Youth Ministry

If Others, please state here. Requirement (if any)

Book

Second check: If the Reasons for Booking is blank and the 'Book' button is clicked, a notification message would be displayed.

If any of the 'Purpose for Booking', 'Name', 'Email', or 'Contact' fields is blank, the booking cannot proceed. A prompt message will ask you to fill in the relevant field, as shown below.

Please fill in the purposes for booking.

OnSelect

= fx

If(

IsBlank(Purpose.Text),Notify("Please fill in the purposes for booking."),

IsBlank(RequestorName.Text),Notify("Please fill in your name."),

IsBlank(RequestorEmail.Text),Notify("Please fill in your email address."),

IsBlank(RequestorContact.Text),Notify("Please fill in your contact."),

Navigate('Are you sure')

)

Tree view

Screens

Components

Search

New screen

App

Rules_Agreement

Room Booking

Requirements

Ministry

RequestorContact

ContactLabel

RequestorEmail

EmailLabel

RequestorName

NameLabel

Room_ID

RoomDetails

Level

Room

Availability

Room Details

Please state the purposes for booking.

Name

Enter your name here.

Email

Enter your email here.

Contact

Enter your contact here.

English

Youth Ministry

If Others, please state here. Requirement (if any)

Book

The system will proceed to the confirmation screen only all the required fields are filled and the room to be booked is Vacant. If the 'No' button is pressed, it will return to the previous booking screen. If the 'Yes' button is pressed, a message will inform you that your booking has been sent to the approver, and it will then return to the original booking screen.

Are you sure you want to book?

No

Yes

Your booking is sent to the Approver.

If(_min45Selected,
Filter(["08", "09", "10", "11", "12",
"13", "14", "15", "16", "17", "18", "19", "20", "21"],
Value(ThisRecord.Value) > Value(StartHour.Selected.Value)),
Filter(["08", "09", "10", "11", "12",
"13", "14", "15", "16", "17", "18", "19", "20", "21"],
Value(ThisRecord.Value) >= Value(StartHour.Selected.Value))
)
nat text Remove formatting Find and replace

Date7/17/2024Start Time1200End Time1215

If(
_startHour = _endHour,
Switch(
_startMin,
0, ["15", "30", "45"],
15, ["30", "45"],
30, ["45"],
45, ["00", "15", "30", "45"]
)
)
at text Remove formatting Find and replace

7/17/2024End Time1215

Above Items of 'EndHour' and 'EndMin' ensures that the End Time is always greater than the Start Time.

The acceptable Date for booking is only from today till 30 days later.

OnChange = fx If(Self.SelectedDate < Today() || Self.SelectedDate > Today() + 30, Reset(Self));

Tree viewScreensComponents

Search

New screen

Level

Level_Dropdown

RoomAvailability

Availability

Congregation

Book

Pax

RoomName

EndTime

NumberOfPersons

Reasons

BBPCRoomBooking

BBPCLogo

SelectRoom

BBPC Room Booking

Level1

Select Vacant room to bookMPH (A)

No. of Persons30

Date7/17/2024

Start Time1200

End Time1215

Room AvailabilityVacant

Room Details

Please state the reasons for booking.

NameEnter your name here.

EmailEnter your email here.

ContactEnter your contact here.

English

Youth Ministry

If Others, please state here. Requirement (if any)

Book

3 | Page

When the 'Yes' button is clicked, it will link to the **Power Automate** flow named 'ApproverBookingRoom' with its arguments.

```

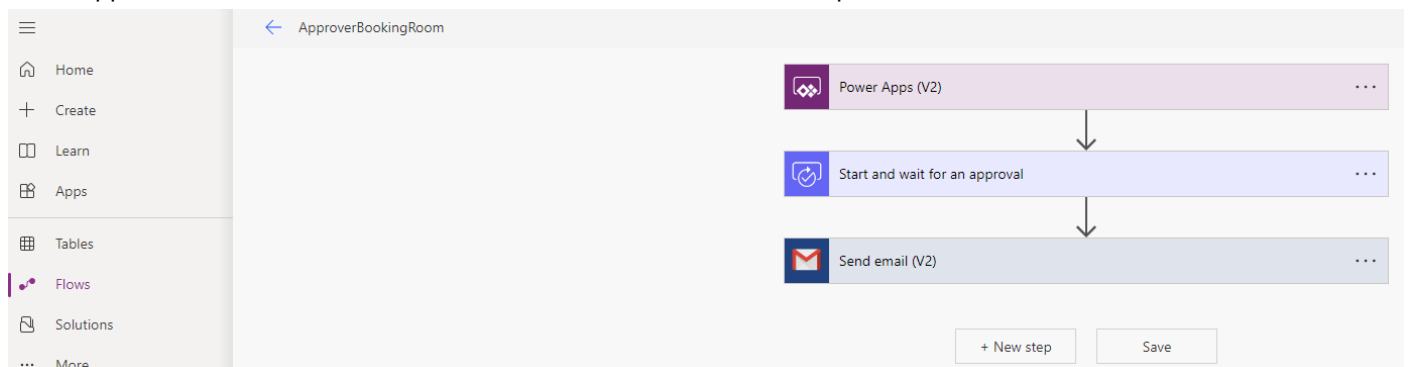
Notify("Your booking is sent to the Approver.");

ApproverBookingRoom.Run(RoomName.Selected.Value,
    Availability.Text,
    RequestorName.Text,
    Pax.SelectedText.Value,
    BookedDateStart.SelectedDate,
    Congregation.SelectedText.Value,
    Purpose.Text,
    RequestorEmail.Text,
    Room_ID.Selected.'Room ID',
    Level_Dropdown.SelectedText.Value,
    RequestorContact.Text,
    Ministry.SelectedText.Value,
    StartHour.SelectedText.Value,
    StartMin.SelectedText.Value,
    EndHour.SelectedText.Value,
    EndMin.SelectedText.Value,
    Requirements.Text,
    {file:{contentBytes:Rules.Image, name:"RulesRegulations.png"}}
);

Reset(Purpose);Reset(RequestorName);Reset(RequestorEmail);Reset(RequestorContact);
Navigate('Room Booking');

```

The flow of the 'ApproverBookingRoom' is as below: It will start the approval and send email to the Requestor on the status of the Approval once the 'Yes' button is clicked. See below for detailed explanations.



A typical example of the booking is shown below.

Level
Select Vacant room to book
No. of Persons

1
MPH (A)
55

Start Time
Start Date
End Time

10 30
7/16/2024
18 30

Room Availability
Room Details

Vacant
Children Church Camp

Name
Email
Contact

TAN THIAM HUAT
tanthiamhuat@yahoo.com
91502301

English
Others

Please prepare 4 tables and 10 chairs for registration purpose. Thanks.

