Bring clarity to your model using the Gantt Chart

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Objective of this webinar

Improve your understanding of the AIMMS Gantt Chart and its basic functionalities.

Demonstrate how to use the Gantt Chart effectively to get a clear insight into scheduling data, such as job schedule, resource allocation, staffing etc.

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The Gantt Chart

> Very useful to display interrelated jobs across multiple resources over time.

> Mostly used for scheduling,

- Project management,
- Job scheduling,
- Resource allocation.

> Gives access to a lot of information.

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The Model

> Efficient room allocation

> Doctor's appointment

- Start time
- Duration

> Room schedule is obscure and confusing

Appointment	Start	Duration	Room
MD1.01	8:00	20	1
MD1.02	8:20	20	6
MD1.03	8:40	20	1
MD1.04	9:00	20	7
MD1.05	9:20	20	4
MD1.06	9:40	20	2
MD1.07	10:00	20	4
MD1.08	10:20	20	2
MD1.09	10:40	20	5
MD1.10	11:00	20	4
MD1.11	11:20	20	5
MD2.01	8:00	20	2
MD2.02	8:20	20	7
MD2.03	8:40	20	4
MD2.04	9:00	20	2
MD2.05	9:20	20	1
MD2.06	9:40	20	5
MD2.07	10:00	20	7
MD2.08	10:20	20	3
MD2.09	10:40	20	1
MD2.10	11:00	20	6
MD2.11	11:20	20	1
MD3.01	8:35	20	2
MD3.02	9:35	20	7
MD3.03	10:35	20	4
MD4.01	8:00	60	5
MD4.02	9:00	60	3
MD4.03	10:00	60	8
MD4.04	11:00	60	2
MD5.01	8:00	40	3
MD5.02	8:40	40	8
MD5.03	9:20	40	6
MD5.04	10:00	20	1
MD5.05	10:40	20	6
MD5.06	11:20	20	7
MD5.07	12:00	40	3

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The Team

>Mike – Medical Assistant

>Claire – Clinic administrator

>Dave – Model developer

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Action plan

>Basic setup of the Gantt Chart

>End-User features

>Advanced adjustments

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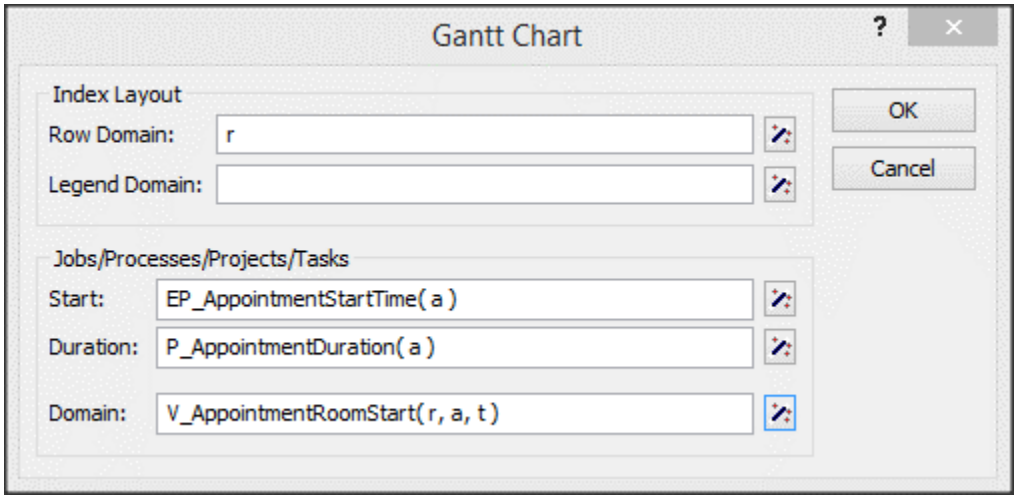
Setup

> Gantt Chart icon

> Setup wizard

- Identifier indicating job start time
- Identifier indicating job duration
- Identifier indicating job domain
- Optional adjustments
  - Row domain
  - Legend Domain



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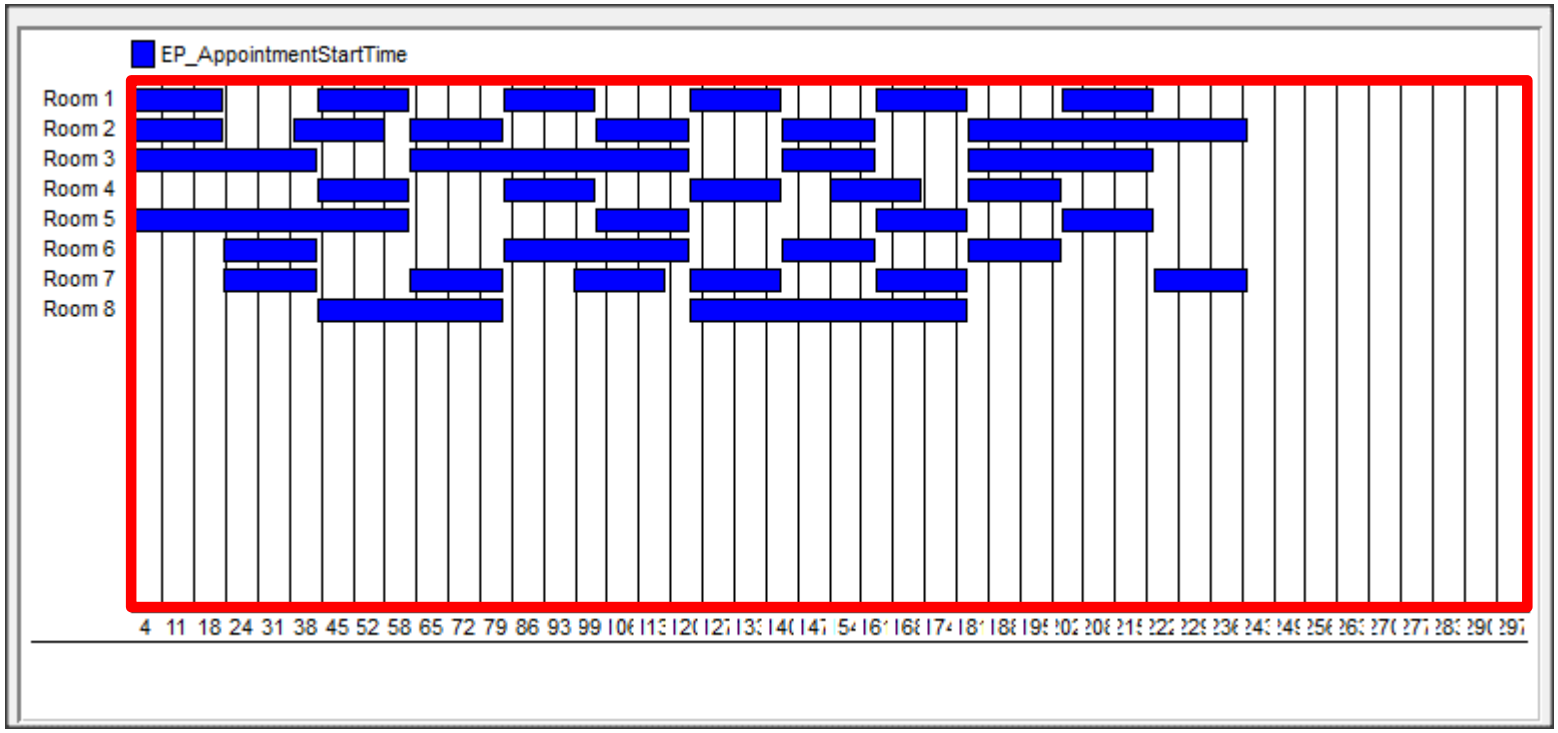
Setup

