



# Chiron

## Design Specification

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Mengxiao Song | Sakshat Goyal



# Contents

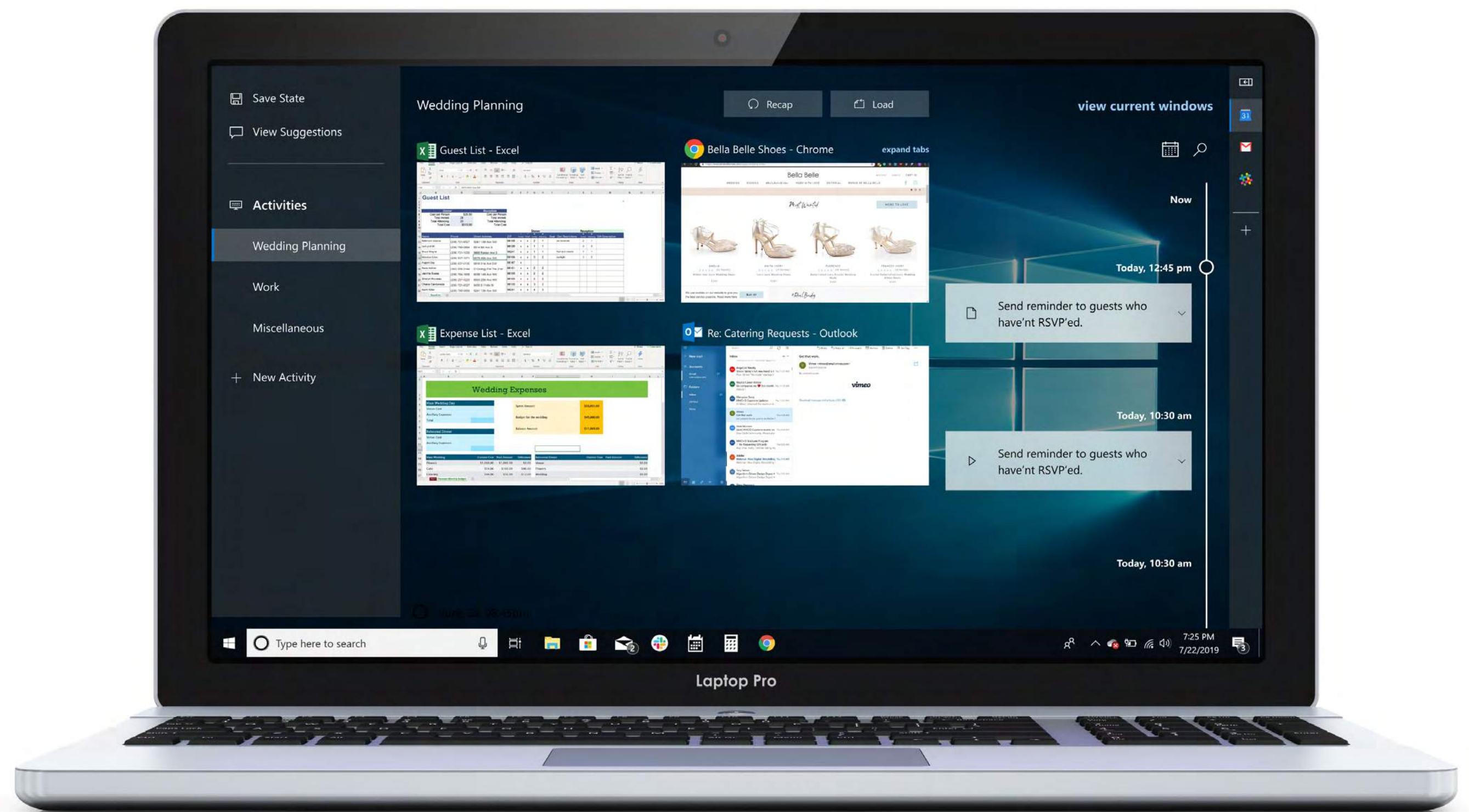
<b>Introduction</b>	<b>01</b>	<b>Key Paths</b>	<b>15</b>
Product Overview	01	Environment Building	15
Problem Setting	02	Create a new activity (from activity container)	15
Translation from Research	03	Create a new activity (from smart suggestions)	16
Design Objective	04		
<b>Architecture, Models, and Systems</b>	<b>05</b>	<b>Context Keeping</b>	<b>17</b>
User Journey	05	Create a new save state	17
System Hierarchy	06	Create a new memo	18
Task Flows	07		
Environment building   Master components	07	<b>Activity Switching</b>	<b>19</b>
Environment building   Create a new activity	07	Load a previous state	19
Environment building   Add a new plugin	08	Toggle between activities	22
Context keeping   Create a new memo	09		
Context keeping   Create a new save state	09	<b>Visual System</b>	<b>23</b>
Activity switching   Load a previous save	10		
Activity switching   Toggle between activities	10	Color Palette	23
		Logo	24
		Typography	25
		Iconography	26
		UI Element Redlines	27
<b>Interaction Specification</b>	<b>11</b>	<b>Bibliography</b>	<b>40</b>
Overlay & Save State & Last Opened	11		
Saving and Loading States	12		
Timeline & Time-lapse	13		
Activity Container & Suggestions	14		

# Introduction

## Product Overview

Chiron is a personalized virtual workspace that allows users to easily build their work environment, keep the context, and switch between activities.

Chiron is the envisioned blueprint for the implementation of a Windows OS feature that serves as a context-management strategy for implementing personalized productivity tactics for self-employed information workers. It is a personalized workspace created for users that experience a lot of context and activity transitions.



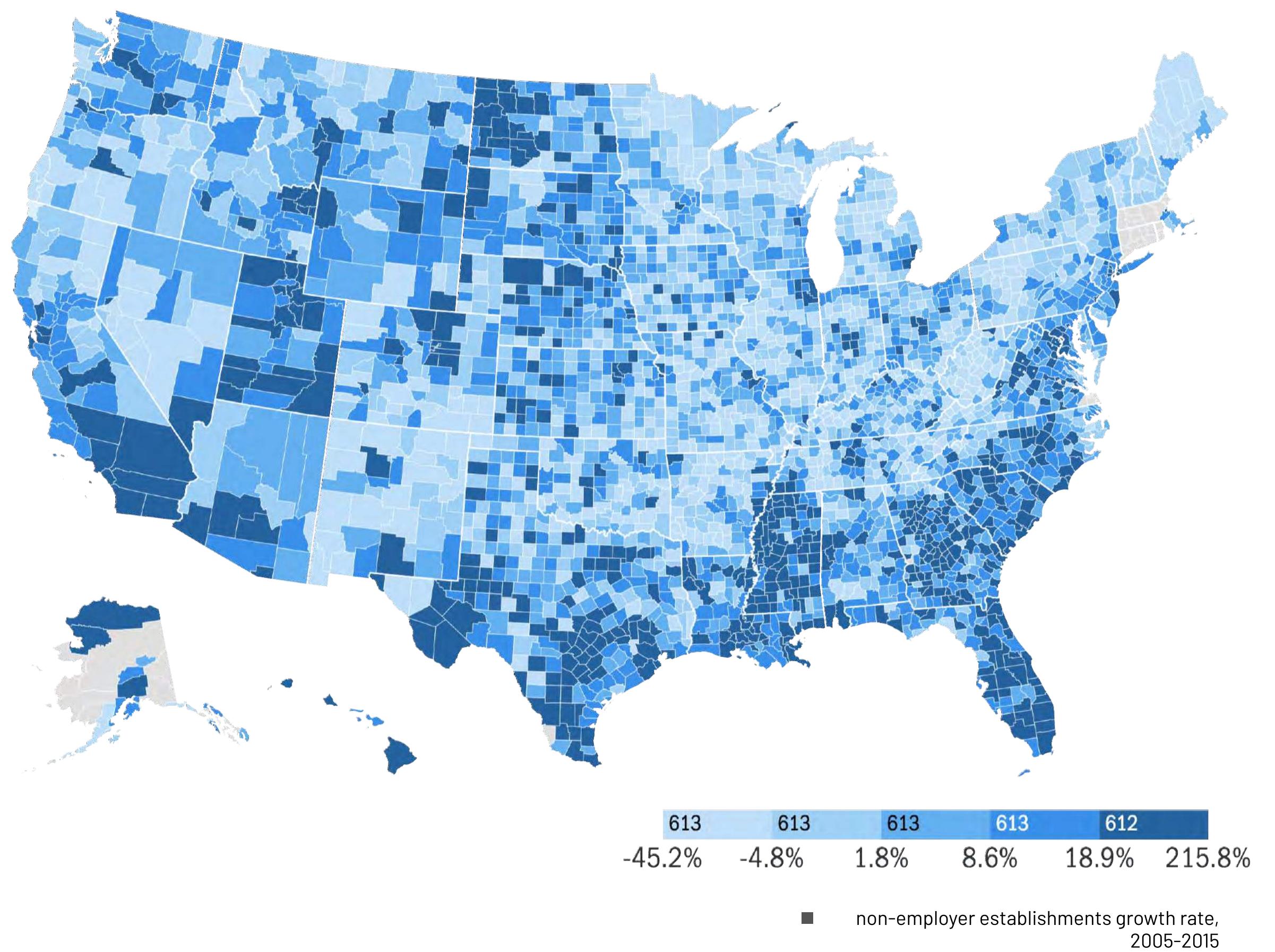
# Introduction

## Problem Setting

In recent years, conversations about the American workforce have largely centered around the emergence of "Gig Economy Workers" – individuals who take on non-traditional work as a full-time occupation. Alan B. Krueger in his 2015 report suggested that there has been a significant rise in the incidence of "alternative" work arrangements, and in late 2015 self-employed workers make up 15.8% of the entire workforce in the United States.

Based on the Self-Employment Annual Report published by the cloud accounting firm FreshBooks, it is predicted that in the next 5 years, as many as 27 million workers will leave traditional work in favour of self-employment. At the current trend, The amount of full-time self-employed workers in the United States is set to triple to 42 million by 2020.

As the market shifts more towards a "gig-economy", we saw an opportunity to create a design response tailored for the highly unstructured workflow of self-employed information workers.



# Introduction

## Translation From Research

From heuristic analysis, competitive analysis, and generative research, we discovered a number of problems with existing personal productivity solutions. Most tools are designed for people that work with access to predictable schedules, workload, and locations. The selection of tools created to accommodate the non-traditional and unpredictable pattern of self-employed workers are rare. Our participants employ very different time, task, and schedule management tactics.

A number of these solutions require a high level of manual input or requires certain lifestyle or behavioral changes in their users, leading to high levels of frustration with the product, and sometimes churn.

Our participants are constantly switching physical and mental contexts, from project work to managerial work to miscellaneous activities. Context switching is the period when participants reported they are the most prone to distractions.

We need to create a design response that could accommodate different productivity tactics, easily integrate into the existing workflow of our audience, and streamline the context-transition periods when users are most prone to distraction.

# Introduction

## Design Objectives

We have three main envisioned objectives for the product; it should help users with environment-building, context-keeping, and activity-switching.

### Build an environment

Everyone uses different tools and techniques to organize their activities. Automatically customize and organize the workspace to what works best for you with Chiron's smart activity containers and plugin integration.

### Keep the context

Mental contexts are hard to track and replicate. With Chiron you can create time-stamped memos and save states, and view last opened applications to help you keep the context.

### Switch between activities

It's easy to be distracted while transitioning between activities. Chiron uses activity containers and the timeline to keep activities and save states organized, so you can quickly switch between activities or view previous changes.

# Architecture, Models, and Systems

## User Journey

### User journey



We follow Erin's journey during her experience discovering and using Chiron. Erin needs to balance managerial work, client visitations, and website maintenance as part of her occupation.

Erin is the owner of a small business specialized in nanny referrals called Spilt Milk Nannies.

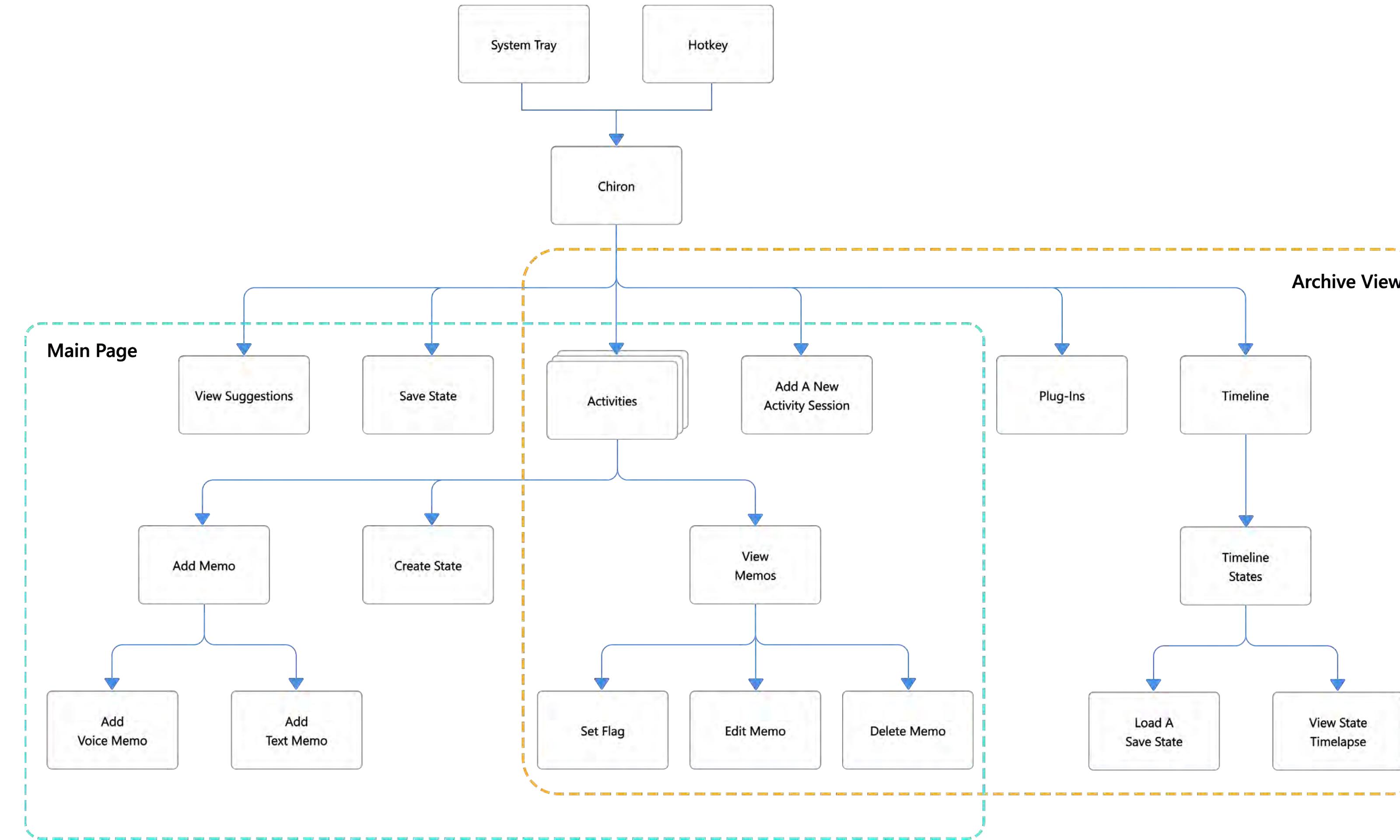
**"I need to balance my time between nannying, managerial work, and maintaining my website."**

Erin schedules her meetings and events using google calendar, and keeps in contact with her network through Outlook. Erin's schedule and location of work changes from day to day. All of Erin's work happens on her desktop.

Phases	Discovery	Onboarding	Preparation	Focused work	Detachment	Break	Activity transition		
Scenario	Erin has multiple activities open simultaneously due to the nature of her work.	Erin learns about Chiron.	Erin onboards by creating suggested activity containers.	Erin customizes her workspace by integrating common tools she uses.	Erin starts her work by checking off the smaller tasks she noted down on memos.	Erin enters a concentrated work period.	Erin wraps up her managerial work as she prepares to leave for lunch break.	Erin enjoys her lunch break.	Erin decides to schedule client visits after returning from her lunch break.
Action taken	Searches for a suitable feature that addresses her problem.	Erin gains an initial understanding of Chiron through a web search.	Erin creates containers for her various activities using Chiron's automated application organization process.	Erin browses the plugin marketplace to add Google Calendar and Gmail to her Chiron workspace.	Erin completes rote tasks noted down on memos to prepare herself for work.	Erin concentrates on producing work, with no interruption from Chiron.	Recording a memo also creates a Chiron autosave that she can return to later.	Erin makes and eats lunch.	Erin toggles to the "Client scheduling" activity to continue her work.
Feelings	Erin finds that she's less productive than she would like to be due to the amount of time it takes to search through the files.	Erin is curious about how Chiron could help automate the activity organization process.	Erin is glad that she doesn't need to spend long periods of time cleaning and categorizing tabs.	Erin is glad she can integrate tools she's already familiar with.	Erin finds the completion of rote tasks an easy way to get prepared for her professional work.	Erin is focused during this period.	Erin is in a hurry to wrap up work.	Erin is happy to be enjoying her lunch.	Erin is glad the work transition is fast and smooth.