Book

RoomDetails

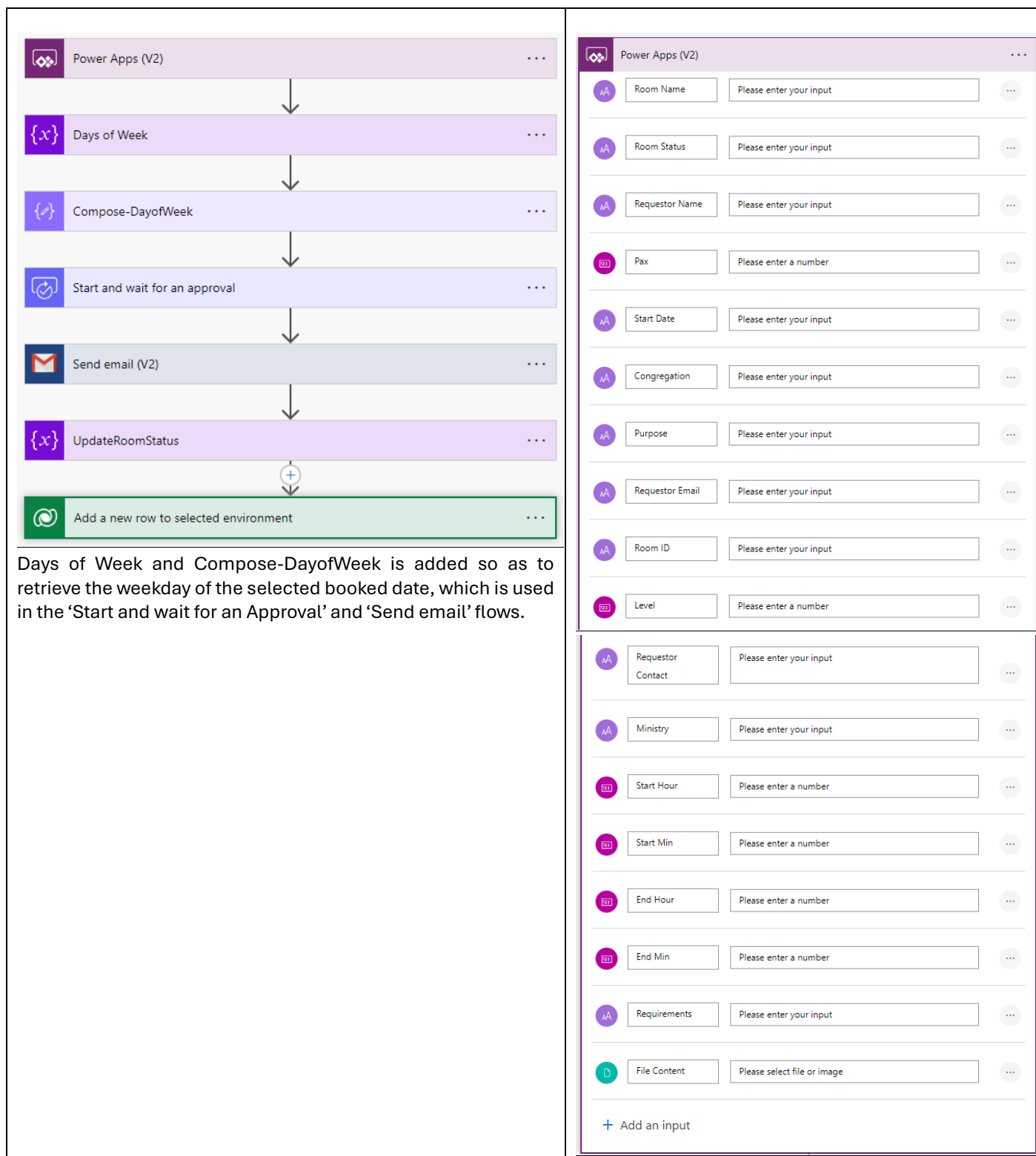
Room ID	Level	Room Name	Room Status	Start Date	End Date	Start Hour	Start Min	End Hour	End Min	Congregation
R101	1	MPH (A)	Booked	7/16/2024		10	30	18	30	English

RoomDetails

ingreg...	Ministry	Number of Persons	Purpose	Requirements	Requestor Name	Requestor Email	Requestor ...
zh	Others	55	Children Church Camp	Please prepare 4 tables and 10 chairs for registration pu...	TAN THIAM HUAT	tanthiamhuat@yahoo...	91502301

There is one main table named 'RoomDetails' used in Dataverse. After the booking is approved, the following columns in the 'RoomDetails' table will be updated: 'Room Status', 'Start Date', 'Start Hour', 'Start Min', 'End Hour', and 'End Min', 'Congregation', 'Ministry', 'Number of Persons', 'Purpose', 'Requirements', 'Requestor Name', 'Requestor Email' and 'Requestor Contact', as shown the above example.

Detailed explanations of the Flow.



In Power Apps (V2), we can add in different arguments like (Room Name, Room Status, Requestor Name, ..., Requestor End Hour, End Min, Requirements, and File Content), which those arguments would be used in the later part of the flow. The fourth and fifth flows are for the Approval and Sending email to the requestor on the outcome of the room booking. Variable 'UpdateRoomStatus' is initialized next.

Start and wait for an approval

Approval type

Approve/Reject - First to respond

Title

Approval for Room Booking

Assigned to

Details

Hello Admin,

A new room request has been created with the following details:

Requestor Name:

Requestor Name x

Requestor Email:

Requestor Email x

Requestor Contact:

Requestor Con... x

Purpose of Booking:

Purpose x

Requirements:

Requirements x

No. of Persons:

Pax x

Room Details:

Room Name x

Room Status: Room Status x

Booked Date:

Start Date x

Outputs x

Start Hour/Min:

Start Hour x

Start Min x

End Hour/Min:

End Hour x

End Min x

Congregation:

Congregation x

Ministry:

Ministry x

Please approve or reject based on the information.

Item link

Add a link to the item to approve

Item link description

Describe the link to the item

Show advanced options

Send email (V2)

To

Requestor Email x

Subject

Outcome for Room Booking

Body

Font

12 B I U

Dear Requestor Name x

Your room request below is approved.

Room Details:

Room Name x

Room Status: Room Status x

No. of Persons:

Pax x

Purpose:

Purpose x

Requirements:

Requirements x

Booked Date:

Start Date x

Outputs x

Start Hour/Min:

Start Hour x

Start Min x

End Hour/Min:

End Hour x

End Min x

Please read through the Rules & Regulations Governing Use of Church Premises attached.

Church Admin

Attachments Name - 1

RulesRegulations.png

Attachments Content -

File Content x

Attachments Content-Type - 1

Type of content in the attachment.

Add new item

Show advanced options

Above shows the Approval and Sending email to Requestor, using the arguments from the Power Apps (V2). In the 'Send email' flow, the 'RuleRegulations.png' picture file is attached to it.

Once the approval and email is sent, we need to add that particular row in the Dataverse table named 'RoomDetails'. This needs a more detailed explanation. First, we need to have a flow of '**Add a new row to selected environment**' from Dataverse, which will add a new row with the columns 'Room Status', 'Start Date', 'Start Hour', 'Start Min', 'End Hour', and 'End Min', 'Congregation', 'Ministry', 'Number of Persons', 'Purpose', 'Requirements', 'Requestor Name', 'Requestor Email' and 'Requestor Contact', updated according to the selected Room Name and Room ID.