> Job start / duration / legend



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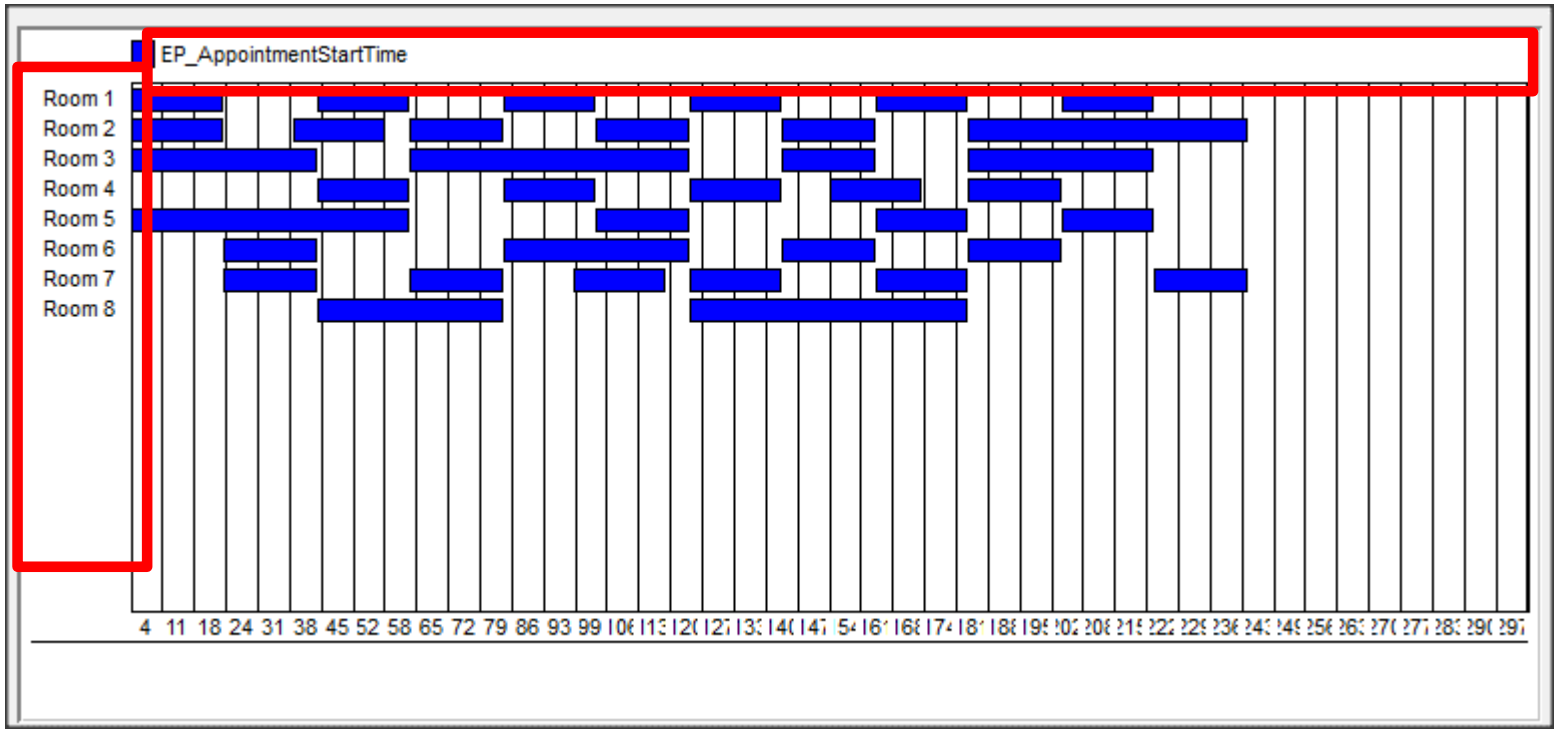
Setup

> Row / Legend domain



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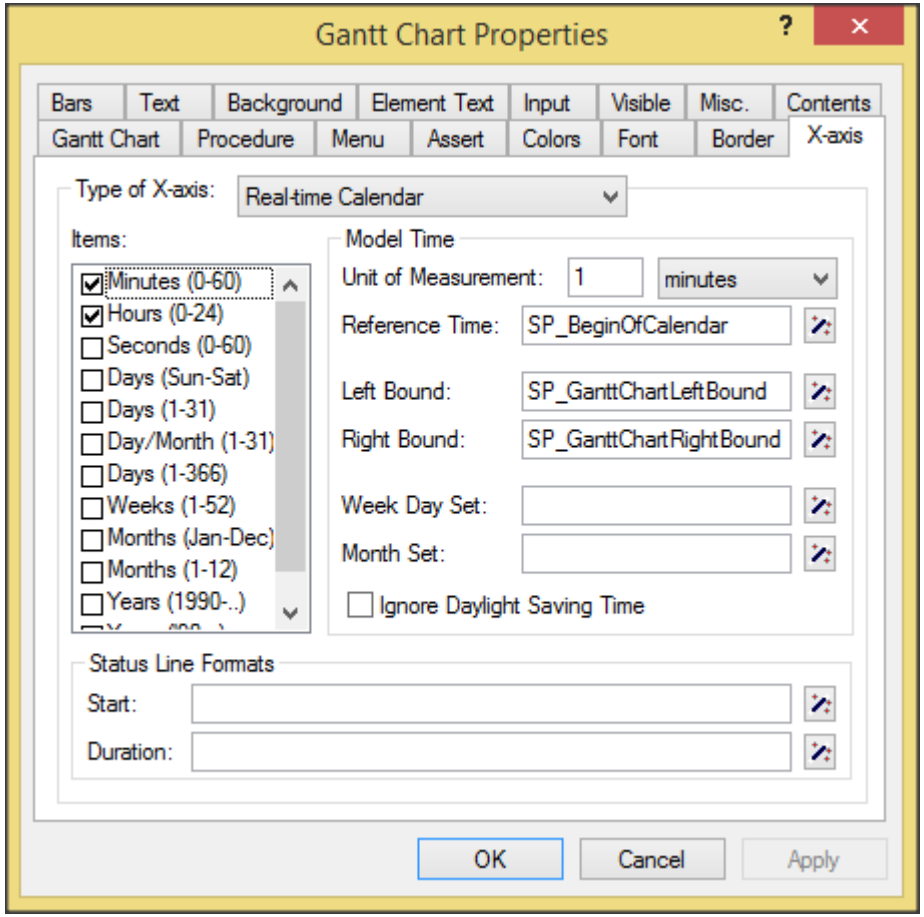
Time Axis

>Change the axis to a "Real-time Calendar"

>Adjust the x-axis

- Units on the x-axis
- Unit of measurement
- Reference time
- Left Bound
- Right Bound