# Architecture, Models, and Systems

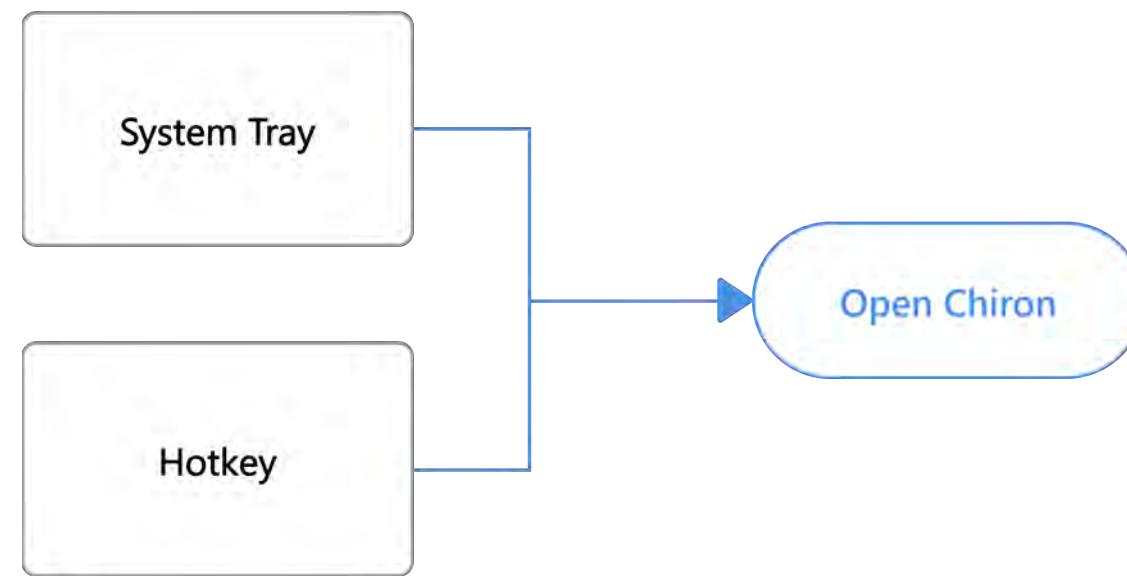
## System Hierarchy



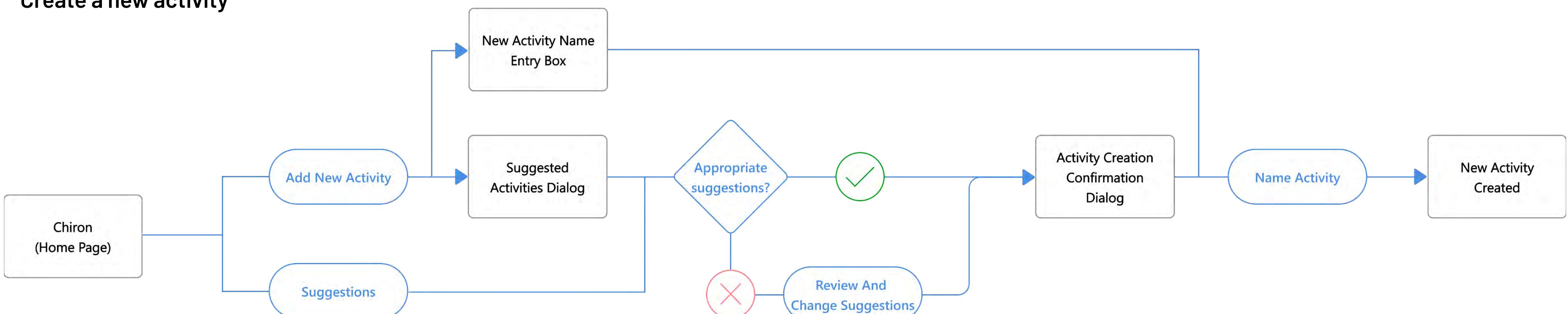
# Architecture, Models, and Systems

Task Flows | Environment Building

## Master components



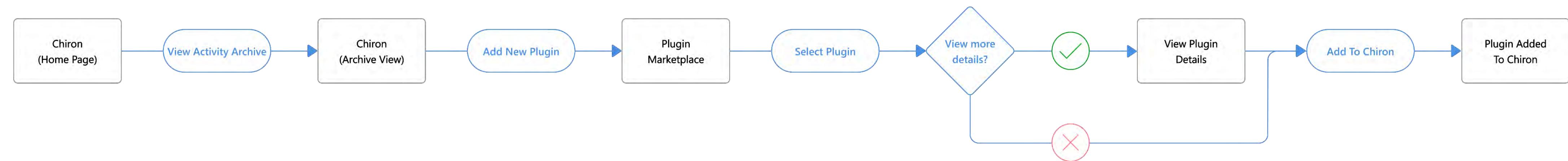
## Create a new activity



# Architecture, Models, and Systems

Task Flows | Environment Building

## Add a new plugin



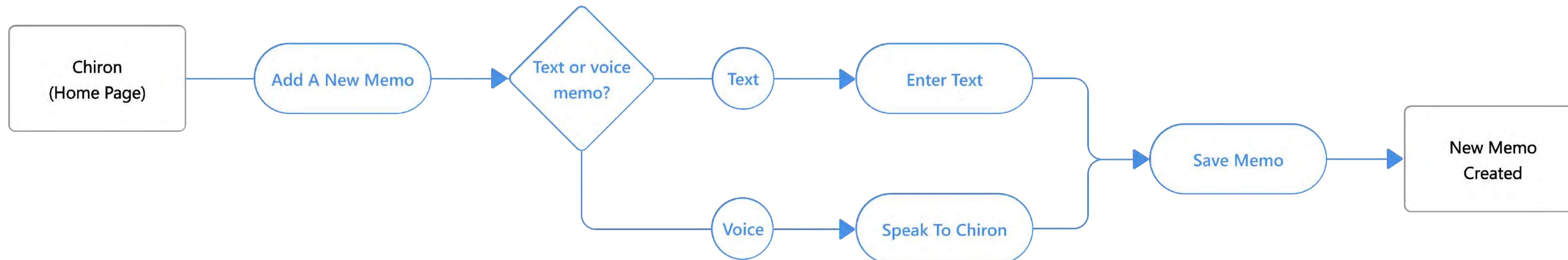
# Architecture, Models, and Systems

Task flows | Context Keeping

## Save a state



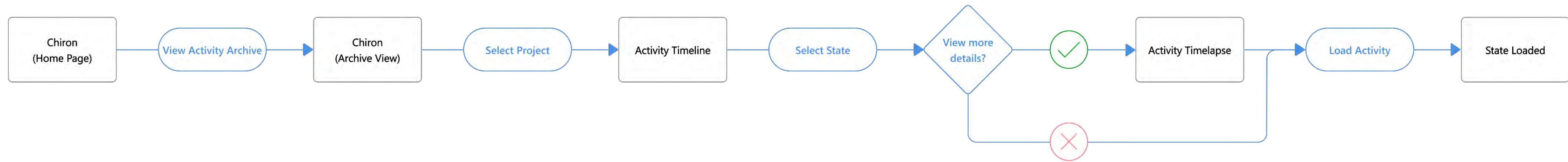
## Create a new memo



# Architecture, Models, and Systems

Task flows | Activity Switching

Load a previous state



Toggle between projects



# Interaction Specification

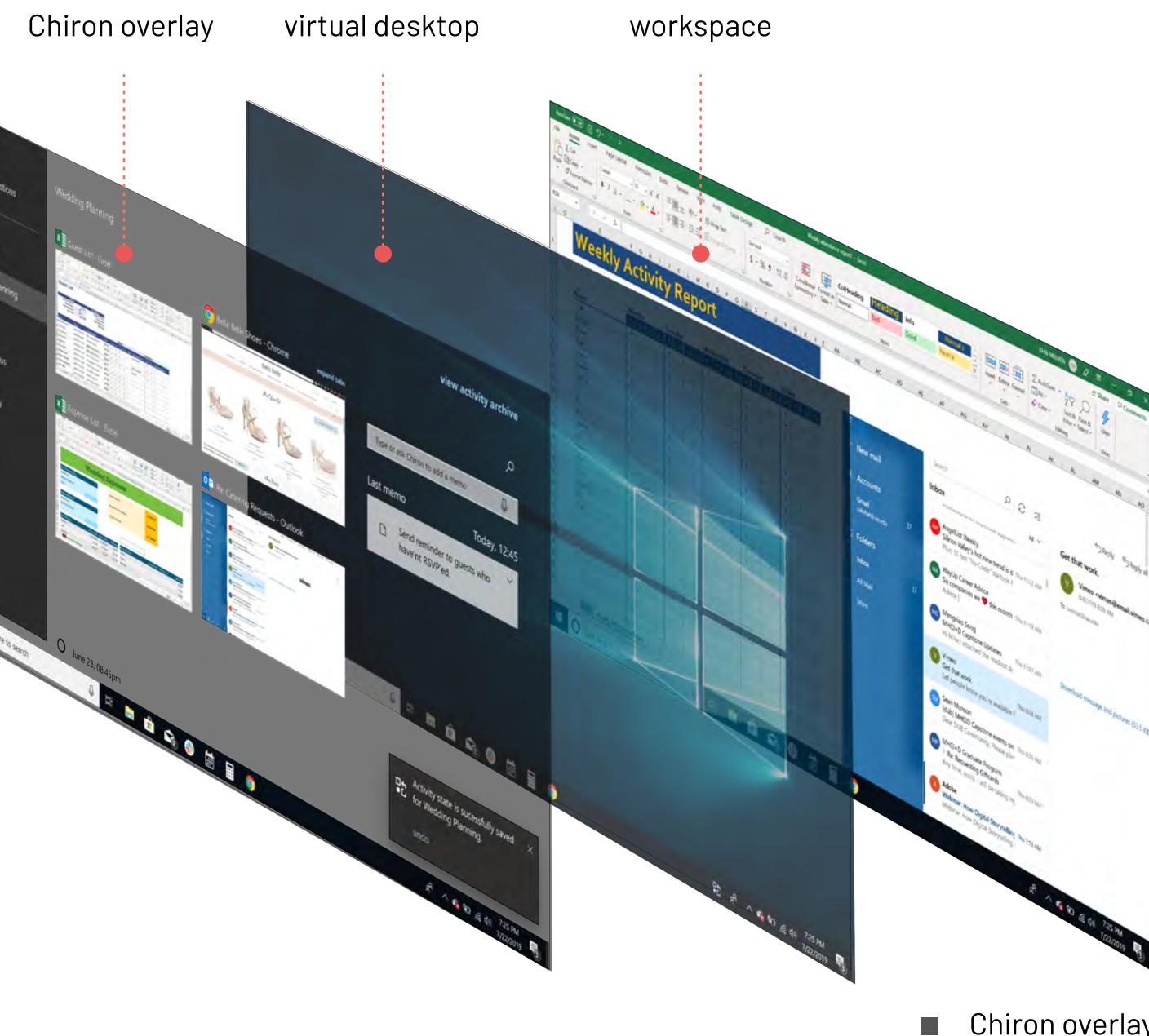
## Overlay & Save State & Last Opened

### Overlay

Chiron is an overlay that appears on top of the user's existing workspace similar to Virtual Desktop and Game Bar. This serves as a quick method for users to access the features without losing context. The Chiron overlay can be accessed through a hotkey-combination, by clicking on the Chiron icon in the Windows system tray, or voice activation through Cortana.

### Save states

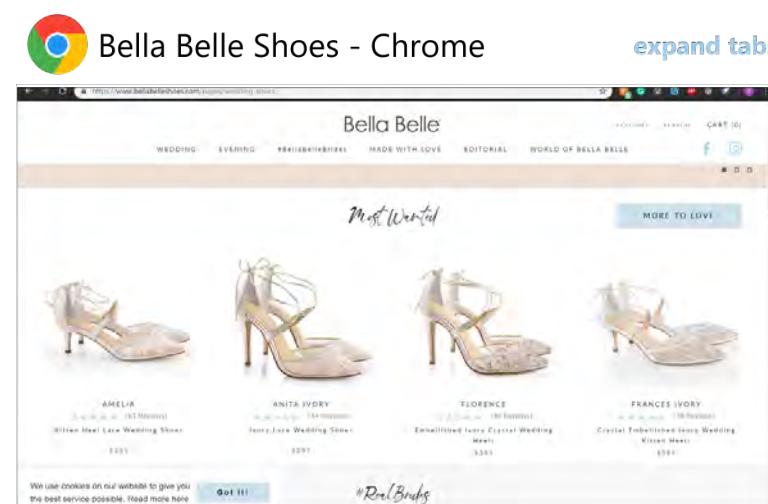
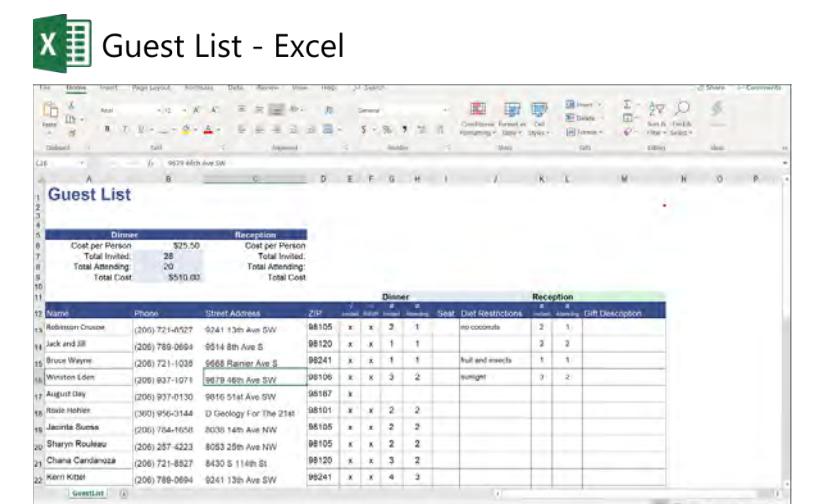
Chiron stores the state of the entire operating system at different intervals to help users reattach to the context, and continue right where they left off. The position of opened windows, the state of applications, and active browser tabs are saved and stored as a "save state". This provides version control of the Windows work environment at an OS level.



■ Chiron overlay

### Last Opened

Chiron shows an array of thumbnails for the most recently opened applications and files. This feature enhances the context-keeping process by displaying contextually relevant information to help users reattach into their workflow.



expand tabs

■ last opened applications and files in Chiron

# Interaction Specification

## Saving and Loading States

### Saving and loading states

Chiron allows you to preview and rollback to previous versions of the activity through save states.

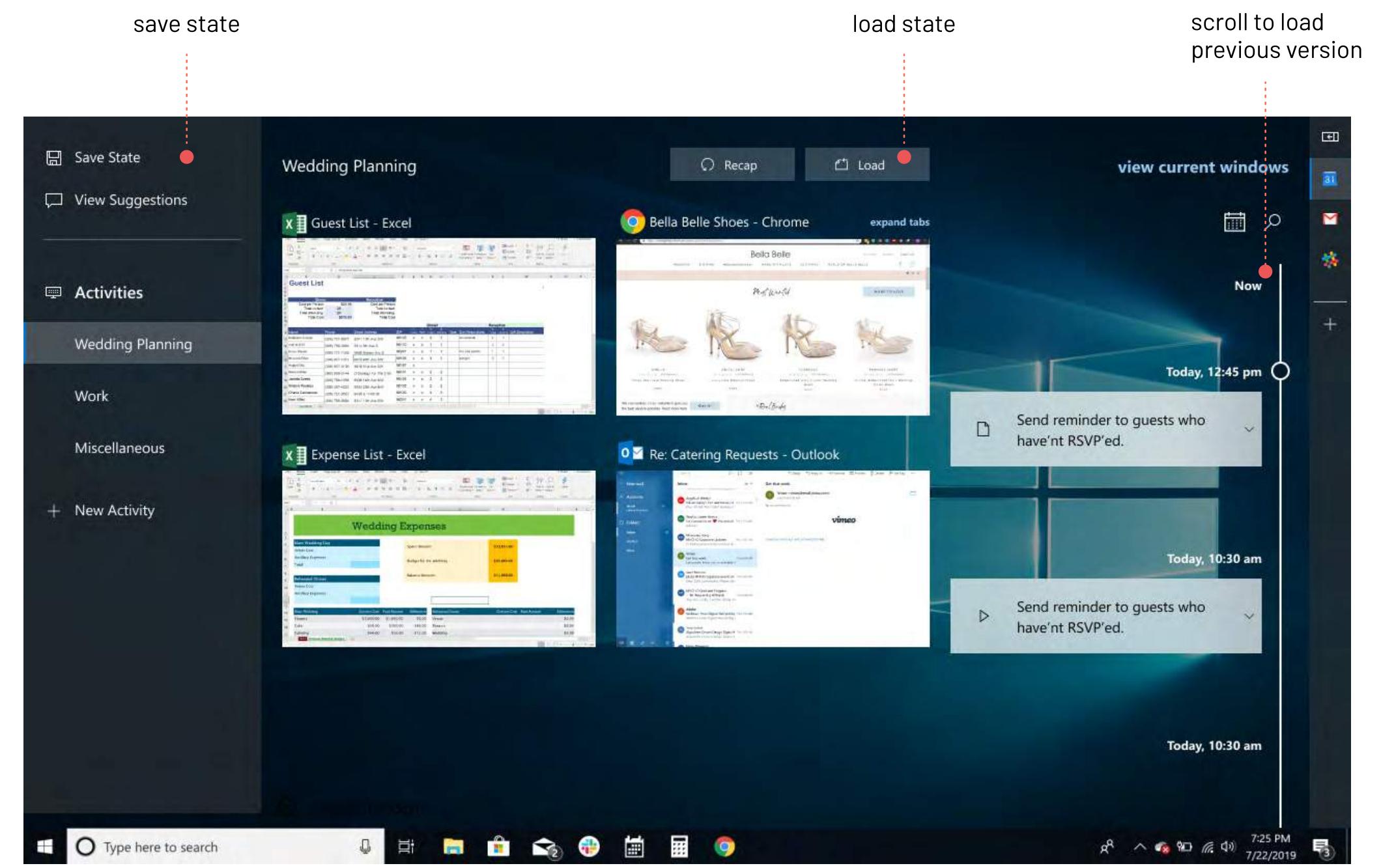
Chiron does this by leveraging the Recovery feature on Windows 10. Recovery natively stores different versions of files and applications to provide users with the power to rollback their entire operating system. However, rolling back the entire system is unnecessary for project work. Similar to Git's version control, Chiron only rolls back files and applications that have changed, and only files and applications that are tied to the selected activities.

Since Chiron leverages the Windows Recovery architecture, only the metadata of the activity-relevant files and applications are stored when a save state is created. The save states contain information about the position and state of the opened windows, and the system directory path for locating the relevant file or application.

When save states are loaded, Chiron fetches the aforementioned system metadata and compares the differences between the current version of the file and the one stored in the save state. The changed files that are associated with the activity are then fetched and restored to the version stored in the save.

### Autosaves

In addition to manually created saves, Chiron also creates autosaves. An autosave is automatically created both on an hourly basis as well as when a new memo is created.



■ Saving and Loading states in Chiron

# Interaction Specification

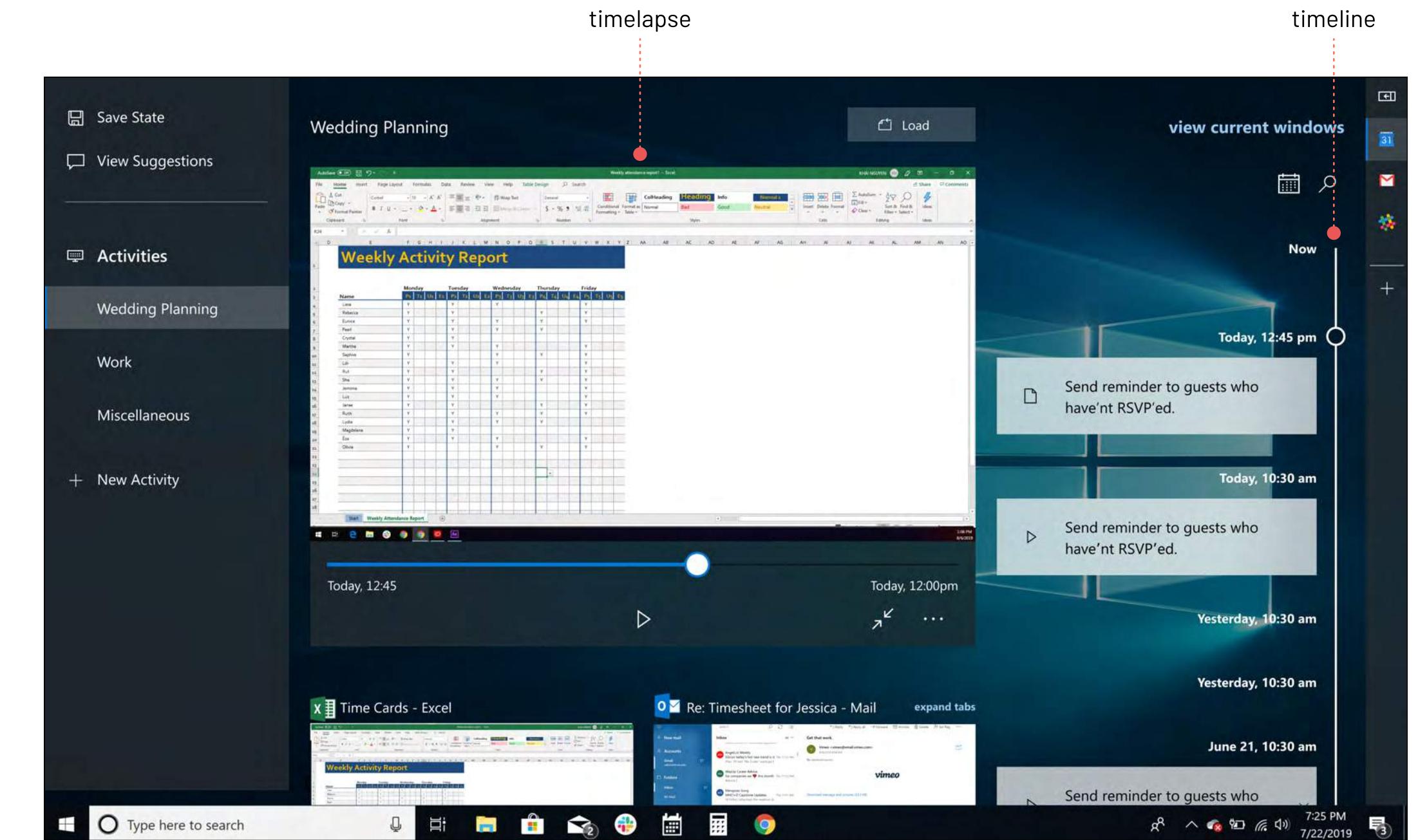
## Timeline & Time-Lapse

### Timeline & Time-Lapse

Chiron has a timeline feature that lets you browse the current windows that are opened, along with a history of the work you did. All of this information is stored locally on your computer to ensure privacy.