Add a new row to selected environment

Environment

AIAD Test Environment

Table name

RoomDetails

Congregation

Congregation x

End Date

End Hour

End Hour x

End Min

End Min x

Import Sequence Number

Sequence number of the import that created this record.

Level

Level x

Ministry

Ministry x

Number of Persons

Pax x

Owner (Owners)

Owner Id

Purpose

Purpose x

Record Created On

Date and time that the record was migrated.

Requestor Contact

Requestor Con... x

Requestor Email

Requestor Email x

Requestor Name

Requestor Name x

Requirements

Requirements x

Room ID

Room ID x

Room Name

Room Name x

Room Status

UpdateRoomSt... x

RoomDetails

Unique identifier for entity instances

Start Date

Start Date x

Start Hour

Start Hour x

Start Min

Start Min x

Status Reason

Reason for the status of the RoomDetails

Time Zone Rule Version Number

For internal use only.

UTC Conversion Time Zone Code

Time zone code that was in use when the record was created.

To integrate the **Power Apps** application with the **Dataverse** table, we make use of the **Lookup** function. See <https://mindmajix.com/powerapps-lookup>

The screenshot shows the Power Apps interface. On the left is the 'Tree view' pane with a search bar and a list of components under 'App'. The main area displays a formula bar with the following code:

```
OnChange = fx
Set(
    varRoom,
    Lookup(RoomDetails_1, 'Room Name' = RoomName.SelectedText.Value && 'Room Status' = "Booked")
);
```

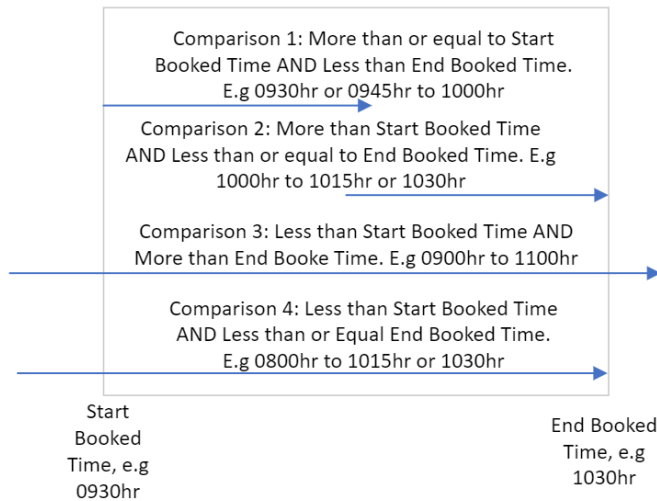
Below the formula bar is a booking form with the following fields:

- Level:** A dropdown menu with '1' selected.
- Select Vacant room to book:** A dropdown menu with 'MPH (A)' selected.
- No. of Persons:** A dropdown menu with '50' selected.
- Start Date:** A date picker showing '7/16/2024'.
- Start Time:** A time picker showing '10:30'.
- End Time:** A time picker showing '17:00'.
- Room Availability:** A green button labeled 'Vacant' and a blue button labeled 'Room Details'.
- Please state the purposes for booking:** A text input field.
- Name:** A text input field with placeholder text 'Enter your name here.'
- Email:** A text input field with placeholder text 'Enter your email here.'
- Contact:** A text input field with placeholder text 'Enter your contact here.'
- Language:** Two dropdown menus, one with 'English' and one with 'Others'.
- If Others, please state here. Requirement (if any):** A text input field.
- Book:** A blue button.

```
// Step 2a (Booked): Apply non-delegable function on the filtered data
/*If(
    CountRows(
        Filter(
            FilteredRooms,
            DateValue('Start Date') = BookedDateStart.SelectedDate &&
            (
                (
                    Value(StartHour.Selected.Value) * 60 + Value(StartMin.Selected.Value) >= Value(varRoom.'Start Hour') * 60 + Value(varRoom.'Start Min') &&
                    Value(StartHour.Selected.Value) * 60 + Value(StartMin.Selected.Value) < Value(varRoom.'End Hour') * 60 + Value(varRoom.'End Min')
                ) ||
                (
                    Value(EndHour.Selected.Value) * 60 + Value(EndMin.Selected.Value) > Value(varRoom.'Start Hour') * 60 + Value(varRoom.'Start Min') &&
                    Value(EndHour.Selected.Value) * 60 + Value(EndMin.Selected.Value) <= Value(varRoom.'End Hour') * 60 + Value(varRoom.'End Min')
                ) ||
                (
                    Value(StartHour.Selected.Value) * 60 + Value(StartMin.Selected.Value) < Value(varRoom.'Start Hour') * 60 + Value(varRoom.'Start Min') &&
                    Value(EndHour.Selected.Value) * 60 + Value(EndMin.Selected.Value) > Value(varRoom.'End Hour') * 60 + Value(varRoom.'End Min')
                ) ||
                (
                    Value(StartHour.Selected.Value) * 60 + Value(StartMin.Selected.Value) < Value(varRoom.'Start Hour') * 60 + Value(varRoom.'Start Min') &&
                    Value(EndHour.Selected.Value) * 60 + Value(EndMin.Selected.Value) <= Value(varRoom.'End Hour') * 60 + Value(varRoom.'End Min')
                )
            )
        )
    ) > 0,
    UpdateContext({Availability:"Booked", varLabelColor: Color.Red}),
    UpdateContext({Availability:"Vacant", varLabelColor: Color.Green})
); */
```

Once we set the variable **varRoom** for the room selected and Room Status = 'Booked' using **Lookup** function, we can have **If conditions** to determine the Availability of the room. Here, the **If conditions** check (for that particular Room Name selected and Room Status = 'Booked') whether

- Date Difference is zero between the Selected Date and the Booked Date.
- Filter:** Filters the 'RoomDetails' table to check if the booking overlaps with the already booked time slots. The hour timings are converted to minutes (by multiplying by 60) and added to the minute timings for comparison with the booked time slots. These comparisons are combined using 'OR', as illustrated below.



c) **CountRows:** Counts the number of records returned by the Filter function.

If all the conditions are True, then the Availability is set to 'Booked' with its red background colour. Otherwise, the Availability is set to 'Vacant' with its green background colour.