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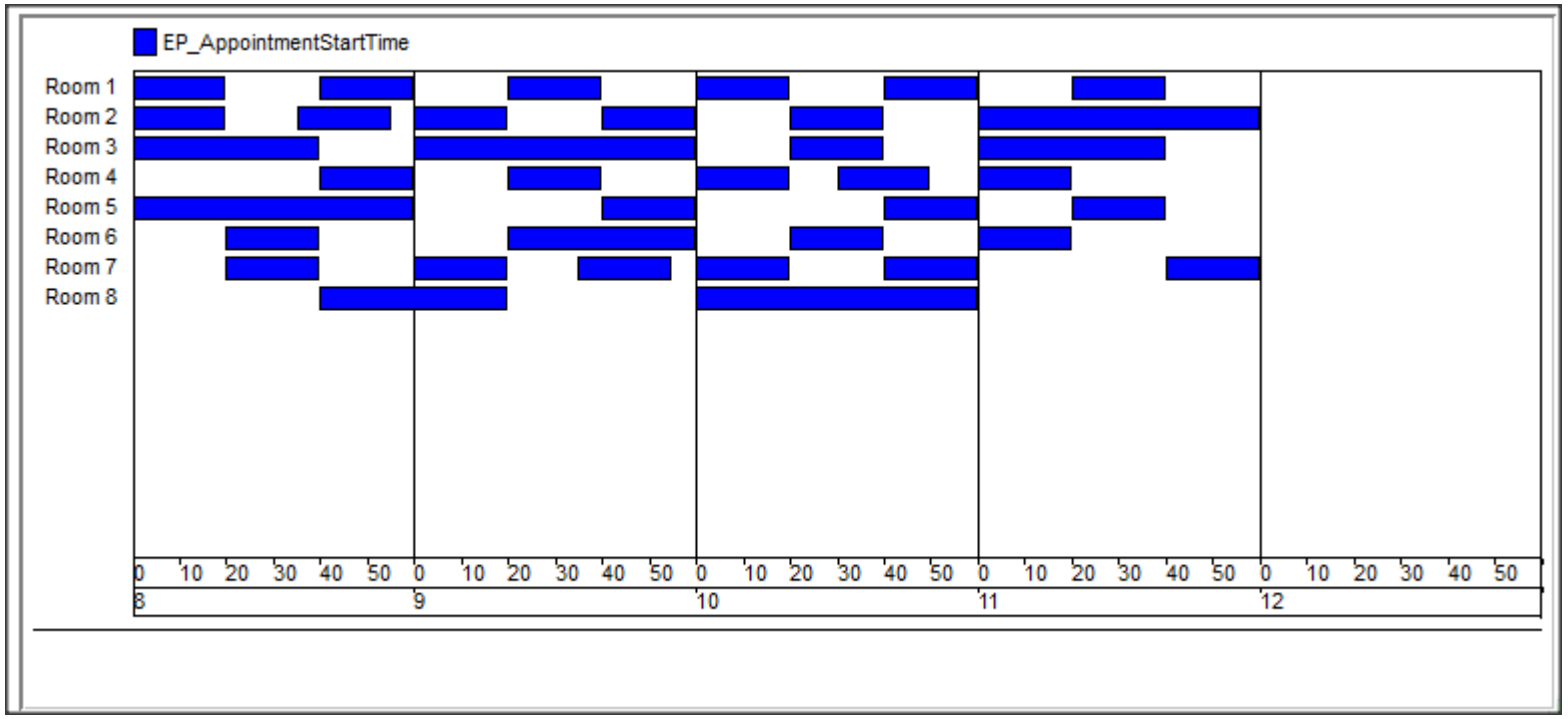
Time Axis



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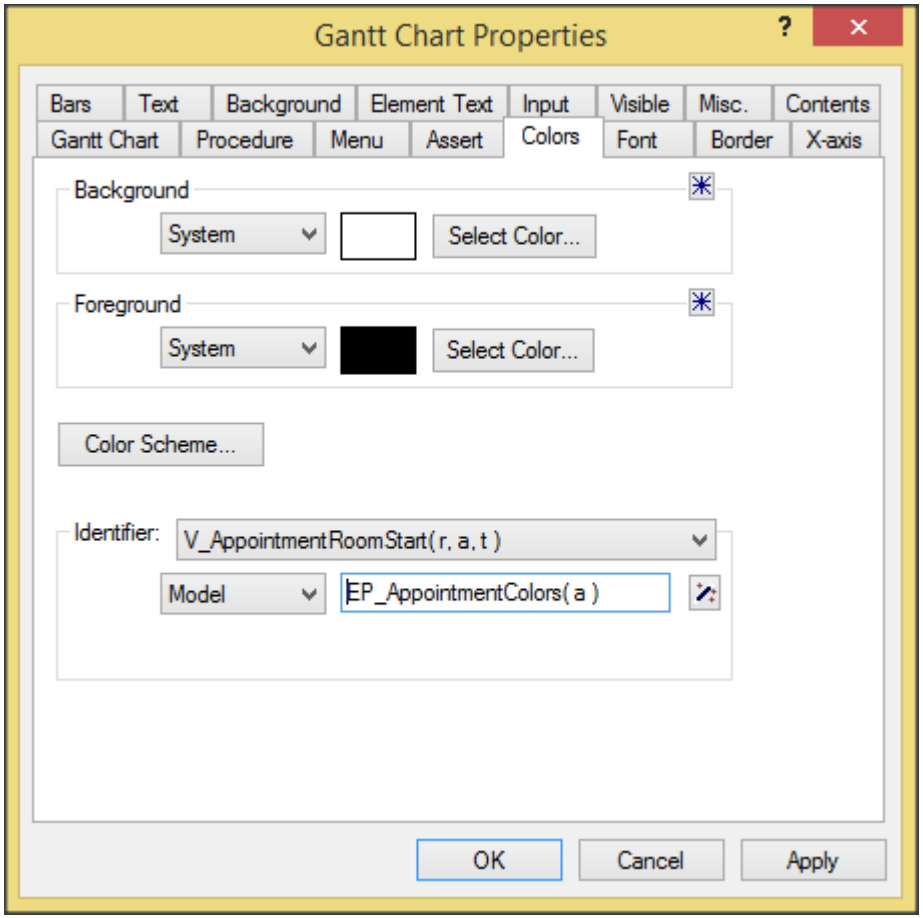
Color Scheme