The timeline is designed to include all the save states that were made for any given activity so they can fully regain context by scrolling “backwards” in time. A new section is added to the timeline everytime a new save is created. The date navigator at the top of the timeline section allows users to jump to any given date to view specific changes. For each save state that appears on the timeline, a preview of the active windows at the time the save state was created is shown in the form of thumbnails, as well as a quick summary of the memos created.

The time lapse functionality captures a screen recording of the last 60 seconds of activity before a save state is created, and plays back this clip at 4x speed to generate a 15 second time lapse. The aim of this time lapse is to help users reattach to their previous mental context.



■ timeline & timelapse in Chiron

# Interaction Specification

## Activity Container & Suggestions

### Activity Container

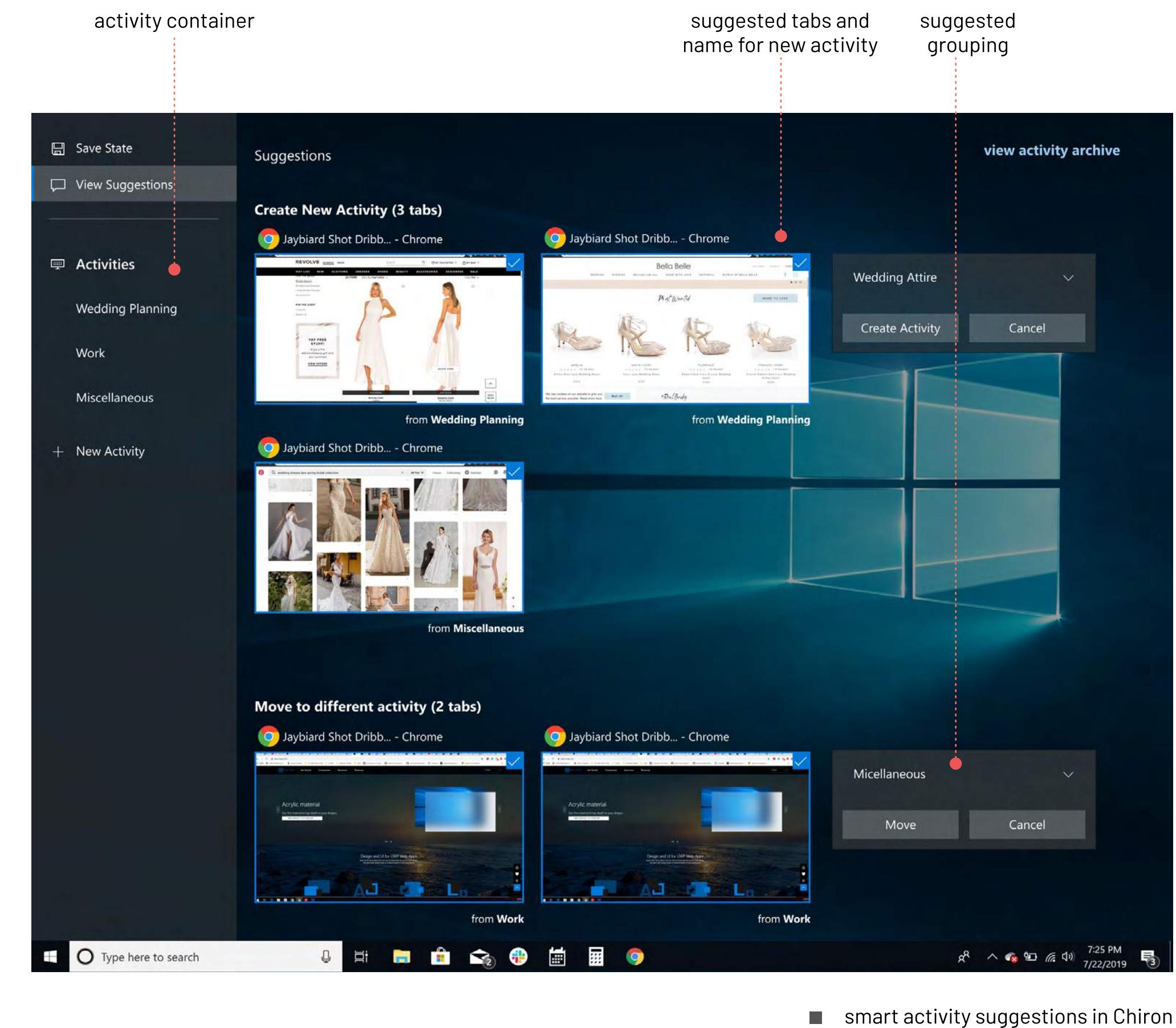
You can easily create activity containers in Chiron. Interact with the "Add a new activity" button, add a name to the container, and choose the relevant applications and files. When you work, any new tabs and applications opened will be automatically tied to that activity session.

### Smart Activity Suggestions

The number of loose files, applications, and tabs could be overwhelming. Manually organizing the applications and files into containers could be very time consuming. Chiron helps automate this process by providing you with activity container suggestions based on context of use, so you can quickly clean up your activities.

The suggestions work by grouping related activities based on context of use, time of use, and keywords. If you consistently open multiple applications or tabs together, Chiron is going to suggest those applications as related, and increase the likelihood of those projects appearing in a container. If a number of different applications are only opened at a specific time period during the day, those applications are more likely to be suggested as being related applications. If there are similar keywords within the application windows, they will be more likely to be opened together.

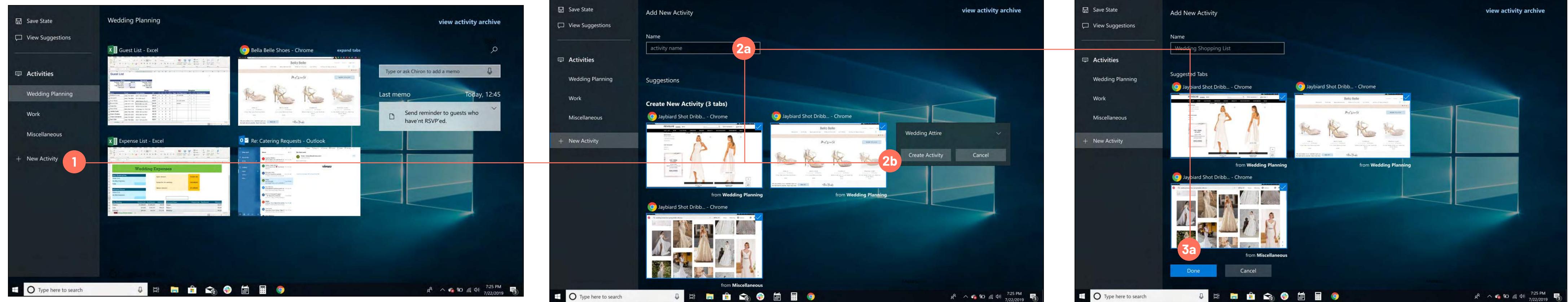
The names of these suggested activities will be determined by a machine learning algorithm based on whether they are grouped based on the context of use, time of use, or related application keywords.



# Key Paths

## Environment Building

### Create a new activity (from activity container)



**1** Users start creating a new activity by clicking on the menu.

**2a** By clicking on the text entry box, users are able to name the new activity.

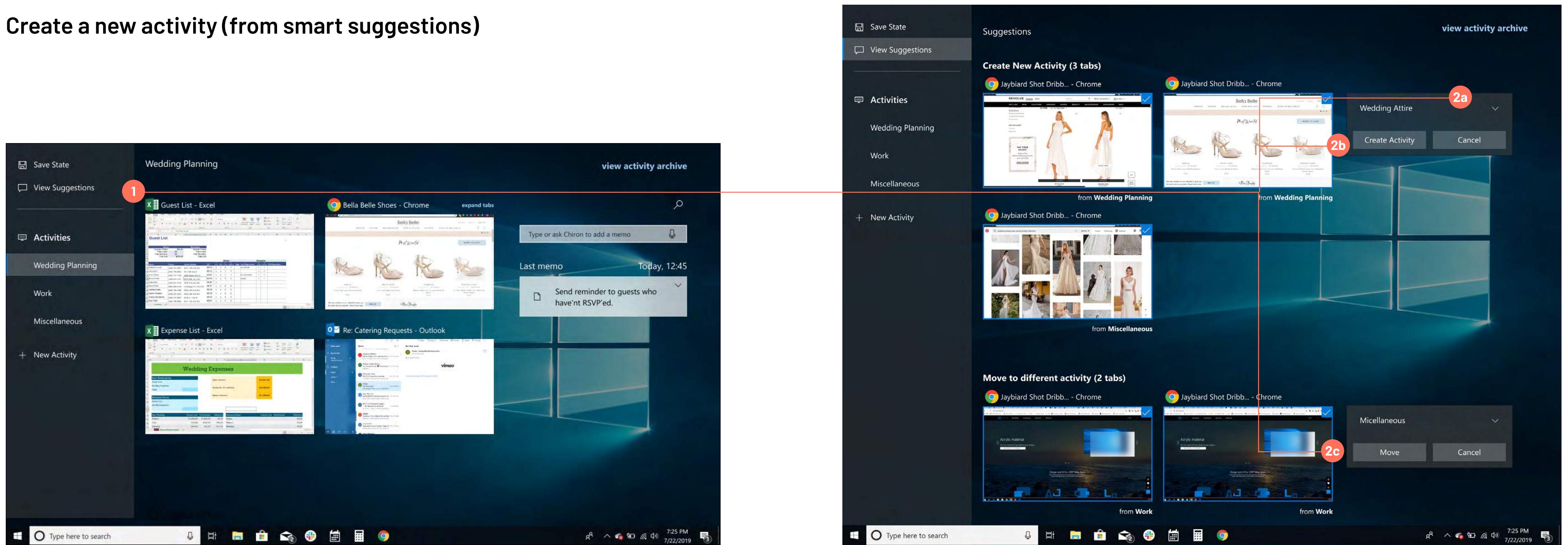
**2b** Users can also create a new activity directly by accepting the suggestions provided by Chiron.

**3a** Users confirm the name and suggested tabs for the new activity to complete the action.

# Key Paths

## Environment Building

### Create a new activity (from smart suggestions)



1 Users click on View Suggestions to view tabs for suggested activities.

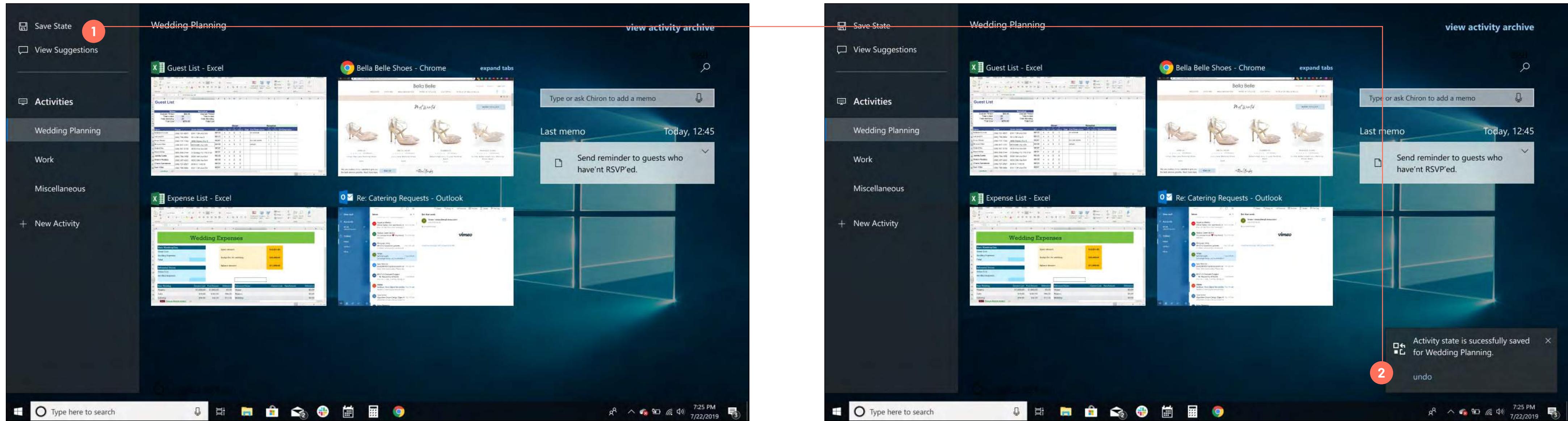
2a Users click dropdown menu to edit activity name.  
2b Users click create activity to create a new activity automatically by suggestions.

2c In the suggestion page, user can also move suggested tabs to existing activities.

# Key Paths

## Context Keeping

### Create a new save state



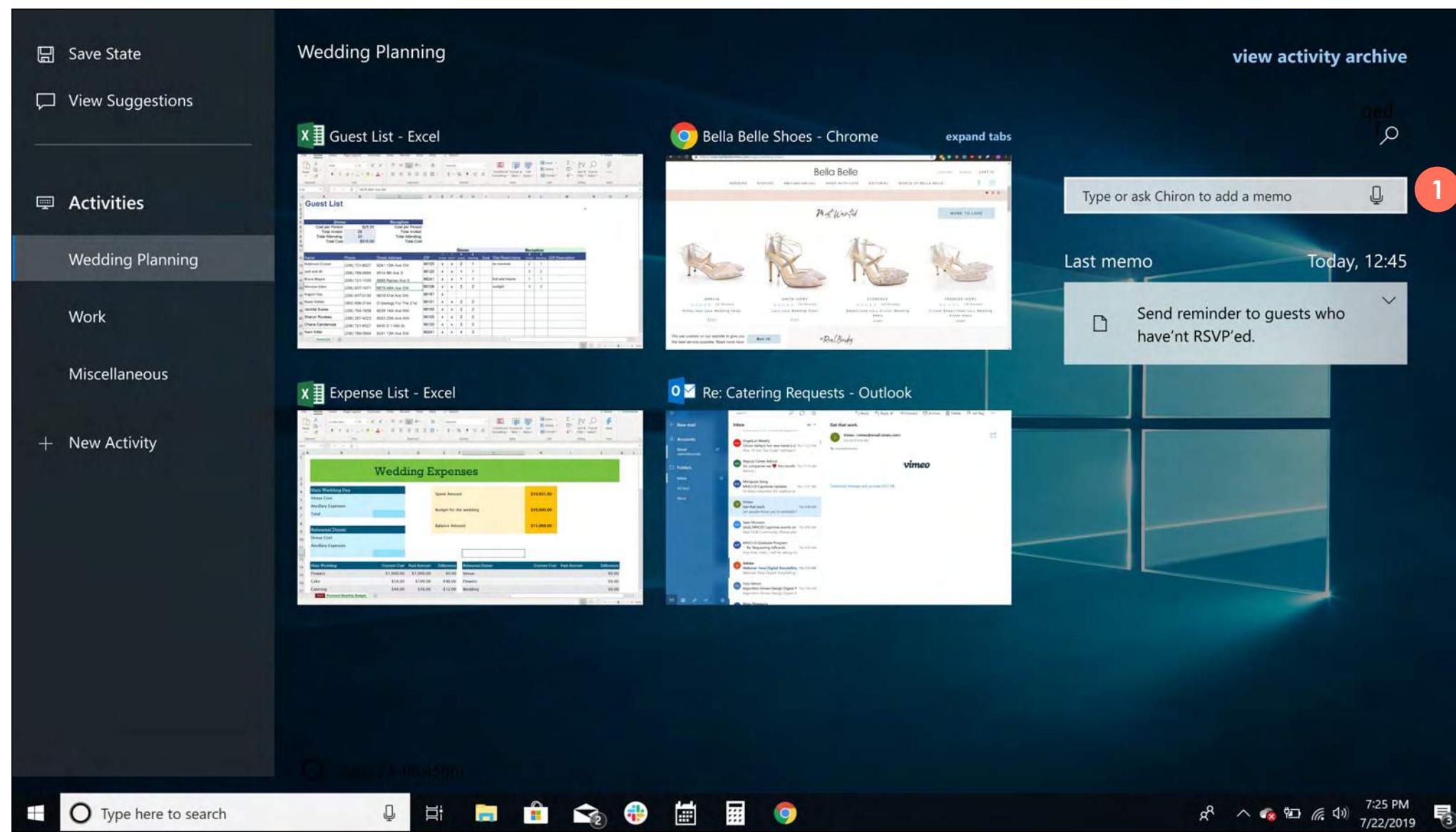
- 1 Users click the Save State button on the menu to save the current activity session.

- 2 After users save state, there will be a pop-up window that allows them to undo the action.