Because of the complexity of the different cases to check for the 'Booked' condition above, a much neater way is to first check for the 'Vacant' condition, and put a negate to those conditions, as seen below.

```

If(
    CountRows(
        Filter(
            FilteredRooms,
            DateValue('Start Date') = BookedDateStart.SelectedDate &&
            (
                Value(StartHour.Selected.Value) * 60 + Value(StartMin.Selected.Value) < Value(varRoom.'Start Hour') * 60 + Value(varRoom.'Start Min') &&
                Value(EndHour.Selected.Value) * 60 + Value(EndMin.Selected.Value) <= Value(varRoom.'Start Hour') * 60 + Value(varRoom.'Start Min')
            ) ||
            (
                Value(StartHour.Selected.Value) * 60 + Value(StartMin.Selected.Value) >= Value(varRoom.'End Hour') * 60 + Value(varRoom.'End Min')
            )
        )
    ) > 0,
    UpdateContext({Availability:"Booked", varLabelColor: Color.Red}),
    UpdateContext({Availability:"Vacant", varLabelColor: Color.Green})
);

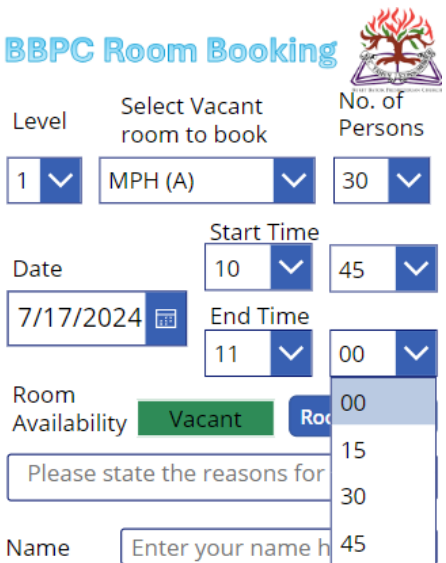
```

In this case, we want the Start Time selected to be less than the Start Booked Time AND the End Time selected to be less than or equal to the Start Booked Time OR the Start Time selected to be more than or equal to the End Booked Time. And with those conditions, we negate it with an exclamation sign (see green box above).

We make use of **UpdateContext** function to update the status of room availability. The context variable here is named **Availability**. Take note below for the context variable, there is **no quotes** around it.

The screenshot shows the BBPC Room Booking application interface. On the left is a 'Tree view' with 'Screens' and 'Components' tabs. The 'Screens' tab is active, showing a search bar and a list of screens: 'App', 'Rules_Agreement', 'Room Booking', 'Requirements', and 'Ministry'. The 'Room Booking' screen is selected. The main area displays the 'BBPC Room Booking' form. It includes fields for 'Level' (1), 'Select Vacant room to book' (MPH (A)), 'No. of Persons' (30), 'Date' (7/17/2024), 'Start Time' (12:00), and 'End Time' (12:15). The 'Room Availability' is shown as 'Vacant' in a green box, with a 'Room Details' button next to it.

To further enhance the Start Time and End Time such that user is not allowed to select the End Time to be earlier than the Start Time, the below code is added. For example, if the Start Time is 10.45am, the earliest End Time to be allowed is 11.00am. If the Start Time is 10.15am, the earliest End Time to be allowed is 10.30am.



BBPC Room Booking

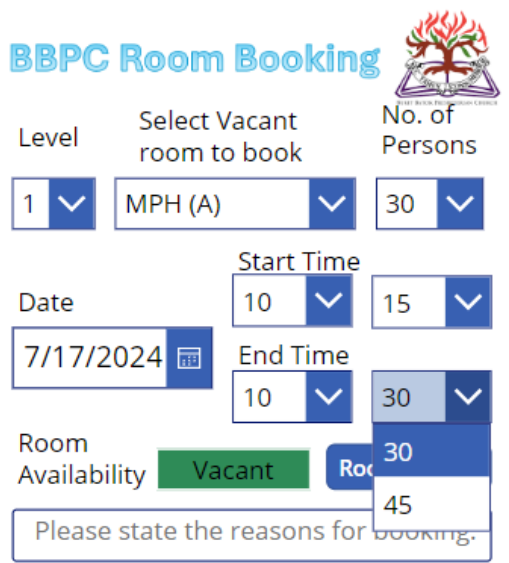
Level: 1 | Select Vacant room to book: MPH (A) | No. of Persons: 30

Date: 7/17/2024 | Start Time: 10:45 | End Time: 11:00

Room Availability: Vacant

Please state the reasons for booking.

Name: Enter your name here



BBPC Room Booking

Level: 1 | Select Vacant room to book: MPH (A) | No. of Persons: 30

Date: 7/17/2024 | Start Time: 10:15 | End Time: 10:30

Room Availability: Vacant

Please state the reasons for booking.

// OnStart property of the App

```
Set(_startHour, "09");
Set(_startMin, "30");
Set(_endHour, "10");
Set(_endMin, "45");
Set(_min45Selected, false);
```

// StartHour Drop-Down

```
StartHour.Items = ["08", "09", "10", "11", "12", "13", "14", "15", "16", "17", "18", "19", "20", "21"];
StartHour.Default = _startHour;
StartHour.OnChange = Set(_startHour, StartHour.Selected.Value);
If(
    _startHour > _endHour,
    Set(_endHour, _startHour)
);
```

// StartMin Drop-Down

```
StartMin.Items = ["00", "15", "30", "45"];
StartMin.Default = _startMin;
StartMin.OnChange = If(
    StartMin.Selected.Value = "45",
    Set(_min45Selected, true),
    Set(_min45Selected, false)
);
Set(_startMin, StartMin.Selected.Value);
```

// EndHour Drop-Down

```
EndHour.Items = If(
    _min45Selected,
    Filter(["08", "09", "10", "11", "12", "13", "14", "15", "16", "17", "18", "19", "20", "21"], Value(ThisRecord) > _startHour),
    Filter(["08", "09", "10", "11", "12", "13", "14", "15", "16", "17", "18", "19", "20", "21"], Value(ThisRecord) >= _startHour)
);
```

```
EndHour.Default = _endHour;
EndHour.OnChange = Set(_endHour, EndHour.Selected.Value);
```

```
// EndMin Drop-Down
EndMin.Items = If(
    _startHour = _endHour,
    Switch(
        _startMin,
        "00", ["15", "30", "45"],
        "15", ["30", "45"],
        "30", ["45"],
        "45", ["00", "15", "30", "45"]
    ),
    ["00", "15", "30", "45"]
);
EndMin.Default = _endMin;
EndMin.OnChange = Set(_endMin, EndMin.Selected.Value);
```

- The If function is used to check a condition and return different values based on whether the condition is true or false. The condition being checked is whether _startHour is equal to _endHour.
- If the condition is true (_startHour = _endHour), it returns the result of the Switch function.
- If the condition is false (_startHour ≠ _endHour), it returns the full list of minute options: ["00", "15", "30", "45"].

Switch Function

The Switch function evaluates an expression against a set of possible matches (cases) and returns the corresponding result. In this case, it evaluates _startMin.

- _startMin is the expression being evaluated.
- The subsequent pairs of values are the cases and their corresponding results.
- If _startMin is 00, it returns ["15", "30", "45"].
- If _startMin is 15, it returns ["30", "45"].
- If _startMin is 30, it returns ["45"].
- If _startMin is 45, it returns ["00", "15", "30", "45"] (rolling over to the next hour).

This logic ensures that the user can only select an EndMin that is logically after the StartMin when the start and end hours are the same.