> Create an Element Parameter
  - Range: AllColors

> Assign the Element Parameter as the color scheme for the domain identifier



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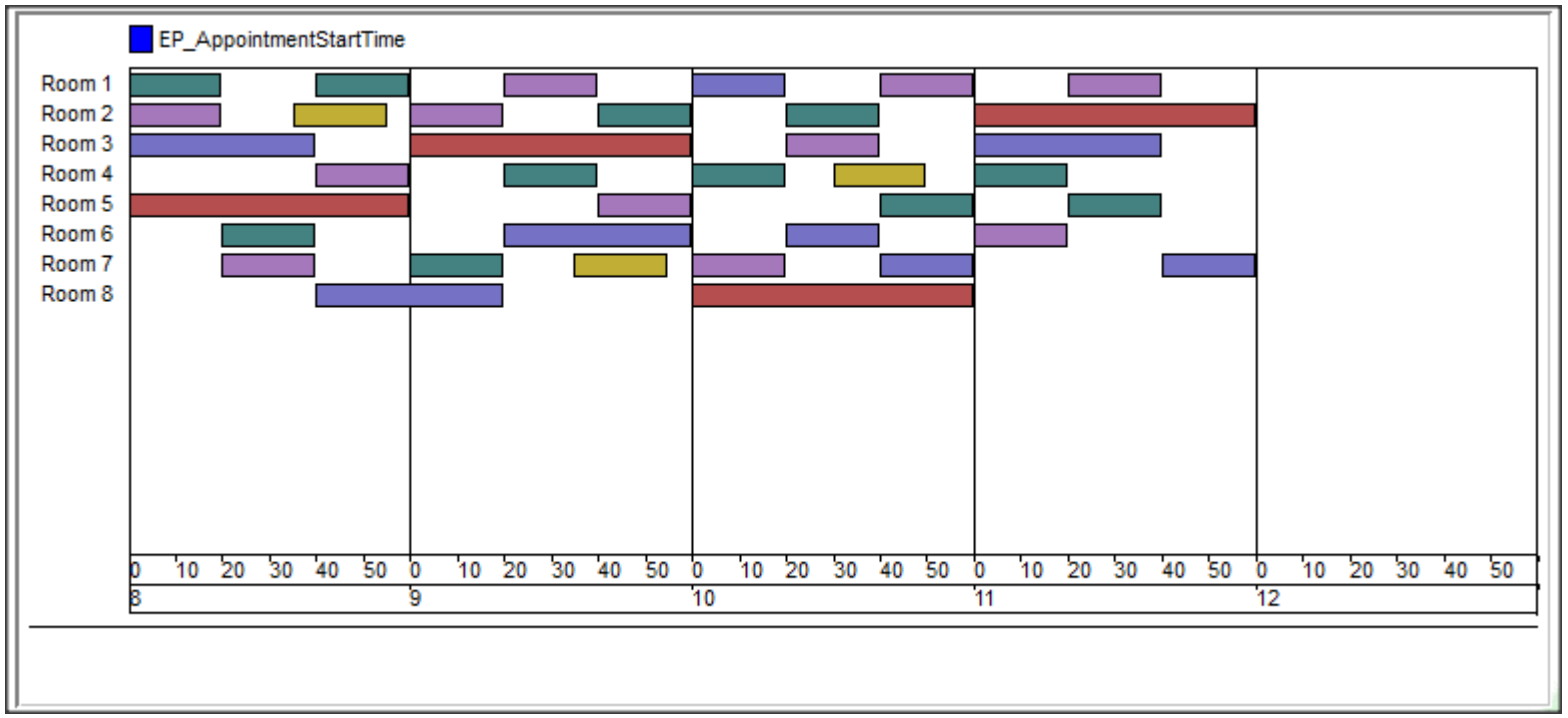
Color Scheme



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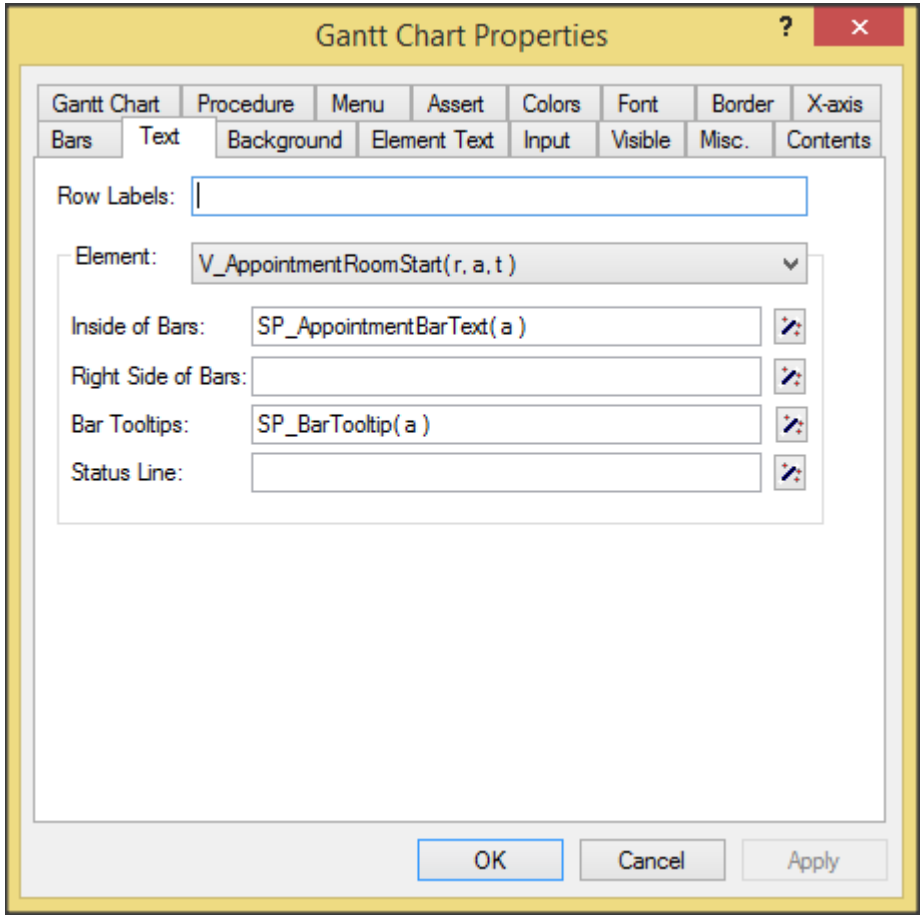
Text

> Remove the legend

> Add String Parameters as

- Bar text
- Tooltip



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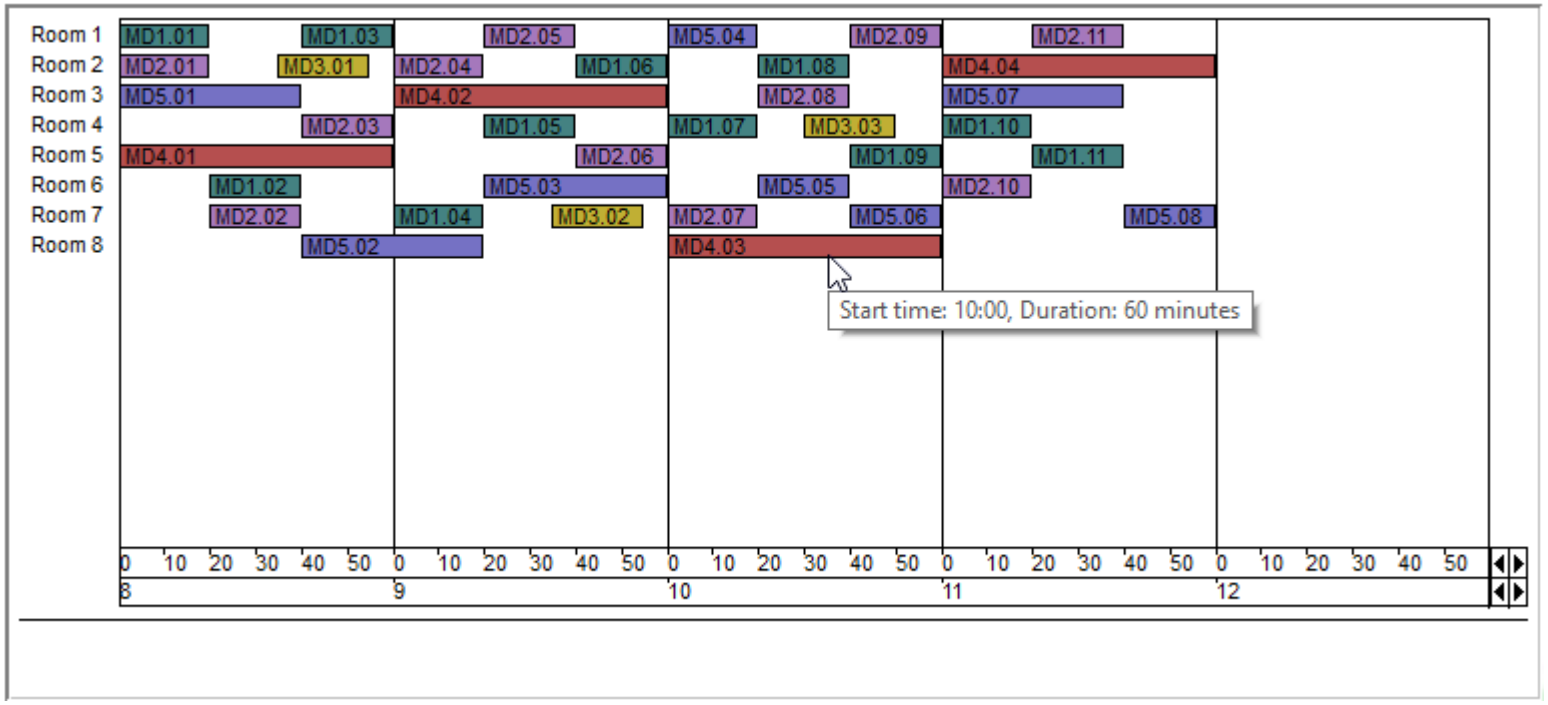
Text