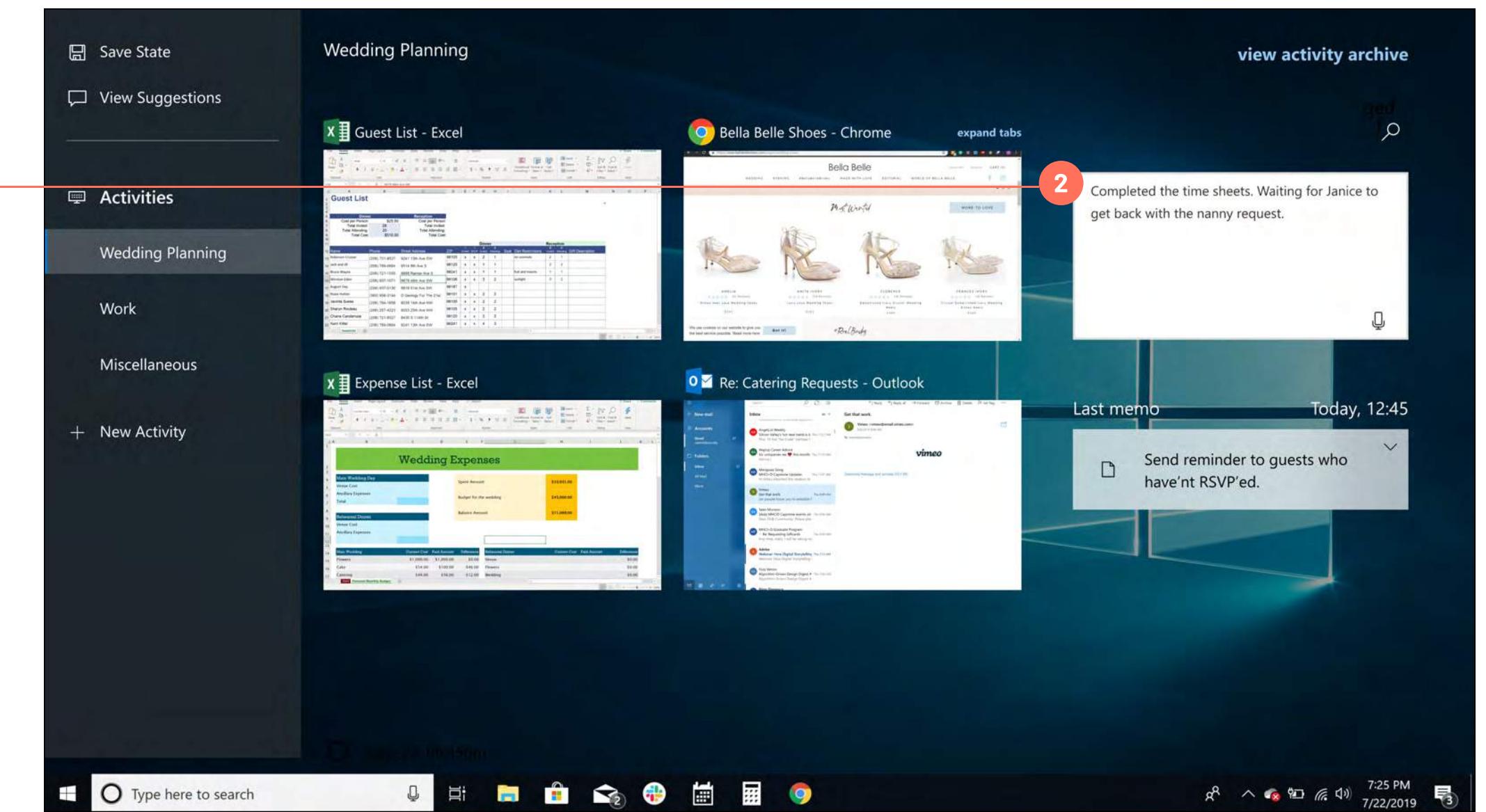
# Key Paths

## Context Keeping

### Create a new memo



- 1 Users can click the text entry box as well as directly speak to Chiron to create memos.

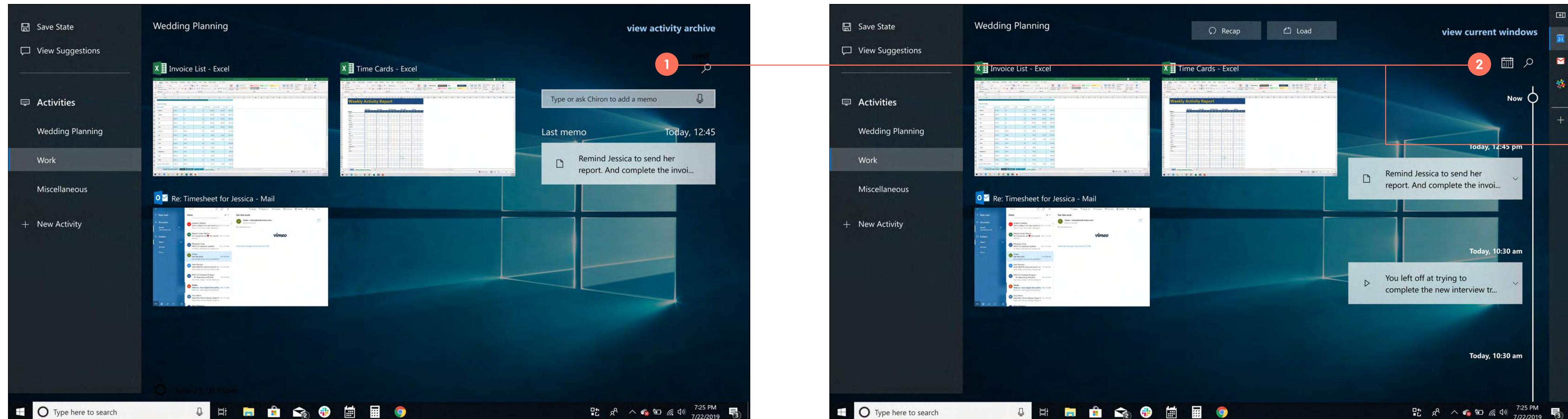


- 2 Users click on the screen to create the memo.

# Key Paths

## Activity Switching

### Load a previous state (1/3)



1 To load a previous state, users click view activity archive to switch to the activity archive view.

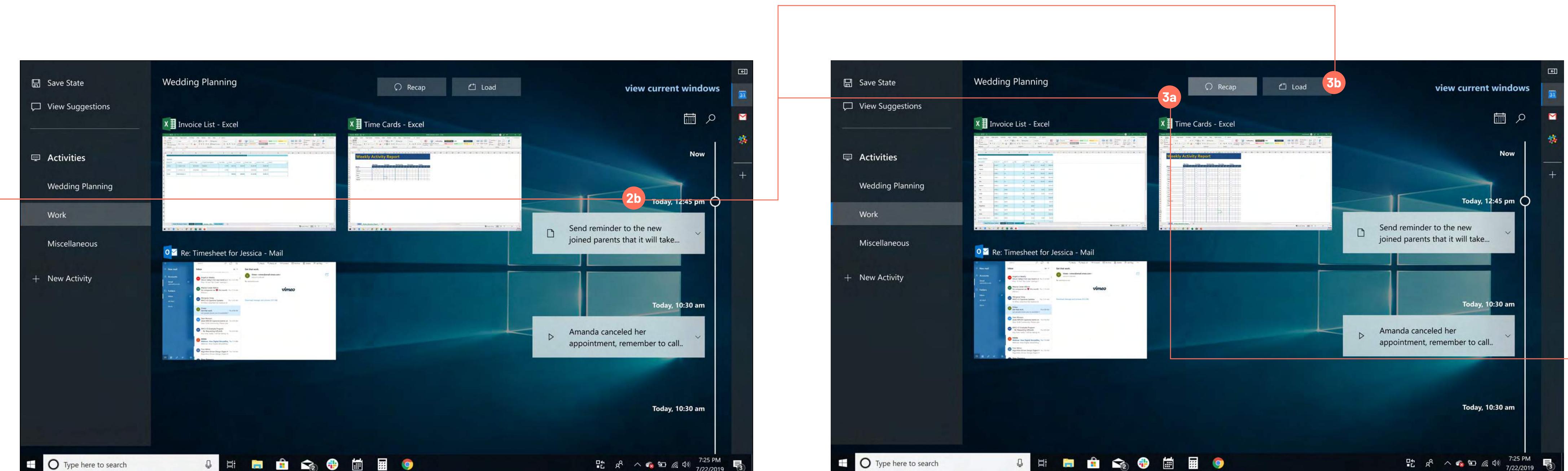
2a In the activity archive view, users can load a previous state using the timeline feature.

The calendar button allows users to quickly jump to a certain date without scrolling the timeline.

# Key Paths

## Activity Switching

### Load a previous state (2/3)



**2b** Users can also scroll and click on the timeline to select a previous state.

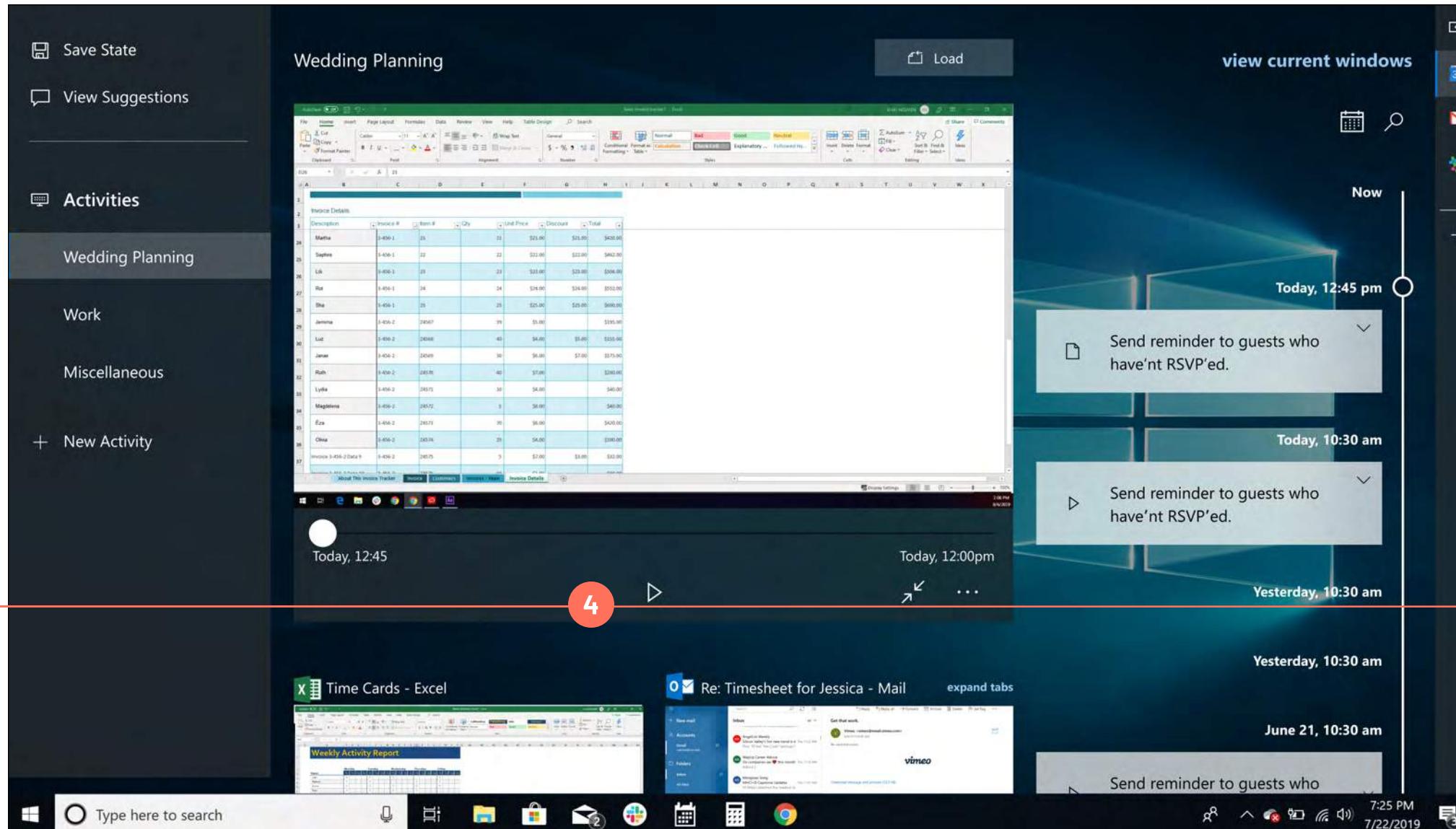
**3a** To see more details for the previous session, users can click the Recap button to watch the timelapse.

**3b** By clicking the Load button, the selected state will be loaded.

# Key Paths

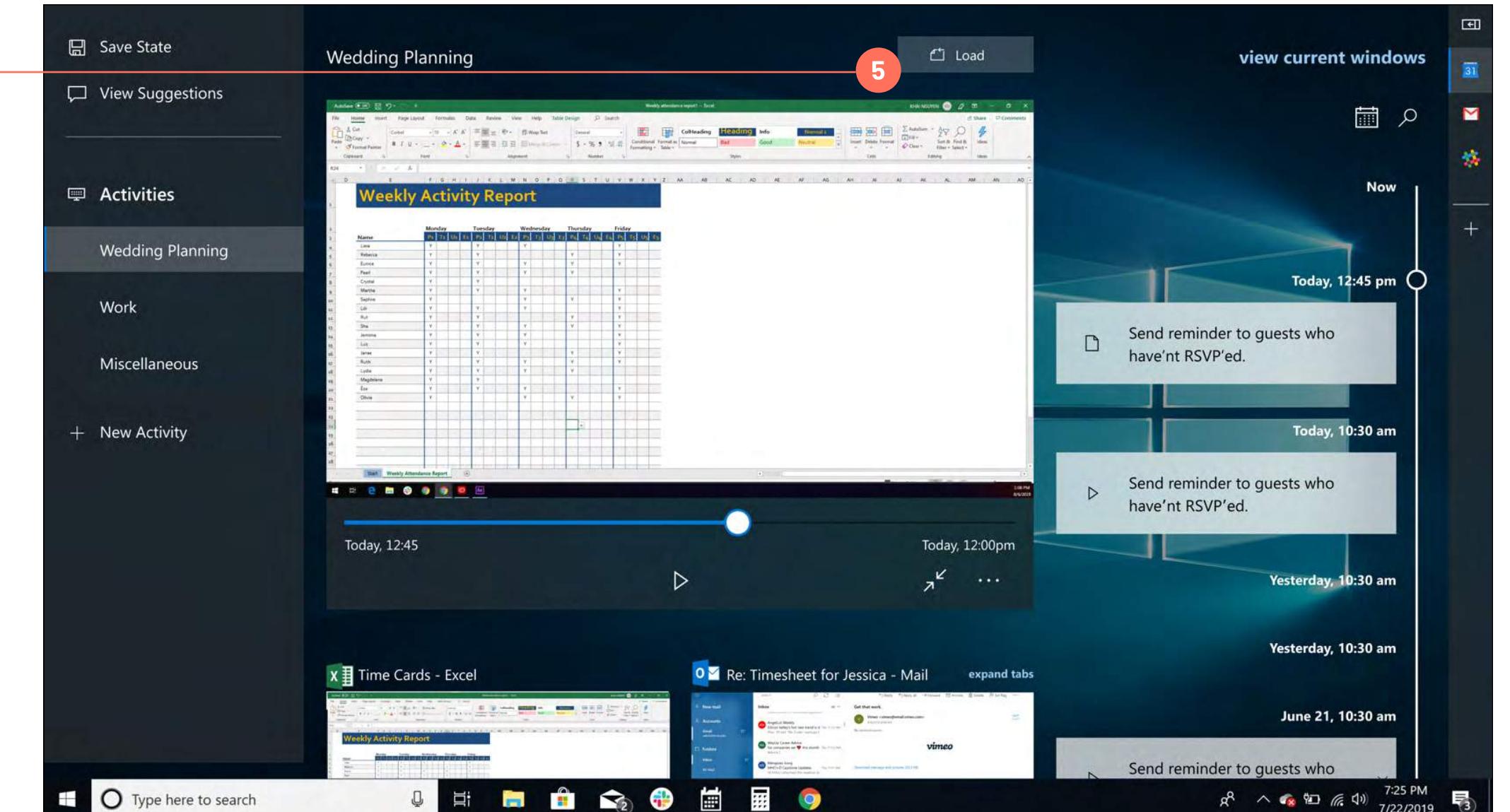
## Activity Switching

### Load a previous state (3/3)



- 4 Click the play button, users can watch the timeplase of the selected previous session. A series of screen shots will help users reattach to a previous activity state.

The play bar also allows users to customize the playing speed or reverse the timeline.

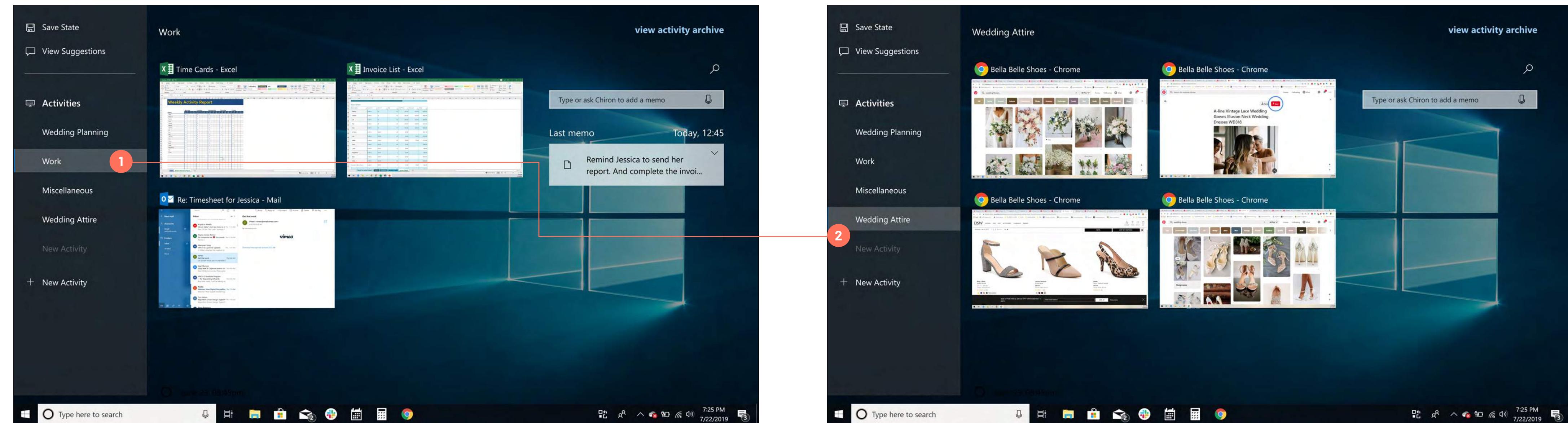


- 5 By clicking the Load button, the selected state will be loaded.

# Key Paths

## Activity Switching

### Toggle between activities



1 Chiron helps users keep and switch between multiple activities with its activity container.

2 From the activity container, users hover over the activities to preview active tabs, then click to switch between projects.

# Visual System

Microsoft Fluent Design System

## Color palette

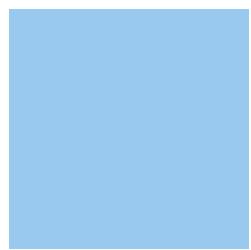
We envision Chiron to be a core feature of Windows 10. For the sake of consistency and velocity, we adapted our design system from the Fluent Design System by Microsoft.