The screenshot displays the Microsoft Dynamics 365 interface. On the left, the 'Tree view' pane shows the 'Screens' tab with a search bar and a list of screens: 'Book', 'Pax', 'RoomName', and 'EndTime'. The 'RoomName' screen is selected. The main area shows a formula bar with the following expression: `Distinct(SortByColumns(Filter(Rooms, Level = Level_Dropdown.Selected.Value), "cr042_roomid", SortOrder.Ascending), 'Room Name')`. Below the formula bar, there are buttons for 'Format text', 'Remove formatting', and 'Find and replace'. On the right, a form is visible with several fields: 'Level' (dropdown menu), 'Select Vacant room to book' (dropdown menu), 'No. of Persons' (dropdown menu), 'Date' (calendar icon), 'Start Time' (dropdown menu), and 'End Time' (dropdown menu).

Above ensures that the Room Name is filtered by the Level, sorted by the Room ID, and having distinct of its Room Name.

BBPC Room Booking



IMPORTANT : PLEASE READ "RULES & REGULATIONS GOVERNING USE OF CHURCH PREMISES"

1. Only members worshipping at Bukit Batok Presbyterian Church or authorised organization are allowed to use the Church premises for church activities only.
2. Mondays and Public Holidays in general are rest days. No activities except for Christian celebrations like Good Friday and Christmas day can be held in the Church premise.
3. Notice of bookings should be given at least 3 working days in advance. Immediate booking or short notice will not be entertained. Any exception will be reviewed accordingly.
4. The applicant should inform Admin Office 3 working days in advance of any changes or cancellation of room booking.
5. All bookings must be made in the filled-up form with the Administrator.
6. All activities must end by 9.30pm unless approval is sought and granted. Any requirement of extension from 9.30pm has to be reviewed and arranged for the extended coverage.
7. Kindly switch off all lights & air-conditioner and electrical equipments, arrange chairs & table, clear the premises before leaving.
8. No food and drinks allowed in carpet premises.
9. Only light refreshment & finger food are allowed in rooms with tiles except Multi-Purpose Hall and reception lobby.
10. No smoking or consumption of alcohol is allowed within the church premises.
11. No shifting of equipment & furniture from one room to another is allowed unless permission is sought and granted prior to the changes required.
12. There should be a minimum of four persons for the booking of a small room.
13. The applicant is responsible and accountable for any damage to church properties.
14. In the event of any dispute arising from the interpretation of these rules or from any circumstances not covered by the foregoing rules, the decision of the House Property Convenor or Church Administrator will be final.
15. The applicants using the premise are responsible and accountable to all circumstantial consequences that happen.

- ☐ I have read & understood, and agree to abide by the Church's rules & regulations. I will be responsible for any damage of church properties in the duration of the use of the premises.
- ☒ Permission must be granted by the Ministry/Fellowship Leader before submitting this e-form to the Admin Office.
- ☒ By submitting the e-form, I give consent to the collection & processing of my personal information for booking of premises.

Next

This 'Rules & Regulations' would be the first landing page. Only if those 3 checkboxes are ticked, would the app proceeds to the next page.

A prompt message will appear if any of those checkboxes is not ticked.



Please tick all the checkboxes.

The Approval for Room Booking for each booking will show not only the date of the booking but also the day of the week, for example, 7/16/2024 (Tuesday). This Approval for Room Booking can be accessed via both email and the mobile app.

Approval for Room Booking	
<div><div><div>Requester's Profile</div><div><div>TJH</div></div></div><div><div>Requested by</div><div><div></div></div></div><div><div>Hello Admin,</div><div><div>A new room request has been created with the following details:</div><div><div>Requestor Name: TAN THIAM HUAT</div><div>Requestor Email: tanthiamhuat@yahoo.com</div><div>Requestor Contact: 91502301</div><div>Purpose of Booking: Children Church Camp</div><div>Requirements: Please prepare 4 tables and 10 chairs for registration purpose. Thanks.</div><div>No. of Persons: 55</div><div>Room Details:</div><div>MPH (A), Room Status: Vacant,</div><div>Booked Date: 7/16/2024 (Tuesday)</div><div>Start Hour/Min: 10:30</div><div>End Hour/Min: 18:30</div><div>Congregation: English</div><div>Ministry: Others</div></div><div><div>Please approve or reject based on the information.</div><div>Date Created: Sunday, July 14, 2024 1:45 PM GMT</div></div><div><div>Approve ></div><div>Reject ></div></div></div></div></div>	<div><div>Outcome for Room Booking</div><div><div><div></div><div><div>tanthiamhuat@gmail.com</div><div>From: tanthiamhuat@gmail.com</div><div>To: tanthiamhuat@yahoo.com</div></div></div><div><div>Dear TAN THIAM HUAT,</div><div>Your room request below is approved.</div><div><div>Room Details:</div><div>MPH (A), Room Status: Vacant,</div><div>No. of Persons: 55</div><div>Purpose: Children Church Camp</div><div>Requirements: Please prepare 4 tables and 10 chairs for registration purpose. Thanks.</div><div>Booked Date: 7/16/2024 (Tuesday)</div><div>Start Hour/Min: 10:30</div><div>End Hour/Min: 18:30</div></div><div><div>Please read through the Rules & Regulations Governing Use of Church Premises attached.</div><div>Church Admin</div></div><div><div><div>RulesRegul... .png</div><div>76.7KB</div></div></div><div>Once the approval is done, the Requestor will receive the above email with the 'Rules and Regulations' in PNG format attached as shown below.</div></div></div></div>

IMPORTANT : PLEASE READ "RULES & REGULATIONS GOVERNING USE OF CHURCH PREMISES"

1. Only members worshipping at Bukit Batok Presbyterian Church or authorised organization are allowed to use the Church premises for church activities only.

2. Mondays and Public Holidays in general are rest days. No activities except for Christian celebrations like Good Friday and Christmas day can be held in the Church premise.

3. Notice of bookings should be given at least 3 working days in advance. Immediate booking or short notice will not be entertained. Any exception will be reviewed accordingly.

4. The applicant should inform Admin Office 3 working days in advance of any changes or cancellation of room booking.

5. All bookings must be made in the filled-up form with the Administrator.

6. All activities must end by 9.30pm unless approval is sought and granted. Any requirement of extension from 9.30pm has to be reviewed and arranged for the extended coverage.

7. Kindly switch off all lights & air-conditioner and electrical equipments, arrange chairs & table, clear the premises before leaving.

8. No food and drinks allowed in carpet premises.

9. Only light refreshment & finger food are allowed in rooms with tiles except Multi-Purpose Hall and reception lobby.

10. No smoking or consumption of alcohol is allowed within the church premises.

11. No shifting of equipment & furniture from one room to another is allowed unless permission is sought and granted prior to the changes required.

12. There should be a minimum of four persons for the booking of a small room.

13. The applicant is responsible and accountable for any damage to church properties.

14. In the event of any dispute arising from the interpretation of these rules or from any circumstances not covered by the foregoing rules, the decision of the House Property Convenor or Church Administrator will be final.

15. The applicants using the premise are responsible and accountable to all circumstantial consequences that happen.

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Cancel Booking feature is added with the 'Cancel Booking' button. The three mandatory inputs before proceeding with Cancel Booking are Name, Email, and Contact.



BBPC Room Booking

Level
Select Vacant room to book
No. of Persons

1
MPH (A)
30

Start Date
Start Time

7/19/2024
09 30

End Time

10 00

Room Availability
Vacant
Room Details

Please state the purposes for booking.