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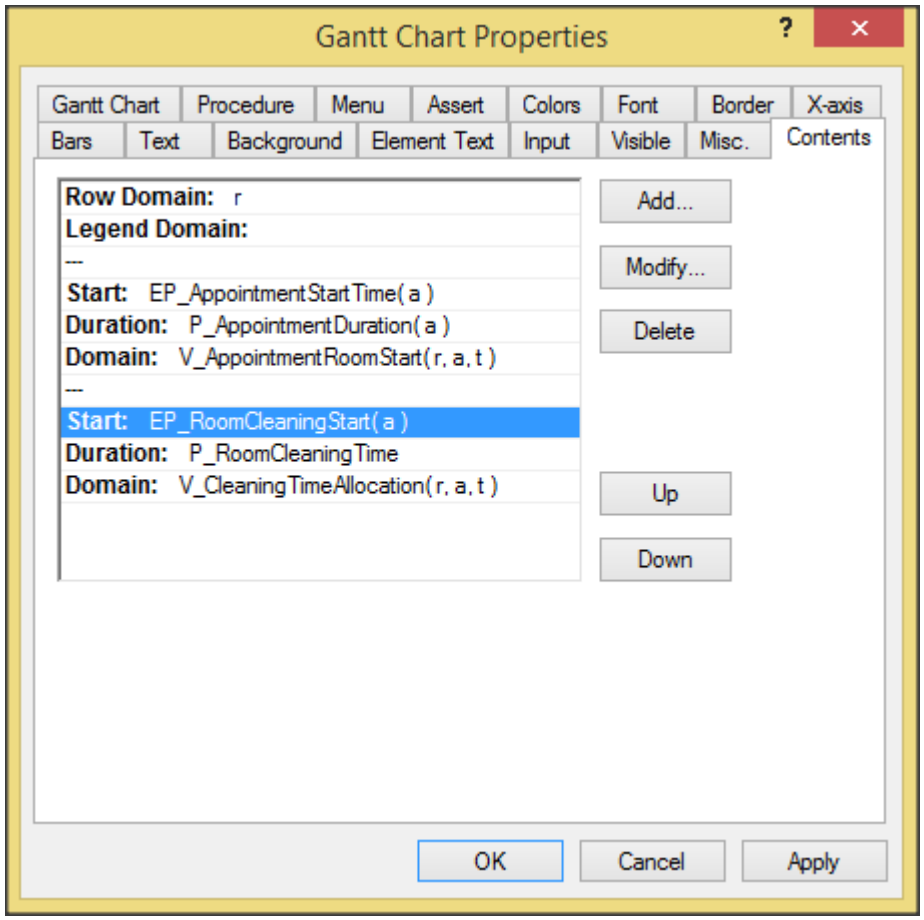
Adding content

> Press the “Add” button

>Select

- Start
- Duration
- Domain



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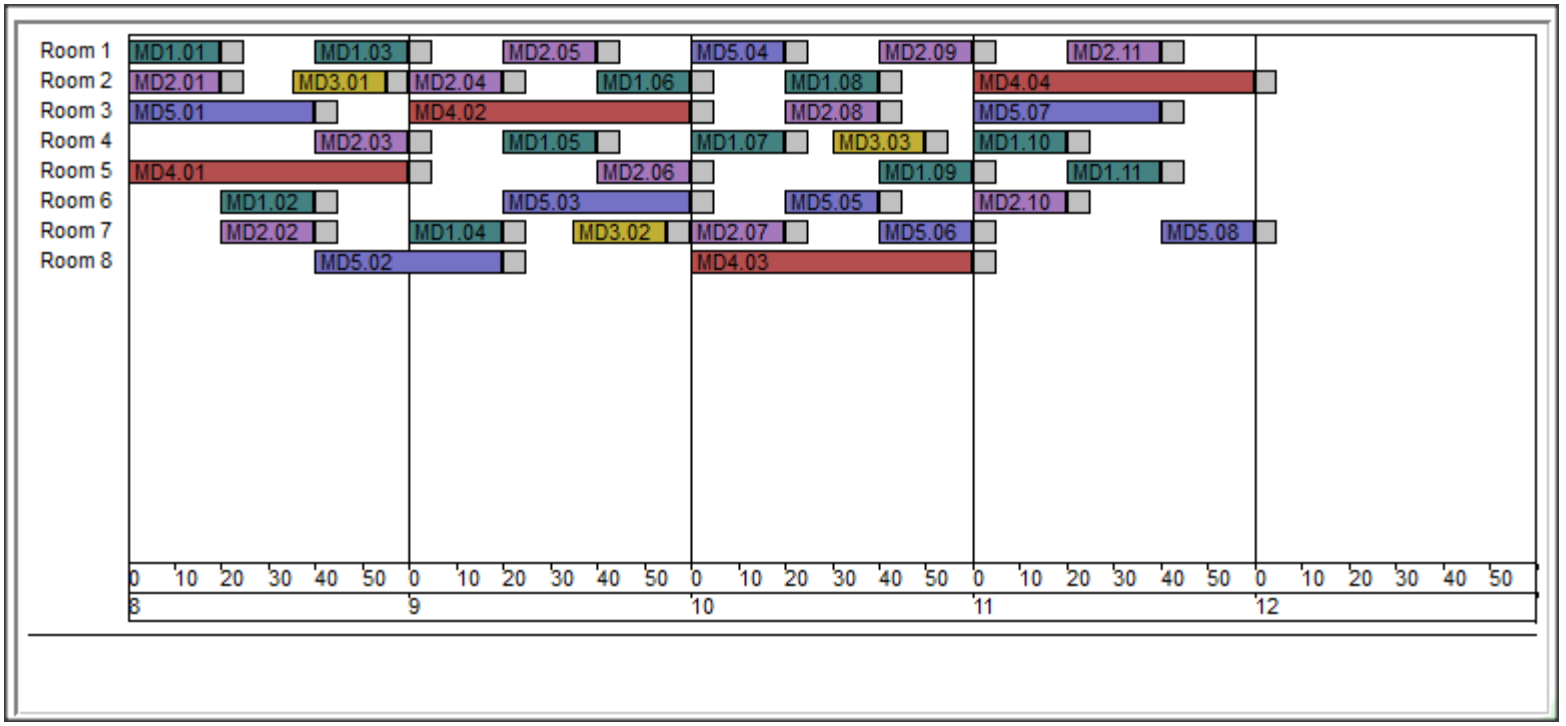
Adding content