PRIMARY



Microsoft Blue  
#0078D4

SECONDARY



Light Blue  
#0078D4

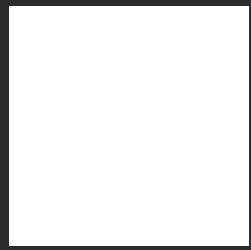


Acrylic Black  
#2D2D2D 90%  
#2D2D2D 50%



Solid Black  
#000000

PRIMARY

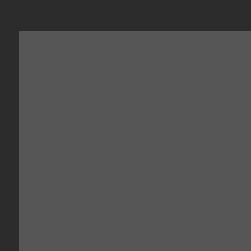


White  
#FFFFFF

SECONDARY



Background White  
#FFFFFF 60%



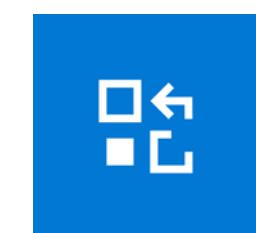
Overlay White  
#FFFFFF 20%

# Visual System

Microsoft Fluent Design System

## Logo

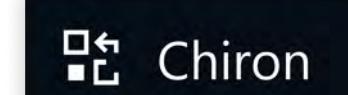
The logo design tries to align with the existing design system for the different windows application icons.



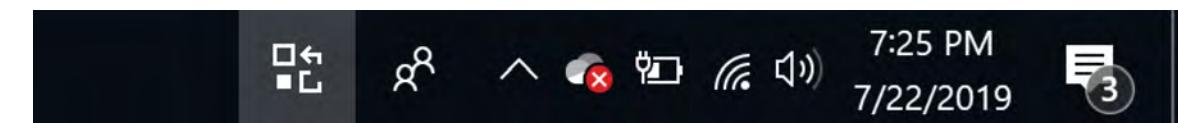
Chiron



Chiron



Chiron



# Visual System

Microsoft Fluent Design System

## Typography

### FONT STYLES

AaBbCc

Segoe UI

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

0123456789

~%!@#\$%^&\*-\_=+

[],{}|\\<>''',.;?

### FONT WEIGHTS

Light  
Semilight  
Mono Regular  
Regular  
*Italic*  
**Semibold**  
**Mono Bold**  
**Bold Italic**  
**Bold**

### FONT STYLES

PLUGIN HEADINGS  
SELECTED ACTIVITY  
ACTIVITY  
SWITCH VIEWS  
BODY TEXT  
NOTIFICATION UNDO  
TAB NAMES  
TAB ACTIVITY NAMES  
TIME LINE  
BUTTONS

Segoe UI Regular 20pt  
**Segoe UI Semibold 16**  
Segoe UI Regular 16  
**Segoe UI Bold #99C9EF 16**  
Segoe UI Regular 14pt  
Segoe UI Regular #99C9EF 14  
Segoe UI Regular 13  
**Segoe UI Bold 12**  
**Segoe UI Bold 12**  
Segoe UI Regular 12

### MEMO TEXT

Segoe UI Regular 14

### MEMO BUTTONS

Segoe UI Regular 11

# Visual System

Microsoft Fluent Design System

## Iconography

We selected icons from the Fluent Design System,  
which are all unfilled icons.

MENU BAR



TIMELINE



MEMO



BURRONS



PLUGIN BAR

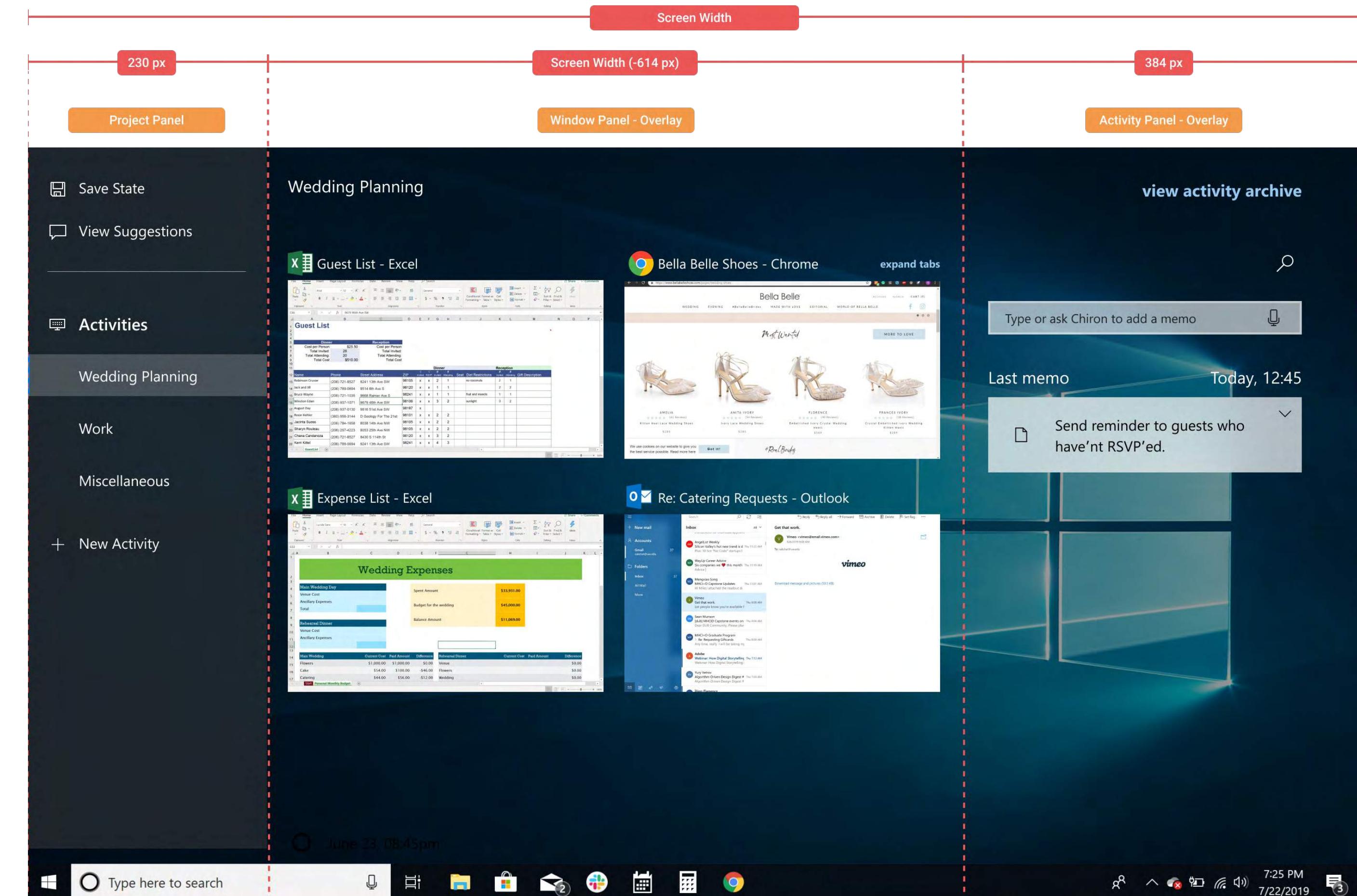


PLAY BAR

# Visual System

UI Redlines | Main Page

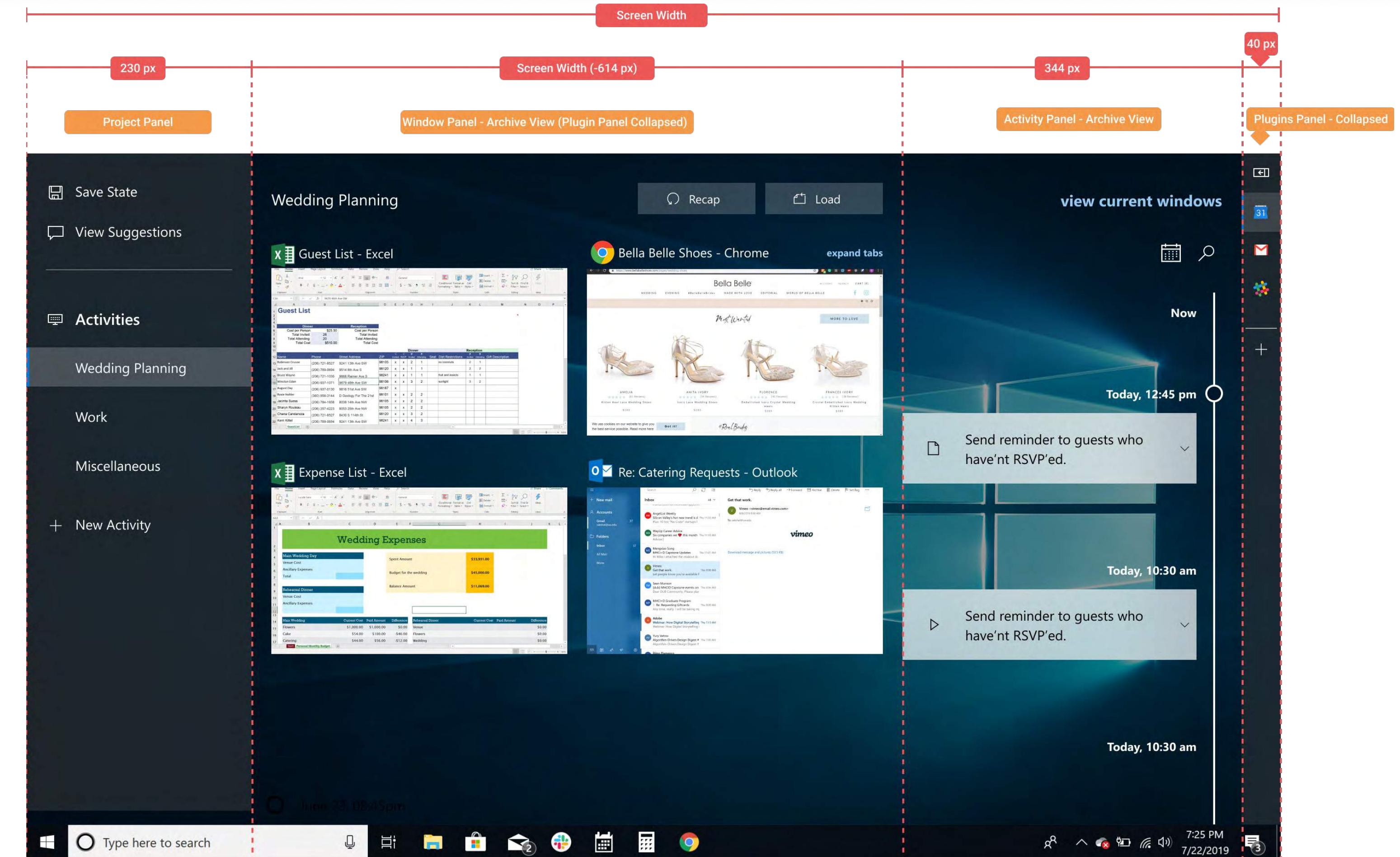
## Current activity view



# Visual System

UI Redlines | Main Page

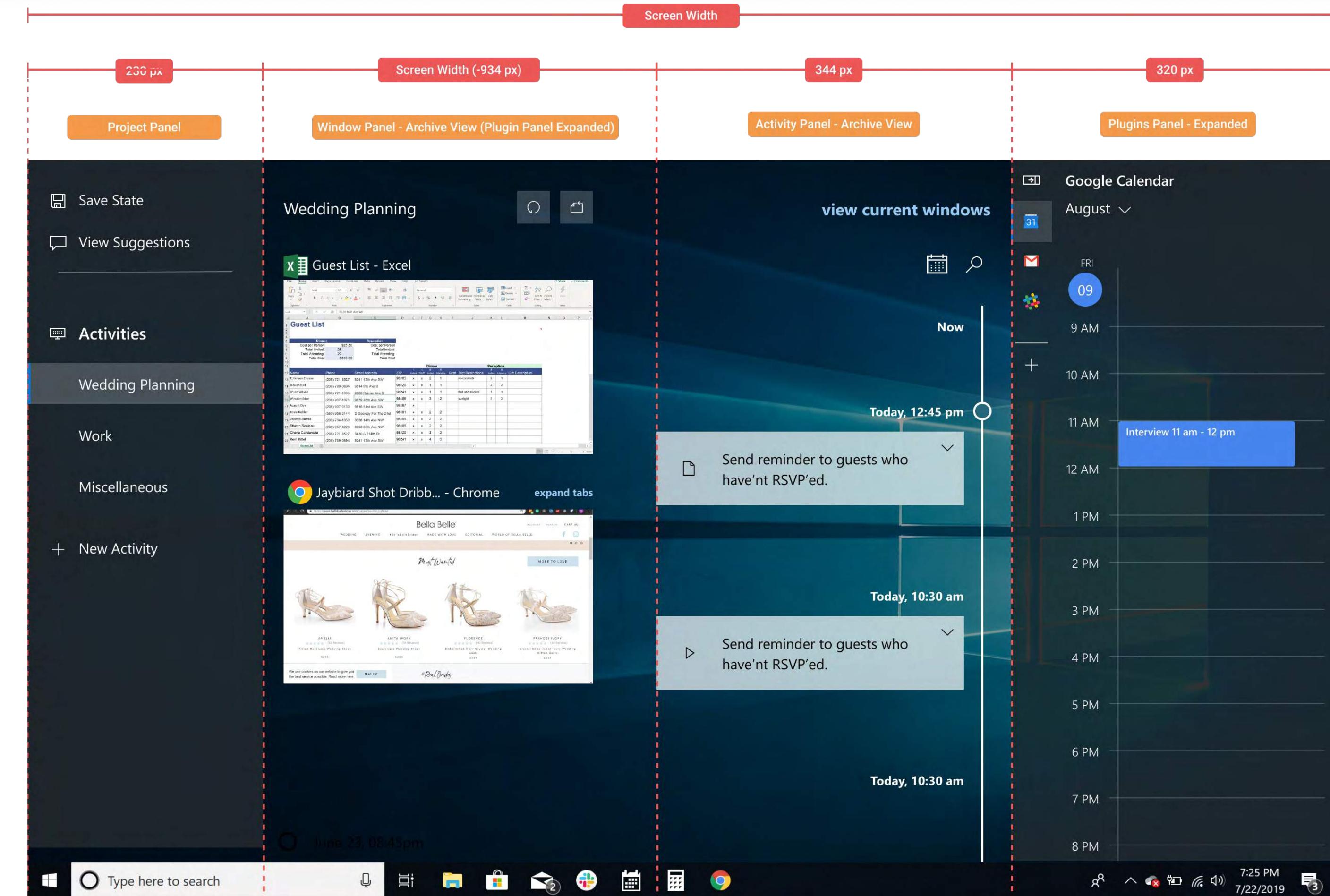
## Activity archive view (plugin panel collapsed)



# Visual System

UI Redlines | Main Page

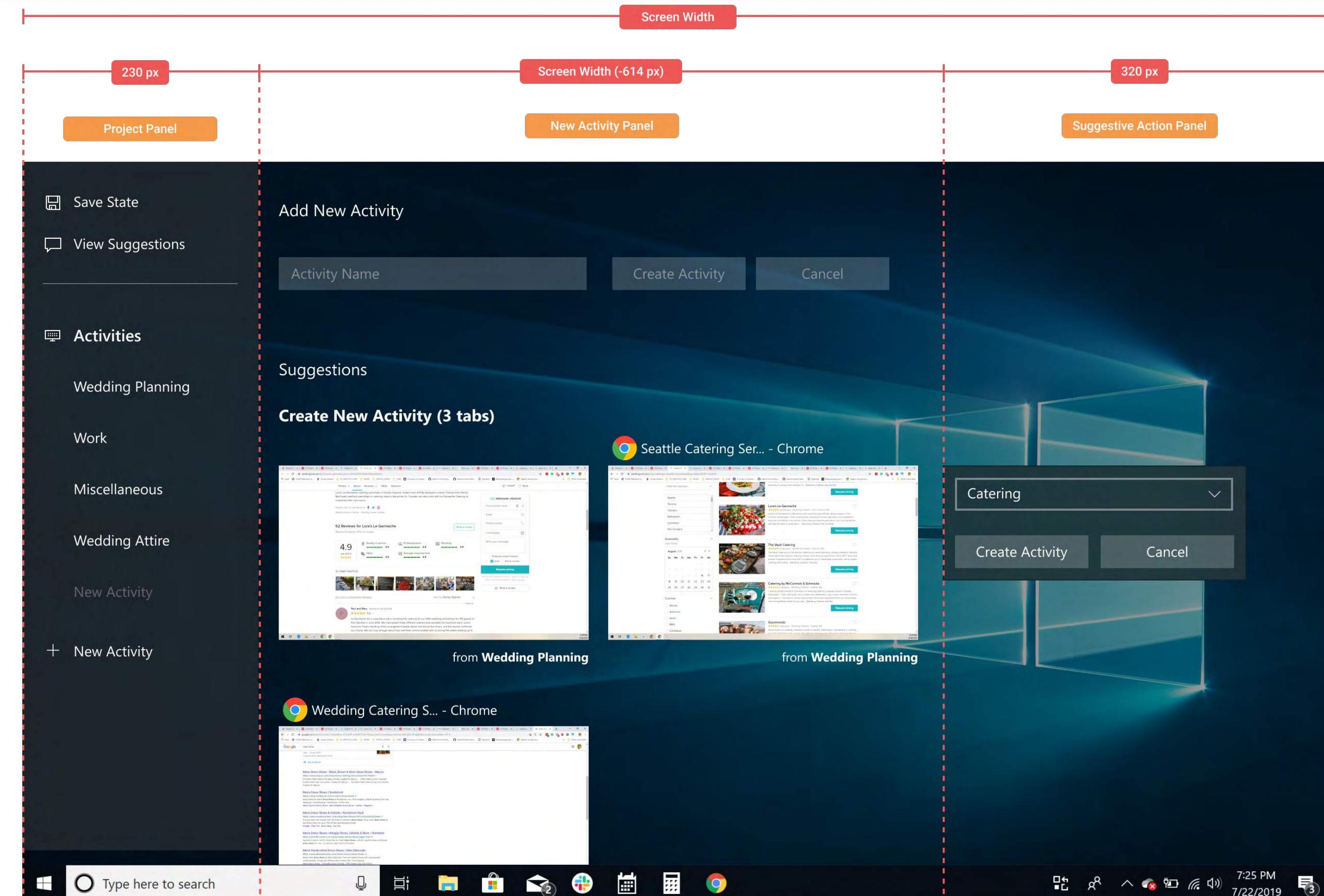
## Activity archive view (plugin panel expanded)