Name
TAN THIAM HUAT

Email
tanthiamhuat@yahoo.com

Contact
91502301

English
Cell Group

If Others, please state here. Requirement (if any)

Book
Cancel Booking

Select the correct booking which you need to cancel.

Name: TAN THIAM HUAT
Room ID 6363-a283
Email: tanthiamhuat@yahoo.com
Room WEST SANCTUARY
Contact: 91502301
Purpose English Church
Start Date 2024-07-20
Start - End Time 0830 - 1000

Name: TAN THIAM HUAT
Room ID 5739-ebd4
Email: tanthiamhuat@yahoo.com
Room WEST SANCTUARY
Contact: 91502301
Purpose English Church
Start Date 2024-07-20
Start - End Time 0830 - 1000

Name: TAN THIAM HUAT
Room ID c13d-2bba
Email: tanthiamhuat@yahoo.com
Room MPH (A)
Contact: 91502301
Purpose Racial Harmony
Start Date 2024-07-20
Start - End Time 0930 - 1200

Name: TAN THIAM HUAT
Room ID 88c5-96f2
Email: tanthiamhuat@yahoo.com
Room WEST SANCTUARY
Contact: 91502301
Purpose Racial Harmony
Start Date 2024-07-25
Start - End Time 0930 - 1200

Name: TAN THIAM HUAT
Room ID 1e7a-9015
Email: tanthiamhuat@yahoo.com
Room L3 ROOM 1
Contact: 91502301
Purpose Children Camp
Start Date 2024-07-25
Start - End Time 0930 - 1200

Cancel Booking

Items
= fx
Filter(RoomDetails_1, 'Requestor Email' = RequestorEmail.Text)
Data type: Table

Tree view
Screens
Components

Search
New screen

App
Rules_Agreement
Rule_Heading
RulesDetails
Next
Rule3
Rule2
Rule1
bbpc_logo
BBPC_RoomBooking
Rules
Room Booking
Are You Sure_Booking
Are You Sure_CancelBooking
Cancel Bookings

Select the correct booking which you need to cancel.

Name:
Room ID
Email:
Room
Contact:
Purpose
Start Date
Start - End Time
00 - 00

Cancel Booking

A Gallery is used here to store the information of the booking, which is filtered by the Requestor's email.

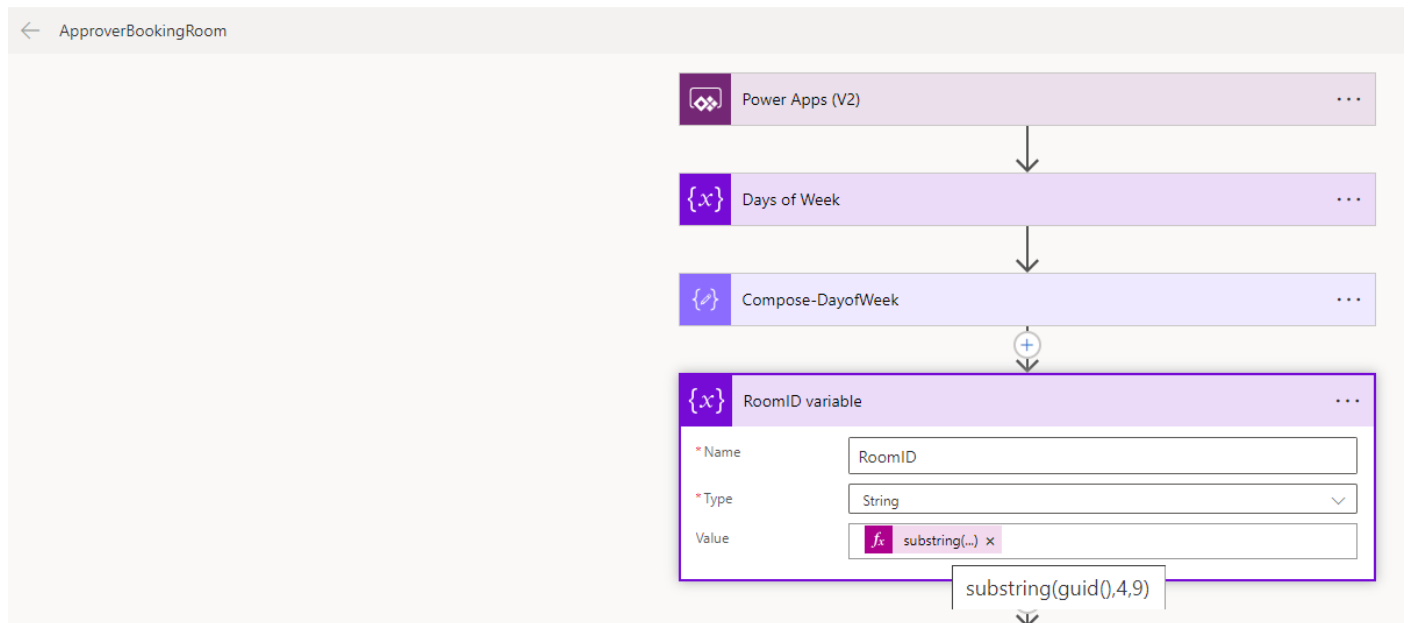
OnSelect
= fx
RemoveIf(RoomDetails_1, 'Room ID' = CancelBookingGallery.Selected.'Room ID');

Set the OnSelect property of the 'Cancel Booking' button to:

RemoveIf(RoomDetails_1, 'Room ID' = CancelBookingGallery.Selected.'Room ID');

This assumes that there is a unique identifier 'Room ID' for each booking in the 'RoomDetails_1'.

The unique identifier 'Room ID' is generated in the Flow using the [GUID function](#), and only a substring of it is used.



RoomDetails											
Room ID	Level	Room Name	Room Status	Start Date	End Date	Start Hour	Start Min	End Hour	End Min	Congreg	
2593-2e64	3	L3 ROOM 5	Booked	7/19/2024		9	30	12	30	English	
36a1-7fc1	1	MPH (B)	Booked	7/24/2024		15	30	17	45	English	
3ca8-6a6a	2	EAST SANCTUARY	Booked	7/21/2024		8	30	10	15	English	
ba4a-6b76	3	L3 ROOM 1	Booked	7/19/2024		19	30	20	30	English	
e5f5-af56	1	MPH (A)	Booked	7/25/2024		10	30	12	30	English	

Above shows the 'RoomDetails' table with the Room ID's unique identifier.

The system will ask for confirmation once the 'Cancel Booking' is pressed. If the 'No' button is pressed, it will return to the previous Cancel Booking screen. If the 'Yes' button is pressed, a message will inform you that your booking has been cancelled, and it will then return to the original booking screen. A cancellation email will be sent to the requestor.

Select the correct booking which you need to cancel.