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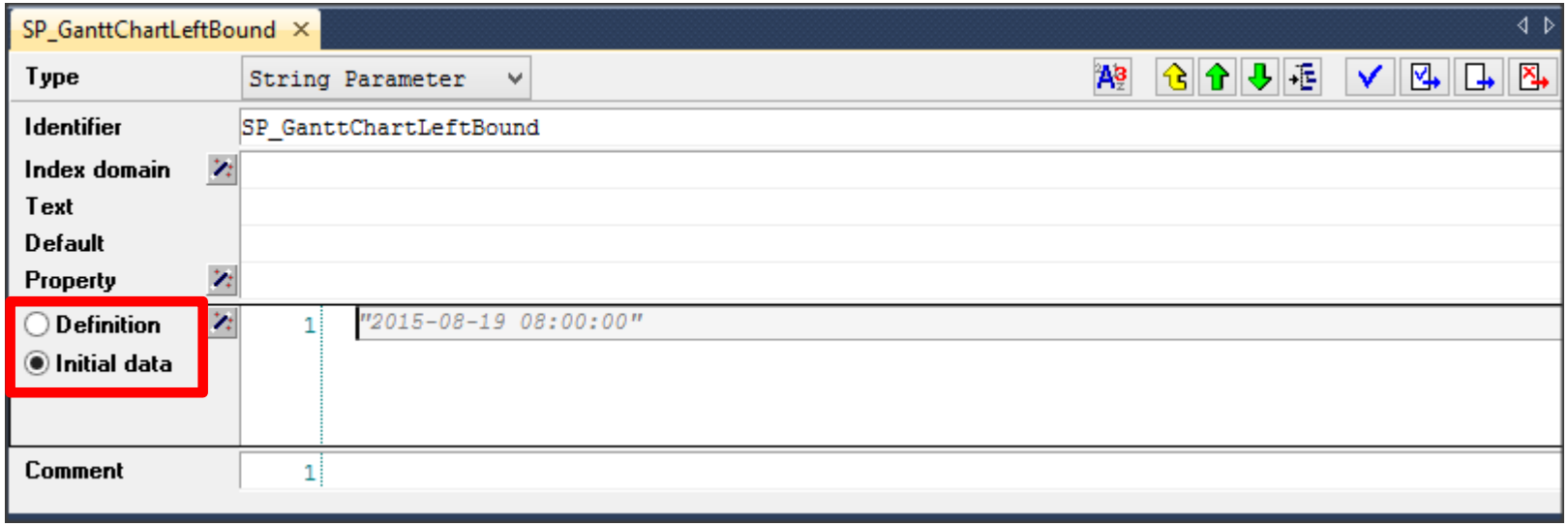
Enable Scrolling

> Change the attribute of the left / right bound String Parameters to “Initial Value”



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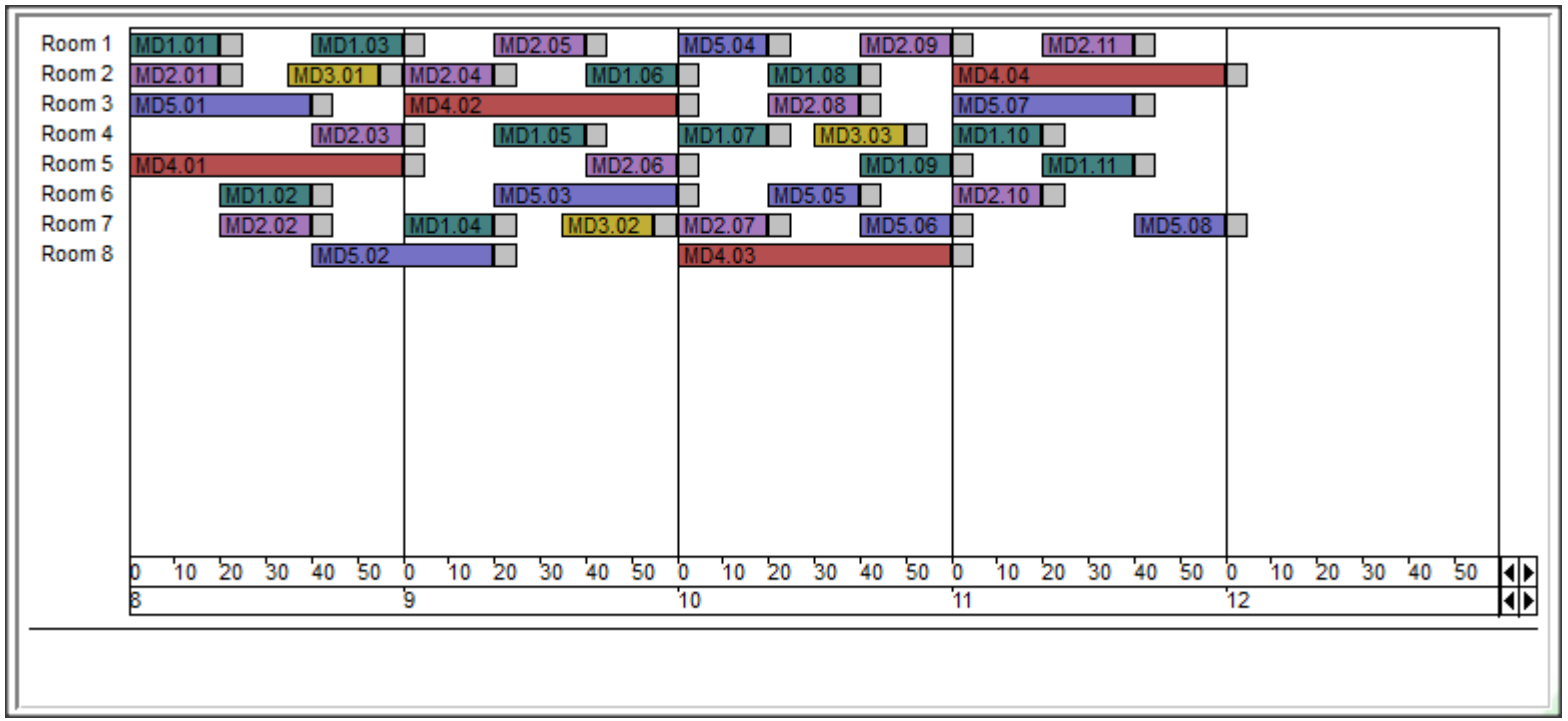
Enable scrolling



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End User control

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Procedure – data change

"… can I check the feasibility of the schedule when I play with the start time and duration of the appointments?"