# Visual System

UI Redlines | Main Page

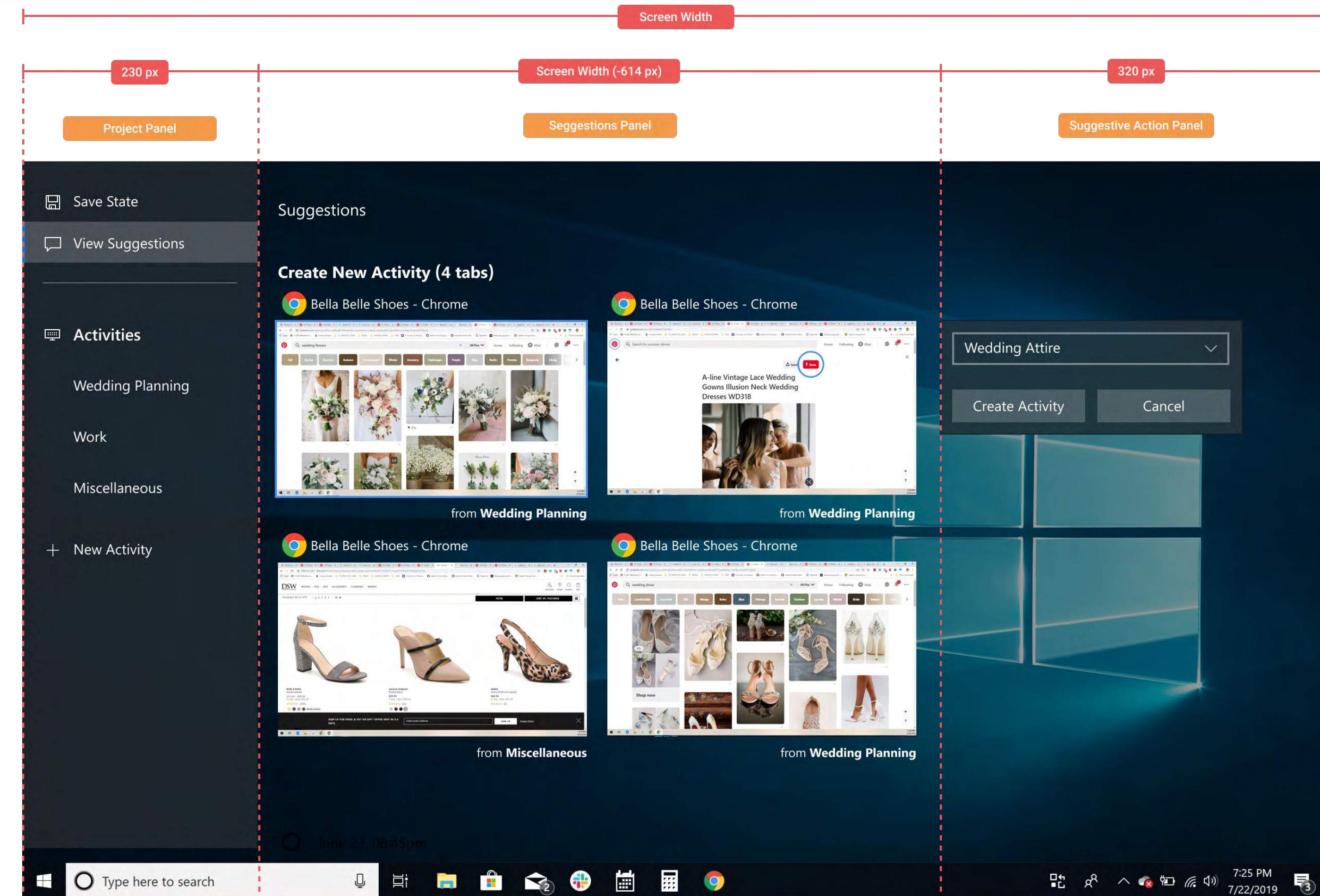
## New activity screen



# Visual System

UI Redlines | Main Page

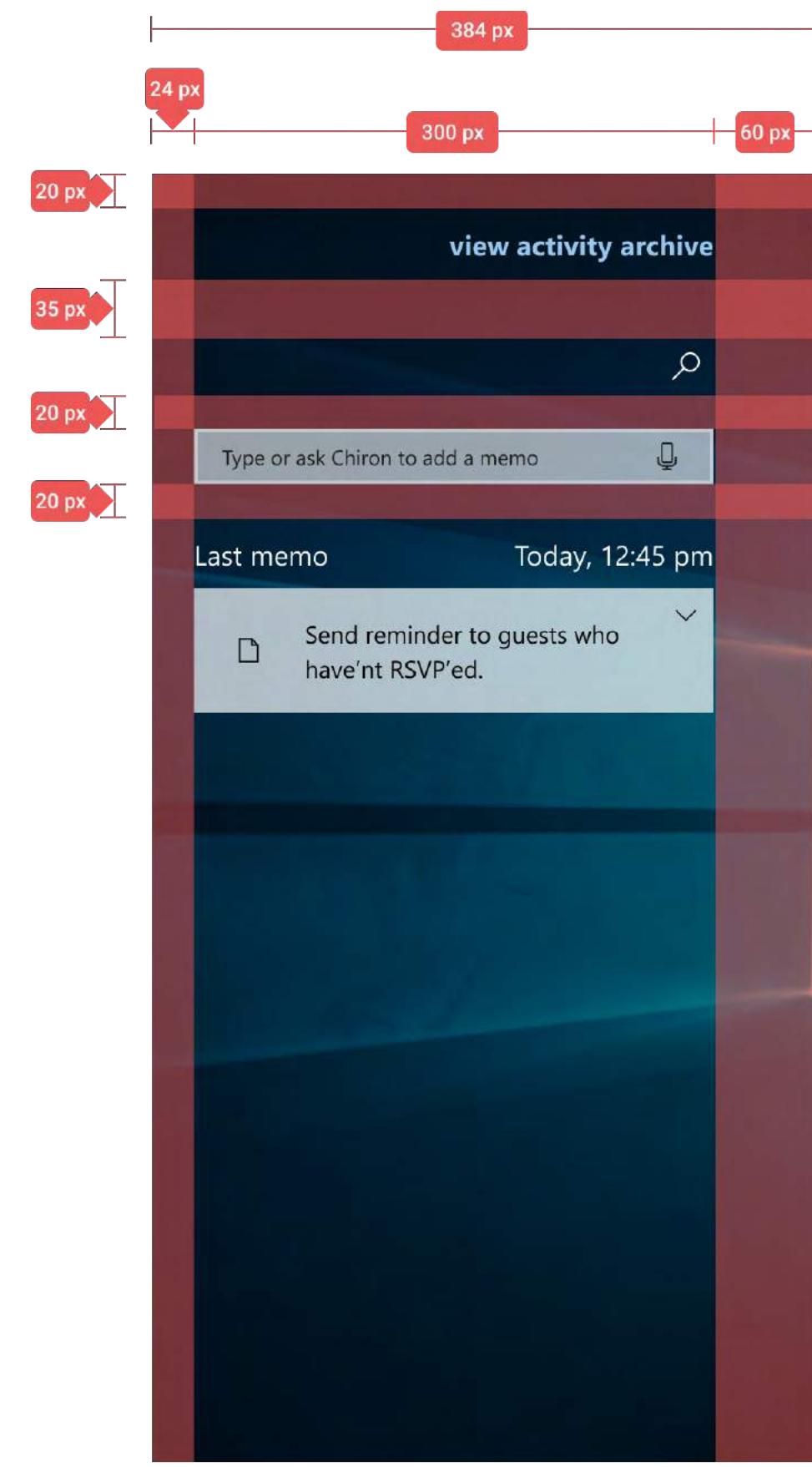
## Suggestions screen



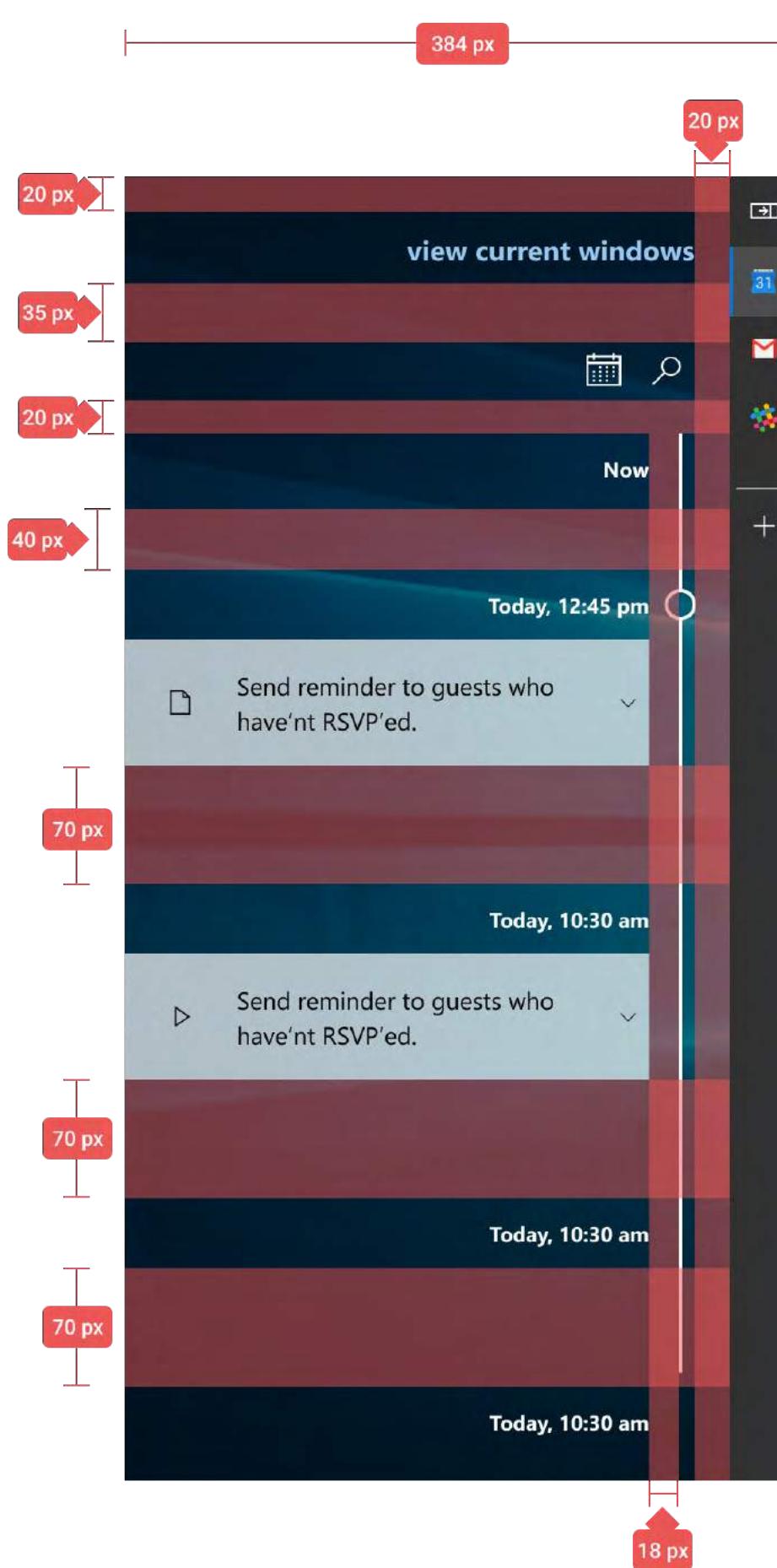
# Visual System

UI Redlines | Window Panel

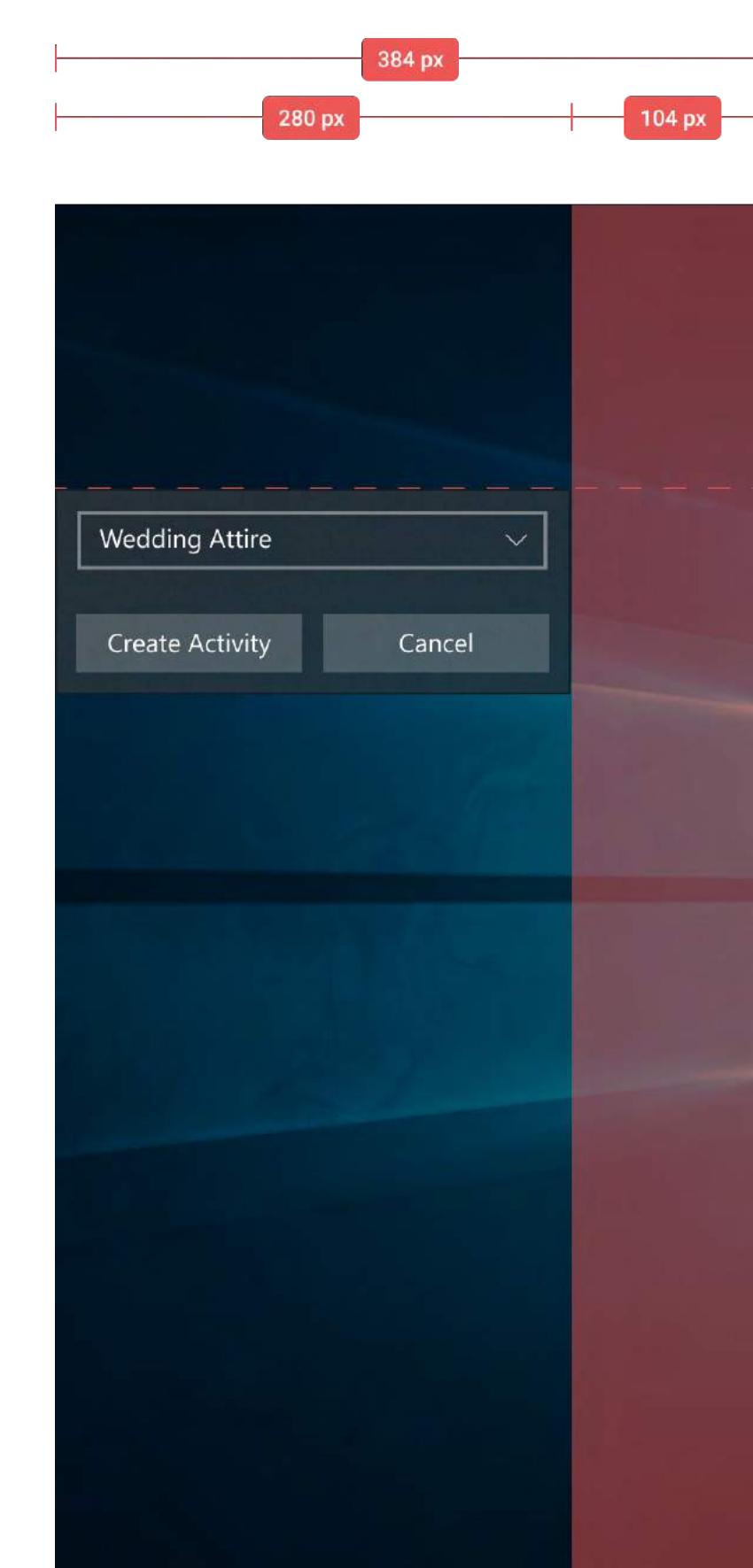
Current Activity View



Activity Archive View



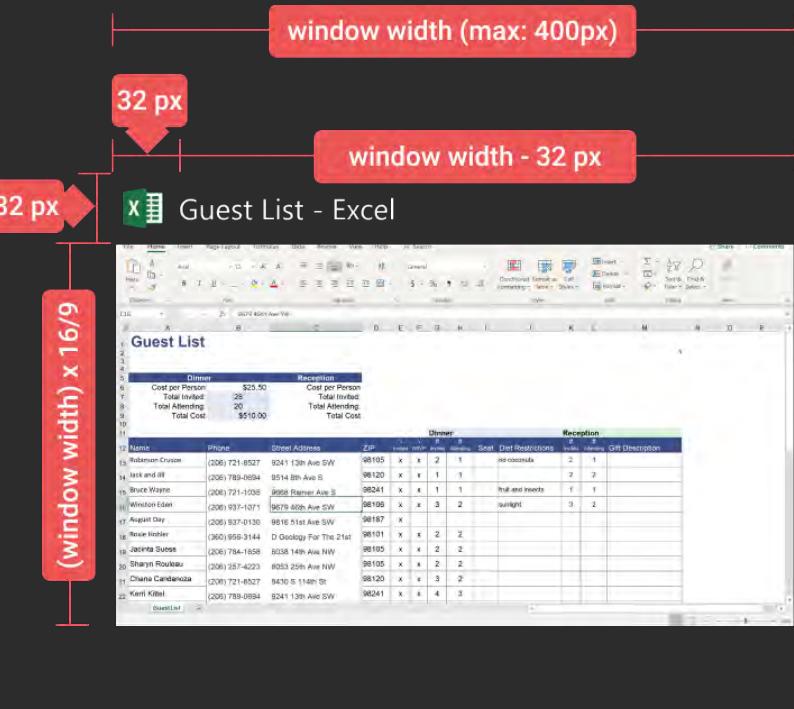
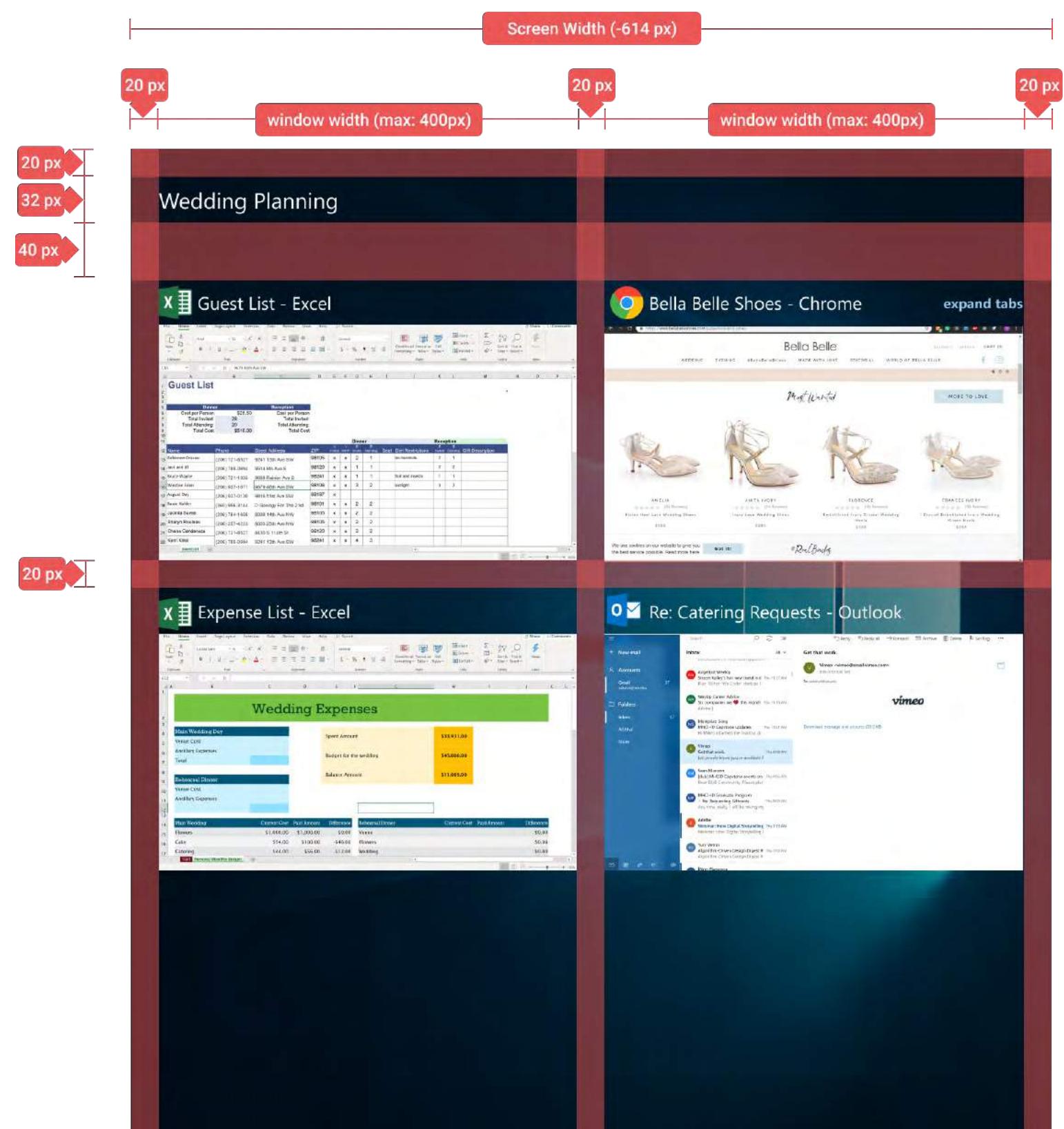
Suggested Action Panel