Name: TAN THIAM HUAT Room ID 6363-a283
Email: tanthiamhuat@yahoo.com Room WEST SANCTUARY
Contact: 91502301 Purpose English Church
Start Date 2024-07-20 Start - End Time 0830 - 1000

Name: TAN THIAM HUAT Room ID 5739-ebd4
Email: tanthiamhuat@yahoo.com Room WEST SANCTUARY
Contact: 91502301 Purpose English Church
Start Date 2024-07-20 Start - End Time 0830 - 1000

Name: TAN THIAM HUAT Room ID c13d-2bba
Email: tanthiamhuat@yahoo.com Room MPH (A)
Contact: 91502301 Purpose Racial Harmony
Start Date 2024-07-20 Start - End Time 0930 - 1200

Name: TAN THIAM HUAT Room ID 88c5-96f2
Email: tanthiamhuat@yahoo.com Room WEST SANCTUARY
Contact: 91502301 Purpose Racial Harmony
Start Date 2024-07-25 Start - End Time 0930 - 1200

Name: TAN THIAM HUAT Room ID 1e7a-9015
Email: tanthiamhuat@yahoo.com Room L3 ROOM 1
Contact: 91502301 Purpose Children Camp
Start Date 2024-07-25 Start - End Time 0930 - 1200

Cancel Booking

Are you sure you want to cancel that particular booking?

NoYes

Your booking is cancelled.

Cancellation of Room Booked

TT

From: tanthiamhuat@gmail.com
To: tanthiamhuat@yahoo.com

Dear TAN THIAM HUAT,

Your room cancellation below is confirmed.

Room Details: RoomID: 1e7a-9015
Room Name: L3 ROOM 1
Purpose: Children Camp
Booked Date: 2024-07-25 (Thursday)
Start Hour/Min: 09:30
End Hour/Min: 12:00

Church Admin

Named Formulas

Named formulas in Power Apps are essentially variables that are calculated once when the app loads and can be referenced throughout the app. By using named formulas, you can calculate the collections or other data sources when the app loads, rather than recalculating them every time the app is launched.

See <https://www.microsoft.com/en-us/power-platform/blog/power-apps/power-fx-introducing-named-formulas/>

Because the below logic needs to be repeated over many of the controls (RoomName dropdown, BookedDateStart Date Picker, BookedDateEnd Data Picker, StartHour, StartMin, EndHour, EndMin), the logic is put into **Named Formulas** in a single centralized location which can be reused over different controls.

```
If(
    CountRows(
        Filter(
            FilteredRooms,
            DateValue('Start Date') = BookedDateStart.SelectedDate &&
            (
                Value(StartHour.Selected.Value) * 60 + Value(StartMin.Selected.Value) < Value(varRoom.'Start Hour') * 60 + Value(varRoom.'Start Min') &&
                Value(EndHour.Selected.Value) * 60 + Value(EndMin.Selected.Value) <= Value(varRoom.'Start Hour') * 60 + Value(varRoom.'Start Min')
            ) ||
            (
                Value(StartHour.Selected.Value) * 60 + Value(StartMin.Selected.Value) >= Value(varRoom.'End Hour') * 60 + Value(varRoom.'End Min')
            )
        )
    ) > 0,
    UpdateContext({Availability:"Booked", varLabelColor: Color.Red}),
    UpdateContext({Availability:"Vacant", varLabelColor: Color.Green})
);
```

To put the logic into formulas, use *App.Formulas* property as shown. Notice now the *DateTimeValue* is used for comparison, instead of the previous of time comparison.

```
StartDateTime_Selected = Text(BookedDateStart.SelectedDate, "yyyy-mm-dd") & "T" & Text(StartHour.SelectedText.Value) & ":" & Text(StartMin.SelectedText.Value);
EndDateTime_Selected = Text(BookedDateEnd.SelectedDate, "yyyy-mm-dd") & "T" & Text(EndHour.SelectedText.Value) & ":" & Text(EndMin.SelectedText.Value);

StartDateTime_Booked = Text(Value(varRoom.'Start Date'), "yyyy-mm-dd") & "T" & Value(varRoom.'Start Hour') & ":" & Value(varRoom.'Start Min');
EndDateTime_Booked = Text(Value(varRoom.'End Date'), "yyyy-mm-dd") & "T" & Value(varRoom.'End Hour') & ":" & Value(varRoom.'End Min');

NamedFormula_Availability = If(
    CountRows(
        Filter(
            FilteredRooms,
            !(
                DateTimeValue(StartDateTime_Selected) < DateTimeValue(StartDateTime_Booked) &&
                DateTimeValue(EndDateTime_Selected) <= DateTimeValue(StartDateTime_Booked)
            ) ||
            (
                DateTimeValue(StartDateTime_Selected) >= DateTimeValue(EndDateTime_Booked)
            )
        )
    ) > 0,
    "Booked",
    "Vacant"
);

NamedFormula_varLabelColor = If(
    CountRows(
        Filter(
            FilteredRooms,
            !(
                DateTimeValue(StartDateTime_Selected) < DateTimeValue(StartDateTime_Booked) &&
                DateTimeValue(EndDateTime_Selected) <= DateTimeValue(StartDateTime_Booked)
            ) ||
            (
                DateTimeValue(StartDateTime_Selected) >= DateTimeValue(EndDateTime_Booked)
            )
        )
    ) > 0,
    Color.Red,
    Color.Green
);
```


The Named Formulas (*NamedFormula_Availability* and *NamedFormula_varLabelColor*) is used is shown below.

To test the logic in the Named Formulas thoroughly, we test out the last entries of the ‘Booked’ row in ‘RoomDetails’ with Room Name MPH (A) and Start Date of 7/27/2024, End Date 7/29/2024, StartTime 1530 and EndTime 1745.

Room ID	Level	Room Name	Room Status	Start Date	End Date	Start Hour	Start Min	End Hour	End Min	Congregation	Ministry
5b79-0649	2	WEST SANCTUARY	Booked	7/28/2024	7/28/2024	8	30	10	30	English	Cell Group
5d16-ec46	3	L3 ROOM 4	Booked	7/24/2024	7/24/2024	9	30	12	45	English	Cell Group
8894-bfee	1	MPH (B)	Booked	7/25/2024	7/27/2024	9	30	21	15	English	Sunday School
a446-b789	1	MPH (A)	Booked	7/27/2024	7/29/2024	15	30	17	45	English	Others

The above Name Formulas is double checked with other entries in the Dataverse table and found to be not working well. It is found that to retrieve the records from the Dataverse table, ‘varRoom’ is used wrongly here.