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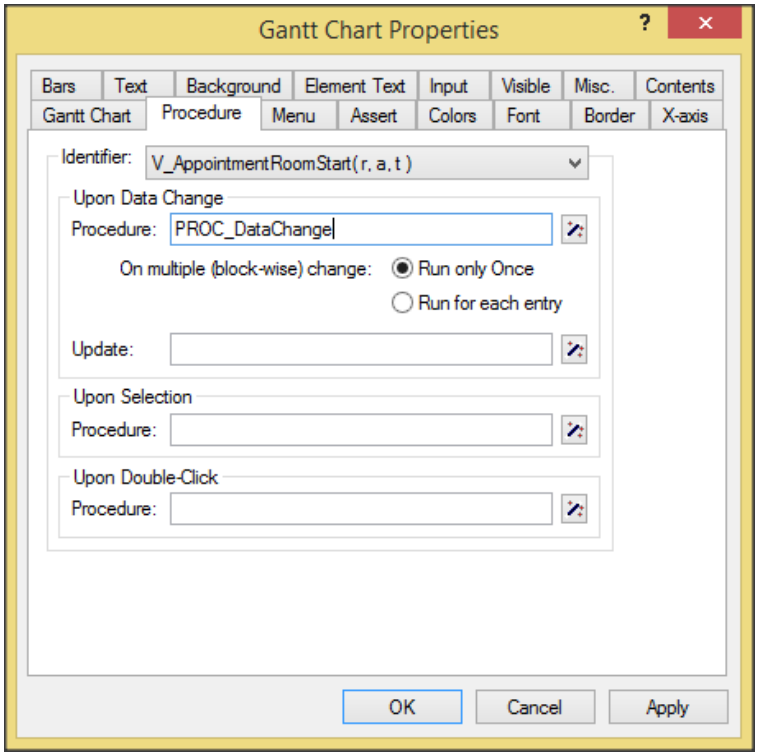
Procedure – data change

> Add a procedure that is triggered every time we change the data.



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Procedure – upon double click

"… can we use this method to update the status of each appointment when a patient checks in?"

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Procedure – upon double click

> First, add these Identifiers:

- Parameter P_SelectedAppointment {
  IndexDomain: a;
  }
- StringParameter SP_CheckedIn {
  IndexDomain: a;
  }
- StringParameter SP_NewAppointmentText {
  IndexDomain: a;
  Definition: {
  FormatString("%s %s", SP_AppointmentBarText(a) , SP_CheckedIn(a));
  }
  }

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Procedure – upon double click

- ..and then a procedure containing this statement:
  - SP_CheckedIn(a) += "Checked In" OnlyIf (P_SelectedAppointment(a) = 1 and SP_CheckedIn(a) = "");

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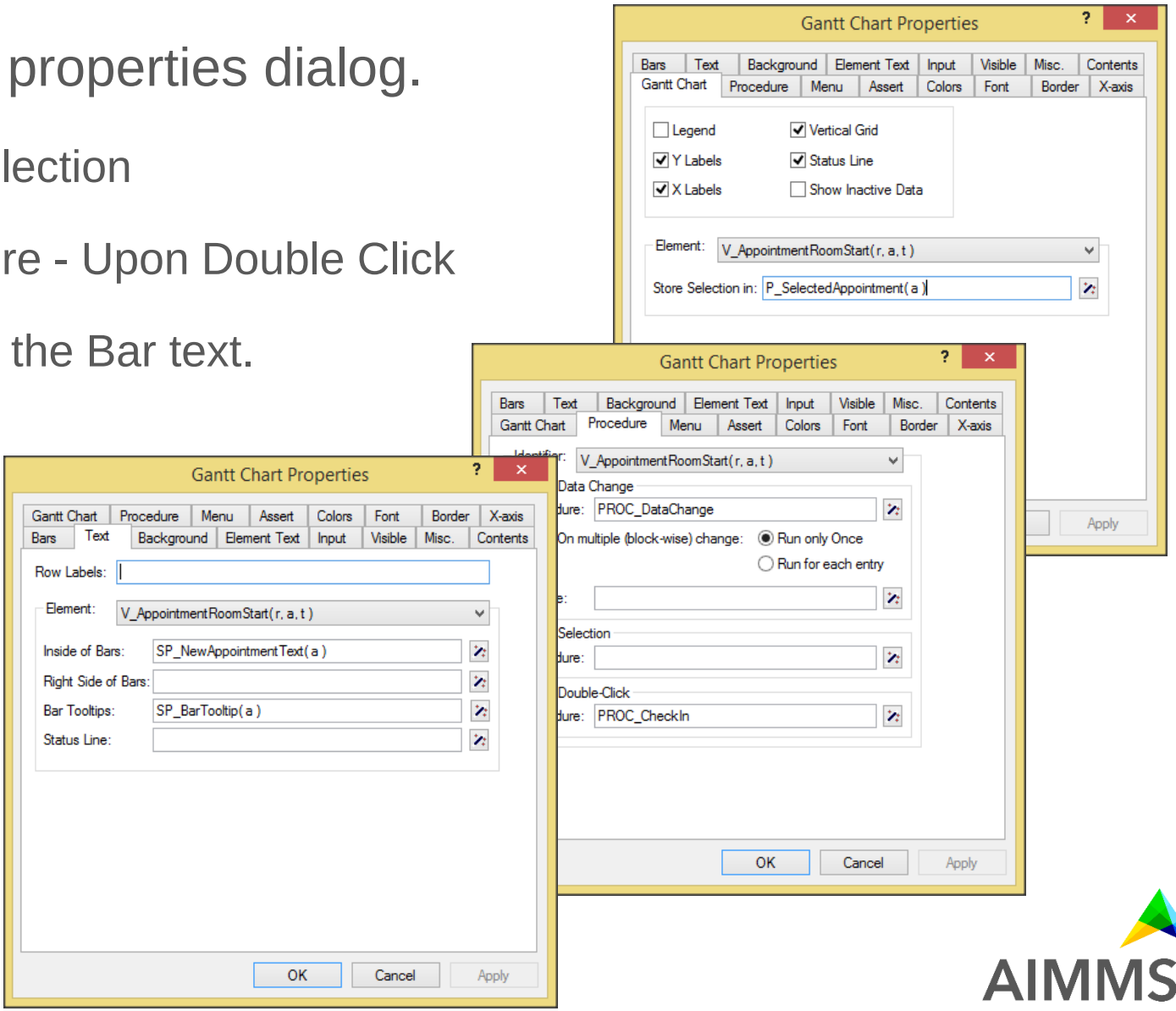
Procedure – upon double click

>Open the properties dialog.

- Store selection
- Procedure - Upon Double Click
- Replace the Bar text.



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Bar size

"… can we adjust the size of the bar area?"

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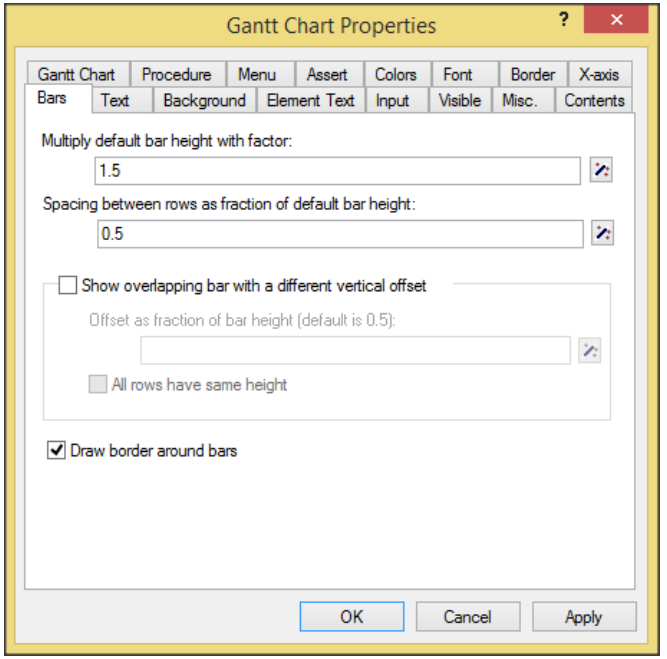
Bar size

> Both bar height and row spacing can be adjusted from a factor of the default bar height.