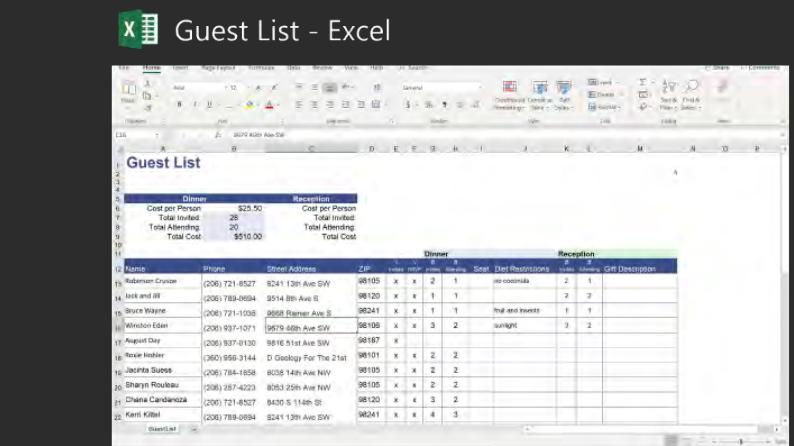
# Visual System

## UI Redlines | Window Panel

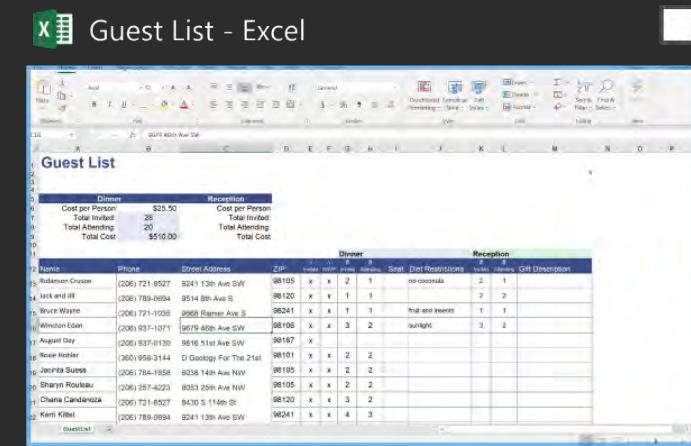
### Overlay



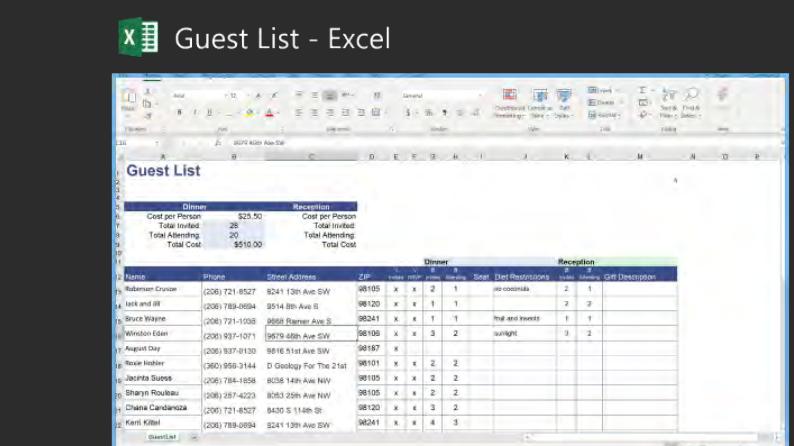
Rest



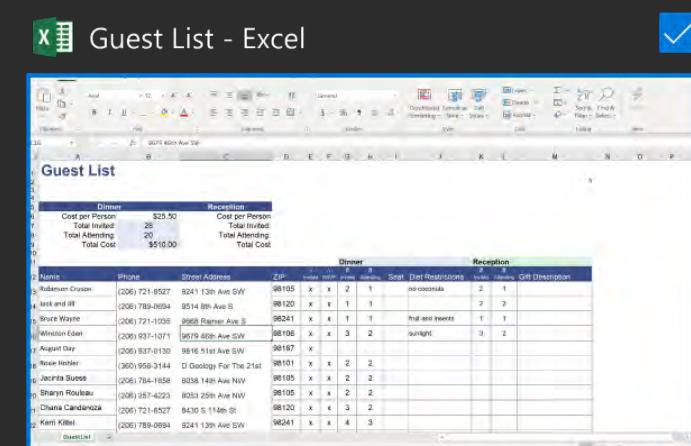
Checkbox (unselected)



Hover



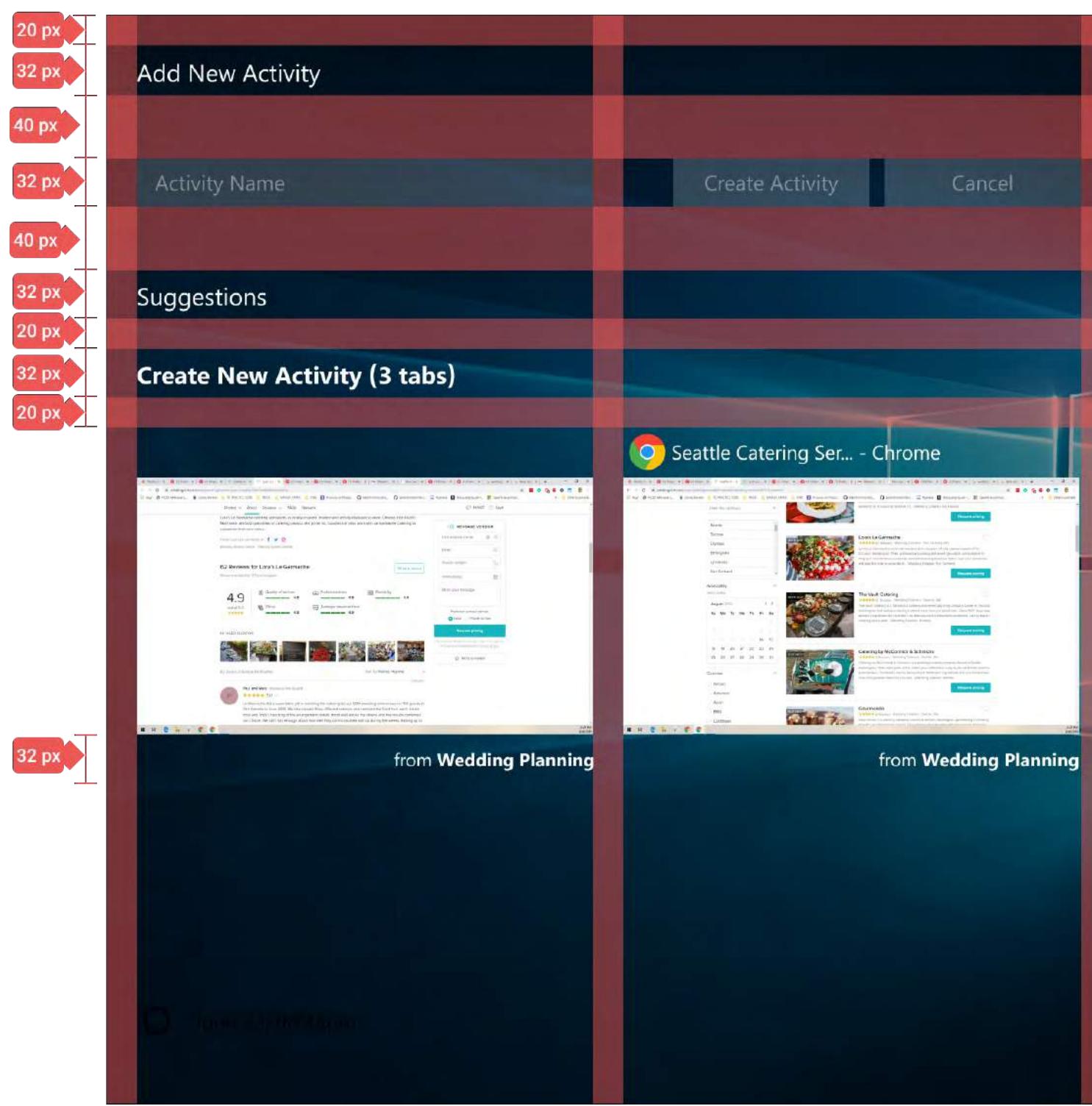
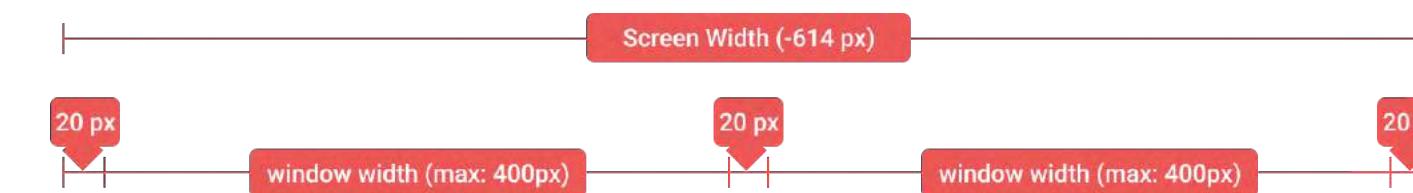
Checkbox (selected)



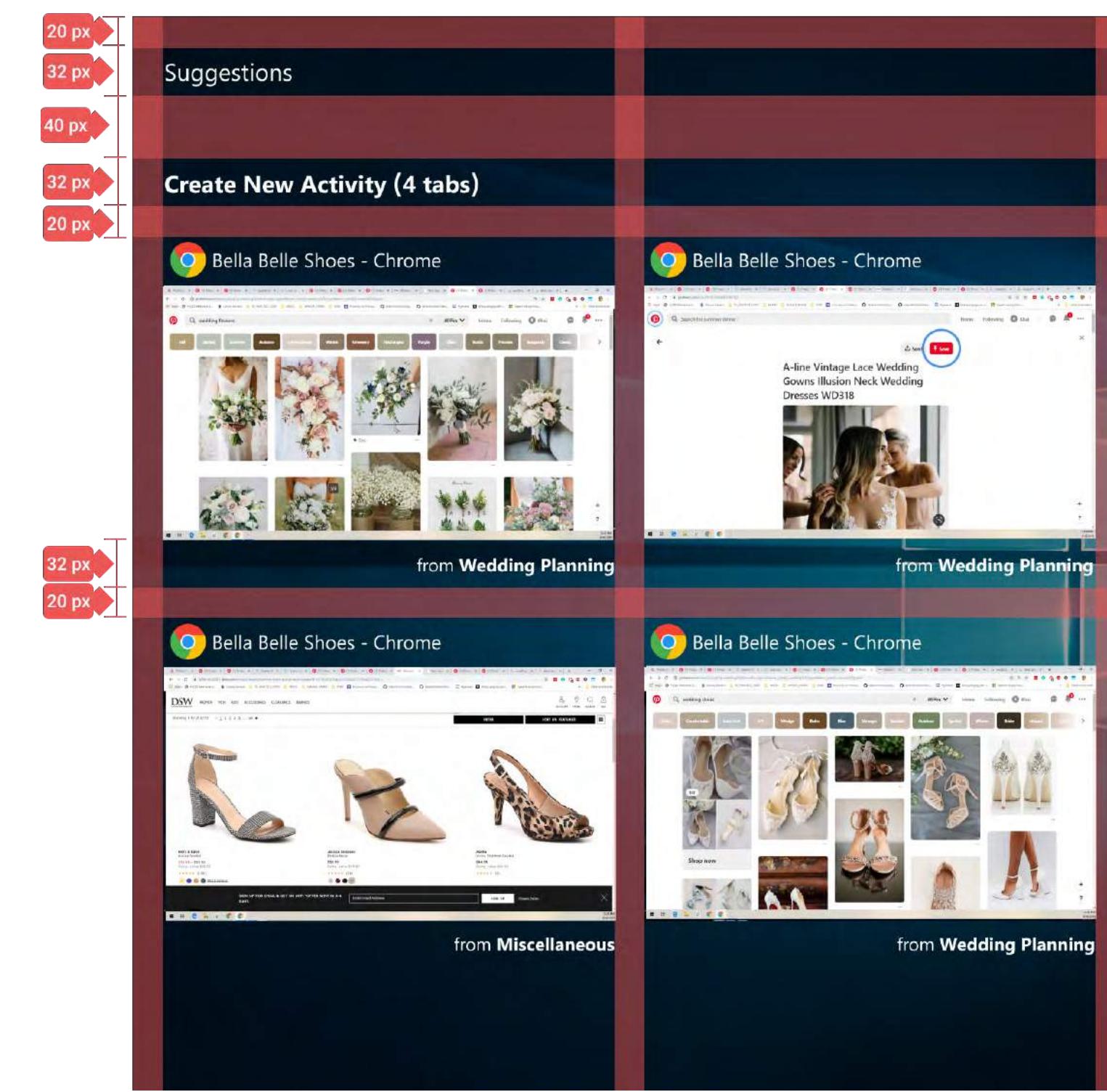
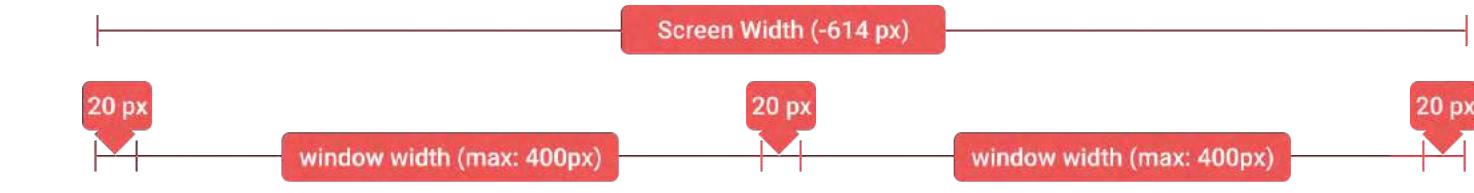
# Visual System