Instead, we should use the **Schema Name** (*cr042_***) for each column of (*startdate*, *enddate*, *starthour*, *startmin*, *endhour*, *endmin*) from the **Dataverse table**. In this case here, we also simplified the conditions to check:

!(EndDateTime_Selected <= BookedStartDateTime OR StartDateTime_Selected >= BookedEndDateTime)

after filtering the *Room Status* to be ‘Booked’ and the *RoomName* selected.

```

StartDateTime_Selected = Text( BookedDateStart.SelectedDate, "yyyy-mm-dd") & " " & Text(StartHour.SelectedText.Value) & ":" & Text(StartMin.SelectedText.Value);
EndDateTime_Selected = Text( BookedDateEnd.SelectedDate, "yyyy-mm-dd") & " " & Text(EndHour.SelectedText.Value) & ":" & Text(EndMin.SelectedText.Value);

NamedFormula_Availability = If(
    CountRows(
        Filter(
            RoomDetails_1,
            'Room Status' = "Booked" && 'Start Date' >= Today() && 'Room Name' = RoomName.Selected.Value
        ),
        !(DateTimeValue(EndDateTime_Selected) <= DateTimeValue(
            Concatenate(
                Text(
                    cr042_startdate,
                    "yyyy-mm-dd"
                ),
                " ",
                cr042_starthour,
                ":",
                If(
                    cr042_startmin = 0,
                    "00",
                    cr042_startmin
                )
            )
        ) || DateTimeValue(StartDateTime_Selected) >= DateTimeValue(
            Concatenate(
                Text(
                    cr042_enddate,
                    "yyyy-mm-dd"
                ),
                " ",
                cr042_endhour,
                ":",
                If(
                    cr042_endmin = 0,
                    "00",
                    cr042_endmin
                )
            )
        )
    ) > 0,
    "Booked",
    "Vacant"
);

```

Level	Room Name	Room Status	Start Date	End Date	Start Hour	Start Min	End Hour	End Min	Congregation
2	WEST SANCTUARY	Booked	7/28/2024	7/28/2024	8	30	10	30	English
3	L3 ROOM 4	Booked	7/27/2024	7/27/2024	9	30	12	45	English
1	MPH (B)	Booked	7/25/2024	7/27/2024	9	30	21	15	English
1	MPH (A)	Booked	7/25/2024	7/25/2024	14	45	16	0	English
3	L3 ROOM 4	Booked	7/27/2024	7/27/2024	8	0	8	45	English
1	MPH (A)	Booked	7/27/2024	7/29/2024	15	30	17	45	English

Below table shows the different tests on the Room Name *MHP (A)* for both One Day booking (7/25/2024) and Block booking (7/27/2024 to 7/29/2024)

<div> <div>Level</div> <div>Select Vacant room to book</div> <div>Types of Booking</div> </div> <div> <div>1</div> <div>MPH (A)</div> <div>One Day</div> </div> <div> <div>Start Date</div> <div>7/25/2024</div> <div>Start Time</div> <div>08:15</div> </div> <div> <div>End Date</div> <div>7/25/2024</div> <div>End Time</div> <div>14:45</div> </div> <div> <div>Room Availability</div> <div>Vacant</div> <div>Room Details</div> </div>	<div> <div>Level</div> <div>Select Vacant room to book</div> <div>Types of Booking</div> </div> <div> <div>1</div> <div>MPH (A)</div> <div>One Day</div> </div> <div> <div>Start Date</div> <div>7/25/2024</div> <div>Start Time</div> <div>14:45</div> </div> <div> <div>End Date</div> <div>7/25/2024</div> <div>End Time</div> <div>16:45</div> </div> <div> <div>Room Availability</div> <div>Booked</div> <div>Room Details</div> </div>	<div> <div>Level</div> <div>Select Vacant room to book</div> <div>Types of Booking</div> </div> <div> <div>1</div> <div>MPH (A)</div> <div>One Day</div> </div> <div> <div>Start Date</div> <div>7/25/2024</div> <div>Start Time</div> <div>15:45</div> </div> <div> <div>End Date</div> <div>7/25/2024</div> <div>End Time</div> <div>18:45</div> </div> <div> <div>Room Availability</div> <div>Booked</div> <div>Room Details</div> </div>	<div> <div>Level</div> <div>Select Vacant room to book</div> <div>Types of Booking</div> </div> <div> <div>1</div> <div>MPH (A)</div> <div>One Day</div> </div> <div> <div>Start Date</div> <div>7/25/2024</div> <div>Start Time</div> <div>16:00</div> </div> <div> <div>End Date</div> <div>7/25/2024</div> <div>End Time</div> <div>18:45</div> </div> <div> <div>Room Availability</div> <div>Vacant</div> <div>Room Details</div> </div>
<div> <div>Level</div> <div>Select Vacant room to book</div> <div>Types of Booking</div> </div> <div> <div>1</div> <div>MPH (A)</div> <div>One Day</div> </div> <div> <div>Start Date</div> <div>7/25/2024</div> <div>Start Time</div> <div>16:00</div> </div> <div> <div>End Date</div> <div>7/27/2024</div> <div>End Time</div> <div>15:30</div> </div> <div> <div>Room Availability</div> <div>Vacant</div> <div>Room Details</div> </div>	<div> <div>Level</div> <div>Select Vacant room to book</div> <div>Types of Booking</div> </div> <div> <div>1</div> <div>MPH (A)</div> <div>One Day</div> </div> <div> <div>Start Date</div> <div>7/25/2024</div> <div>Start Time</div> <div>16:00</div> </div> <div> <div>End Date</div> <div>7/27/2024</div> <div>End Time</div> <div>15:45</div> </div> <div> <div>Room Availability</div> <div>Booked</div> <div>Room Details</div> </div>	<div> <div>Level</div> <div>Select Vacant room to book</div> <div>Types of Booking</div> </div> <div> <div>1</div> <div>MPH (A)</div> <div>One Day</div> </div> <div> <div>Start Date</div> <div>7/27/2024</div> <div>Start Time</div> <div>08:00</div> </div> <div> <div>End Date</div> <div>7/29/2024</div> <div>End Time</div> <div>16:45</div> </div> <div> <div>Room Availability</div> <div>Booked</div> <div>Room Details</div> </div>	<div> <div>Level</div> <div>Select Vacant room to book</div> <div>Types of Booking</div> </div> <div> <div>1</div> <div>MPH (A)</div> <div>One Day</div> </div> <div> <div>Start Date</div> <div>7/29/2024</div> <div>Start Time</div> <div>17:45</div> </div> <div> <div>End Date</div> <div>7/29/2024</div> <div>End Time</div> <div>18:45</div> </div> <div> <div>Room Availability</div> <div>Vacant</div> <div>Room Details</div> </div>

Below table shows the different tests on the Room Name *L3 ROOM 4* for One Day booking (7/27/2024) on two time slots.

Level	Select Vacant room to book	Types of Booking	Level	Select Vacant room to book	Types of Booking	Level	Select Vacant room to book	Types of Booking	Level	Select Vacant room to book	Types of Booking
3	L3 ROOM 4	One Day	3	L3 ROOM 4	One Day	3	L3 ROOM 4	One Day	3	L3 ROOM 4	One Day
Start Date	Start Time		Start Date	Start Time		Start Date	Start Time		Start Date	Start Time	
7/27/2024	08 00		7/27/2024	09 00		7/27/2024	09 30		7/27/2024	13 30	
End Date	End Time		End Date	End Time		End Date	End Time		End Date	End Time	
7/27/2024	09 00		7/27/2024	09 30		7/27/2024	13 45		7/27/2024	15 45	
Room Availability	Booked	Room Details	Room Availability	Vacant	Room Details	Room Availability	Booked	Room Details	Room Availability	Vacant	Room Details