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Overlapping bars

"… can we merge the medical assistant's schedule into this Gantt Chart?"

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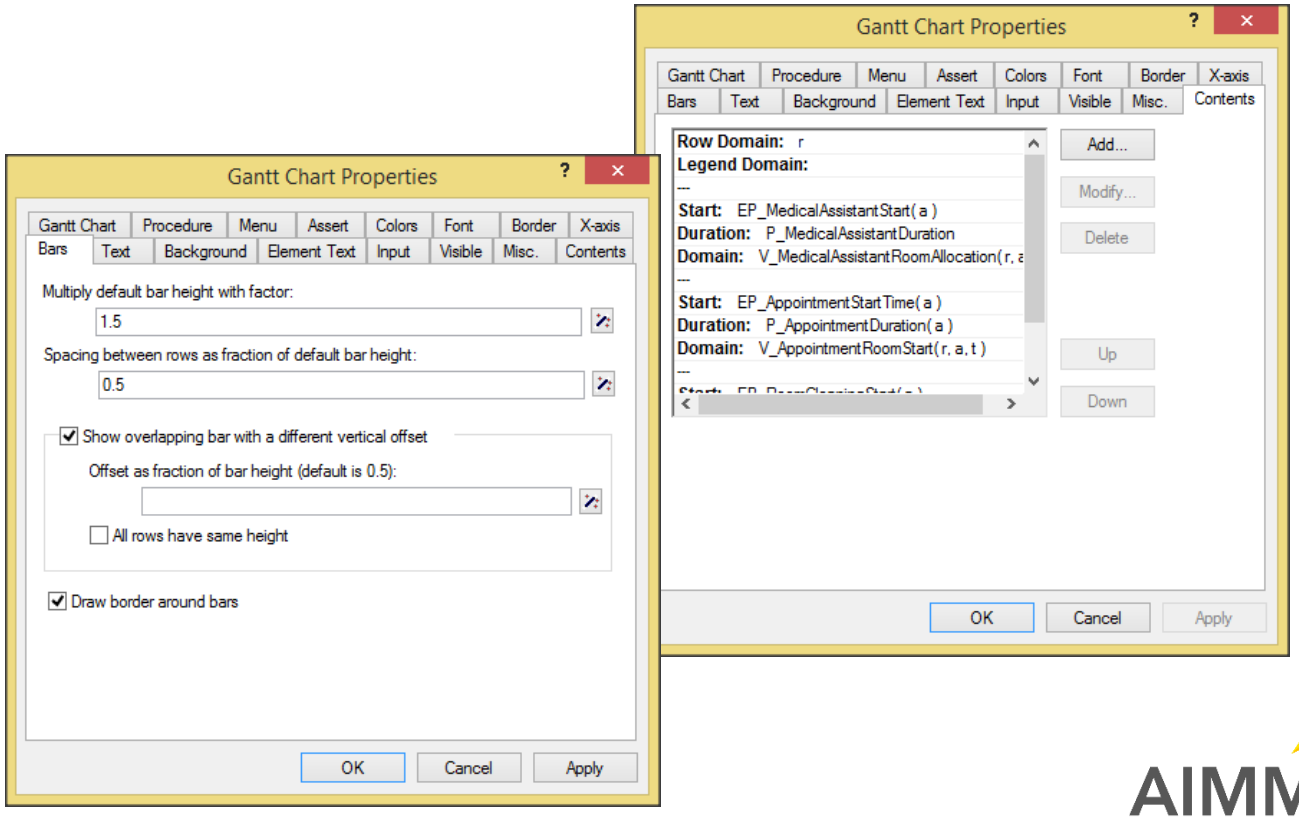
Overlapping bars

> Add content using the same indexed domain.

> Allow the bars to overlap



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Vertical Bands

"… quickly check availability across all the rooms?"

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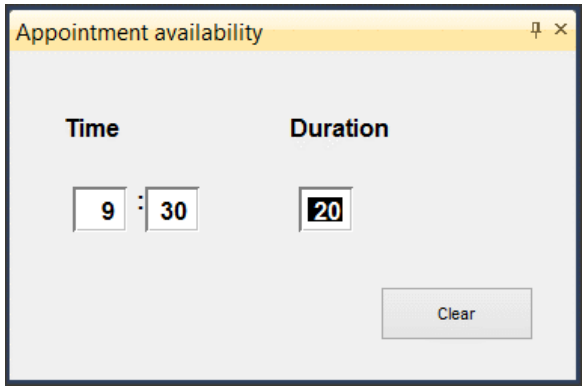
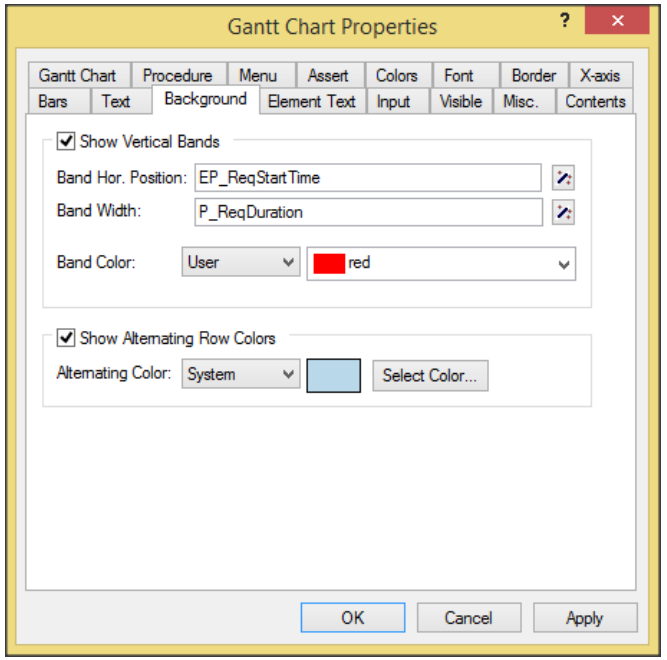
Vertical Bands

> Vertical band span the whole Gantt Chart
  - Start
  - Duration

> Use end user input values to experiment different options.





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Summary

> Basics concepts of the Gantt Chart

- Setup
- X-axis
- Color Schemes
- Text

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Summary

> End-user features

- Scrolling
- Zooming
- Manipulate data
  - Moving
  - Changing duration

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Summary

> Advanced settings

- Procedures
  - Upon data change
  - Upon click
- Bars
  - Adjust height
  - Overlap
- Background
  - Vertical bands
  - Horizontal bands

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Announcement of next webinar

The next webinar in this series will be on Constraint Programming Scheduling Applications and will be presented by Chris Kuip, Client Support consultant at AIMMS.

Join us – September 16, 2015:

- 5 pm CET / 11 AM EDT / 8AM PDT

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Q&A

You can always email us at support@aimms.com with questions or suggestions.

Thank you!