UI Redlines | Window Panel

New activity panel



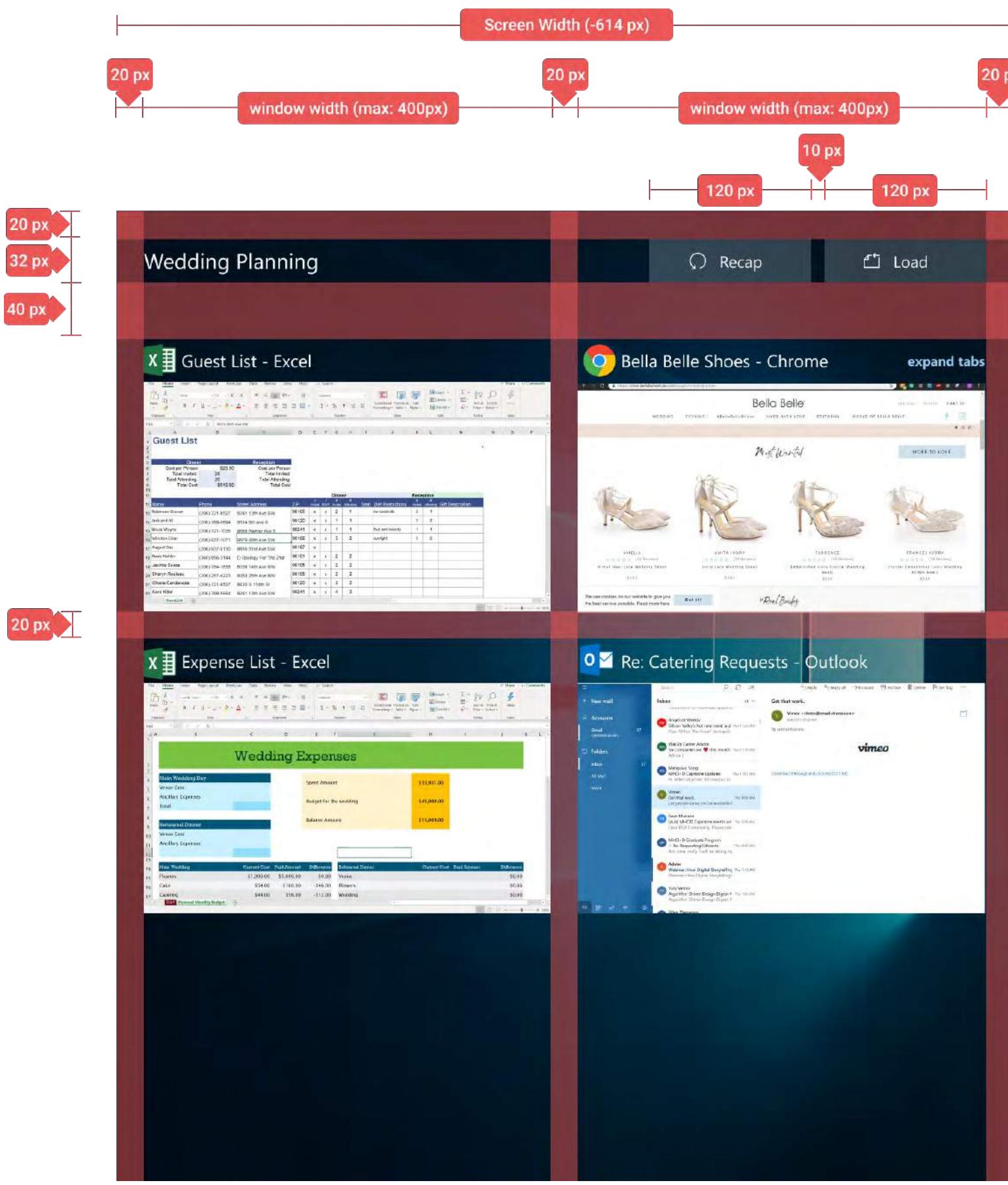
Suggestions panel



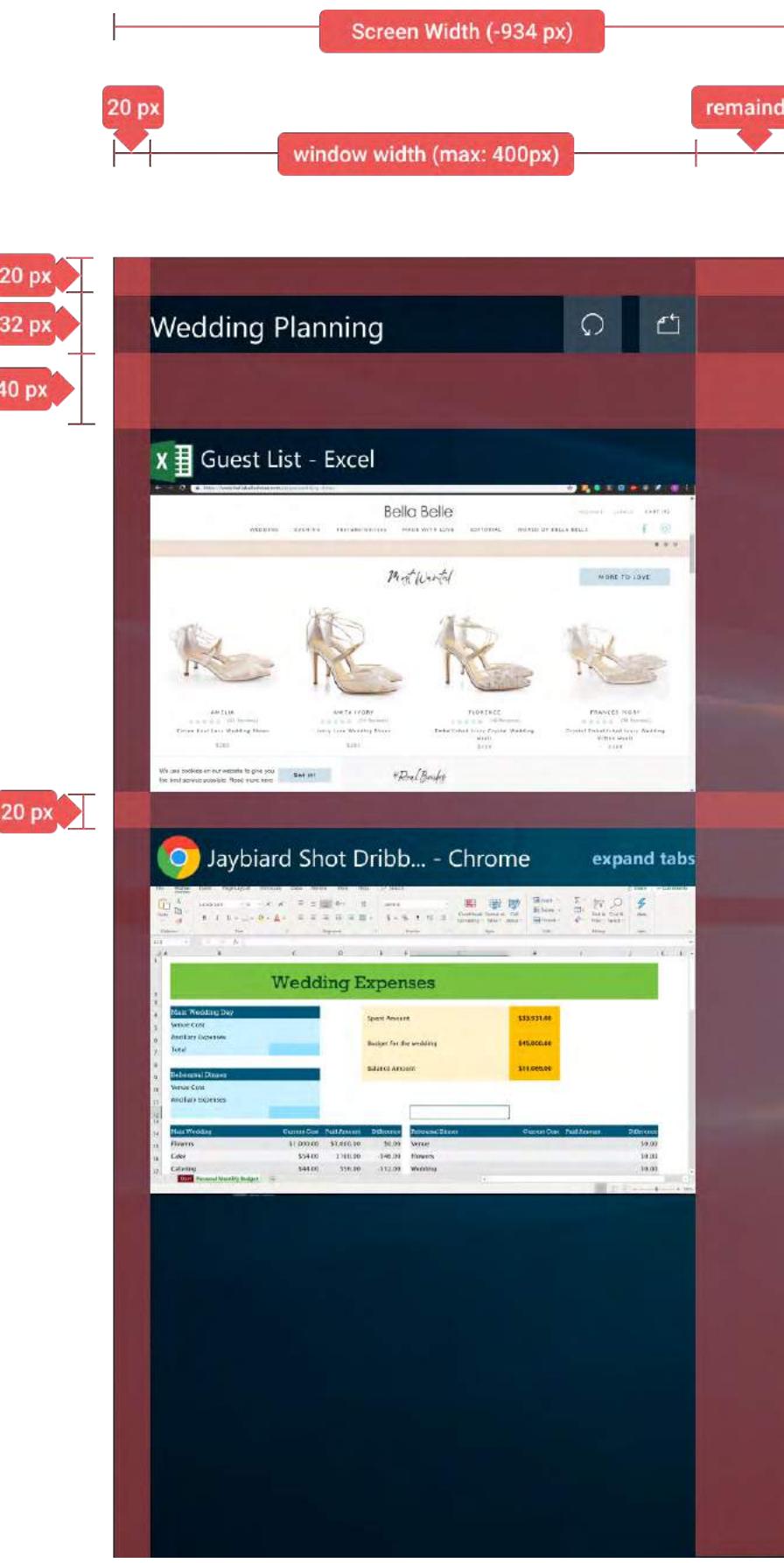
# Visual System

UI Redlines | Window Panel

Plugin panel collapsed



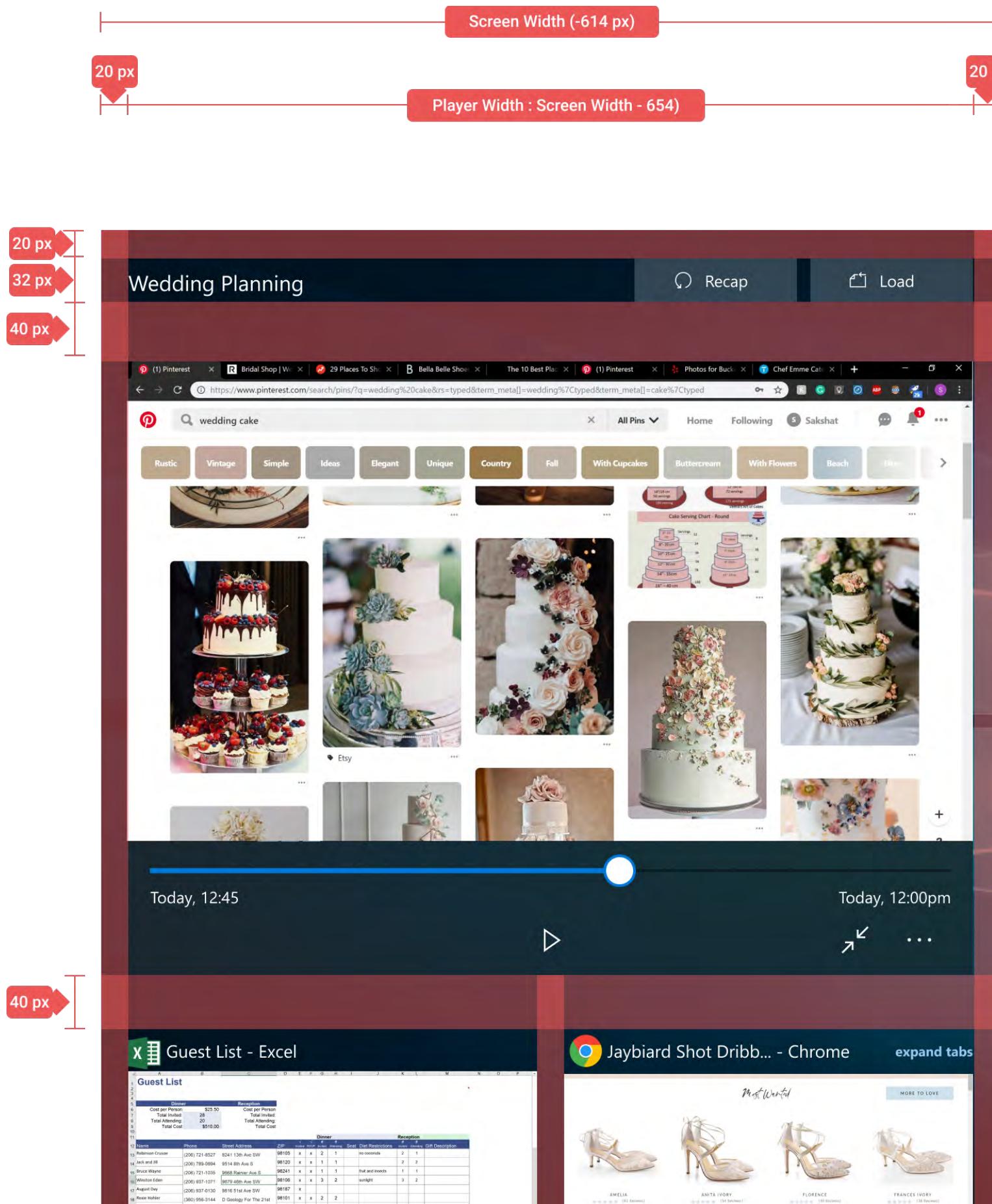
Plugin panel expanded



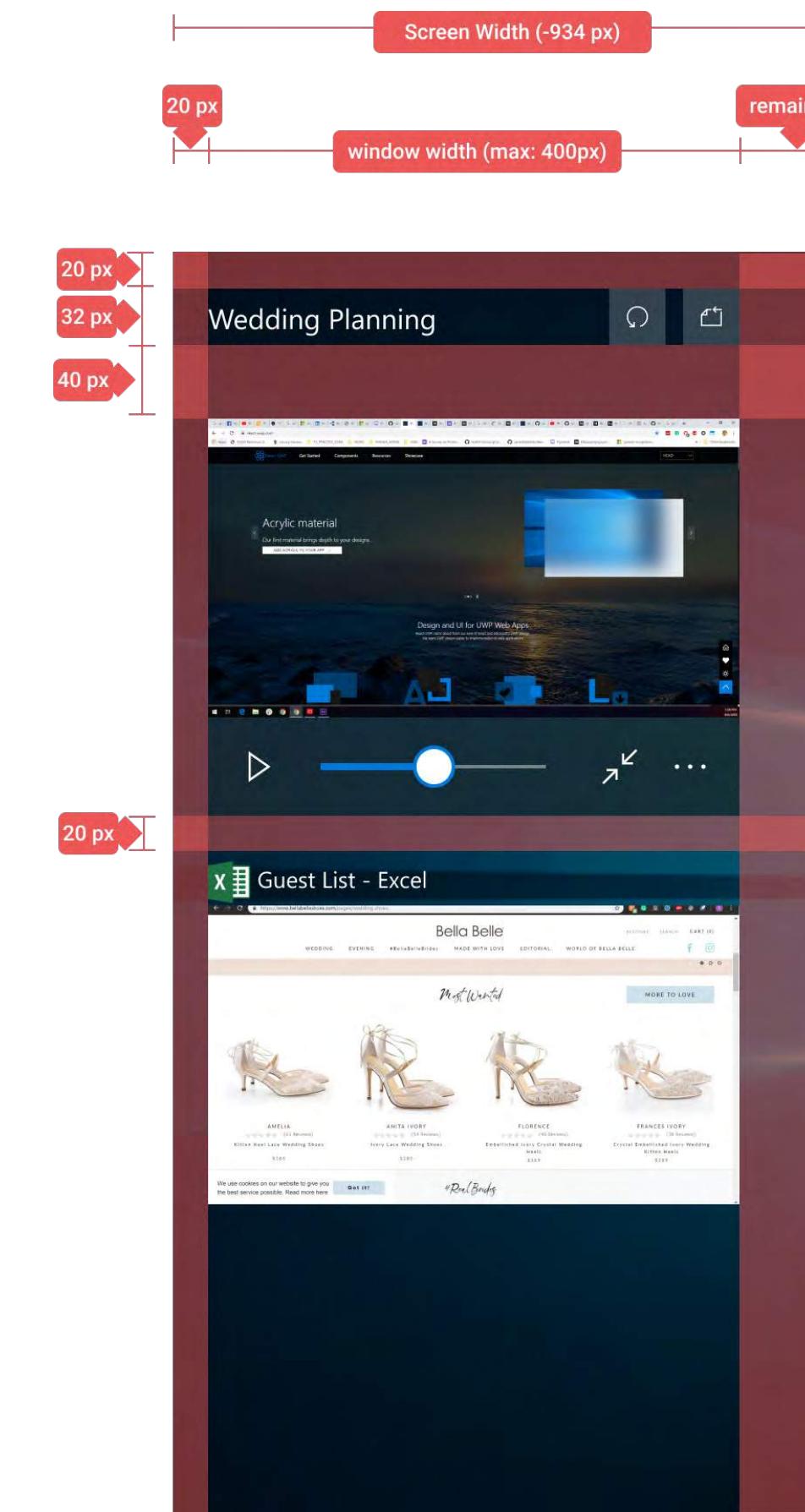
# Visual System

UI Redlines | Archive View

Window panel with timelapse player & plugin panel collapsed



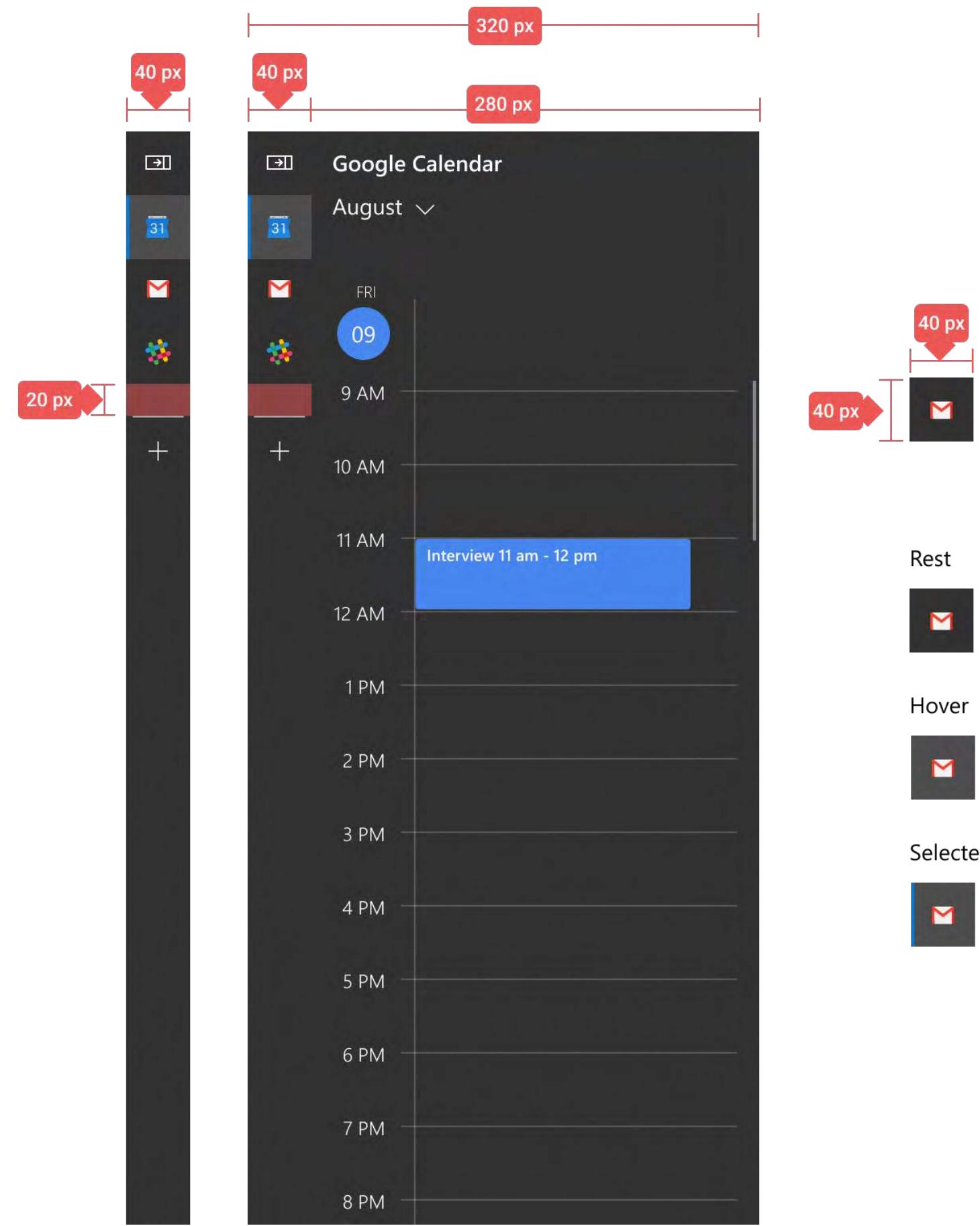
Window panel with timelapse player & plugin panel expanded



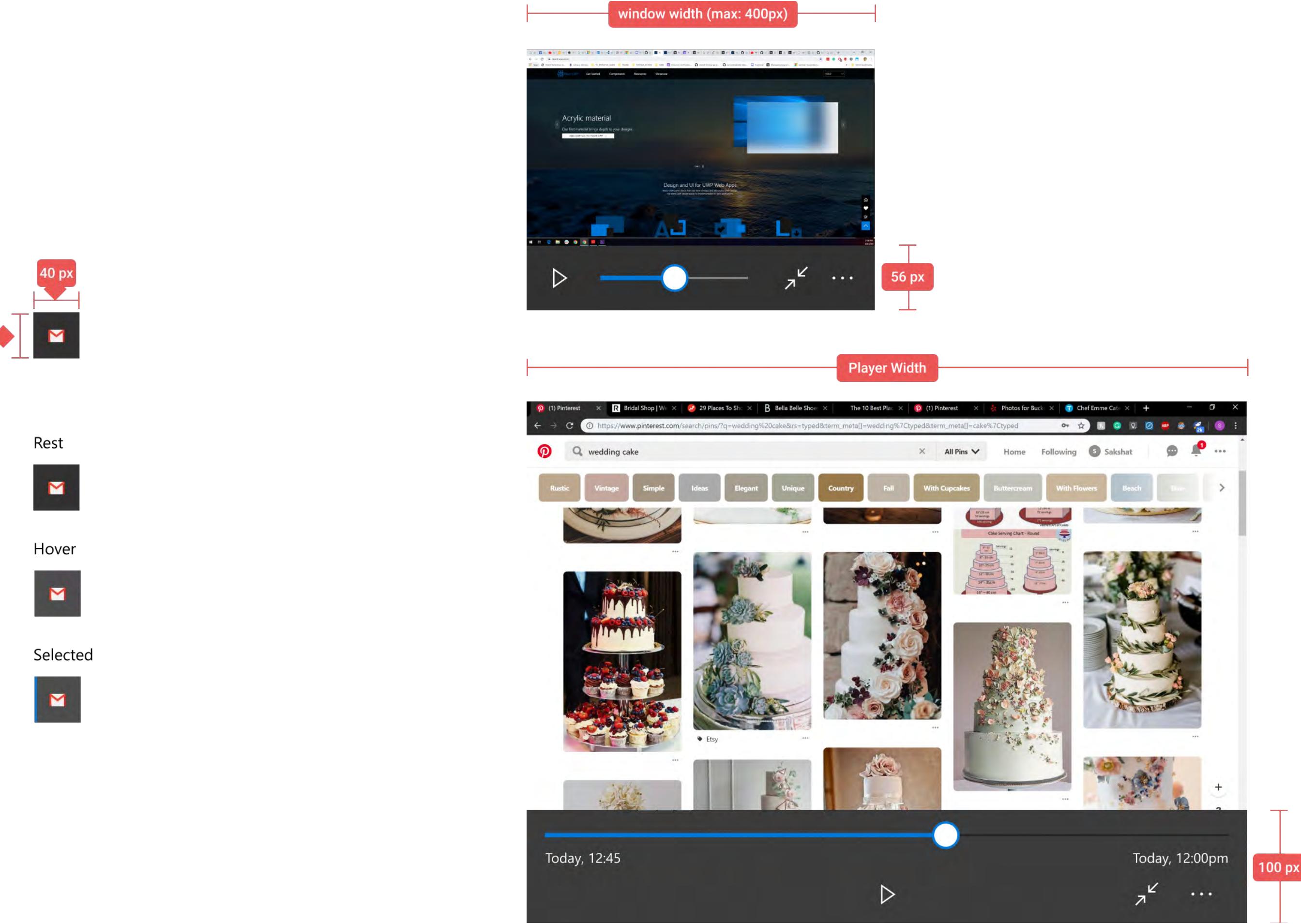
# Visual System

UI Redlines | Archive View

## Plugin Panel



## Timelapse Player



Rest



Hover



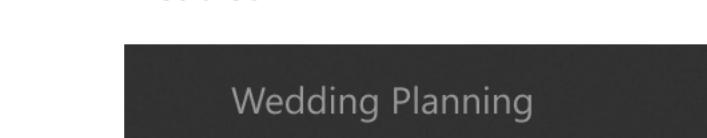
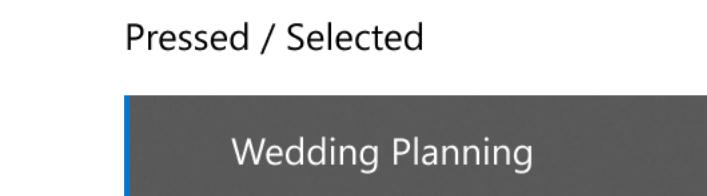
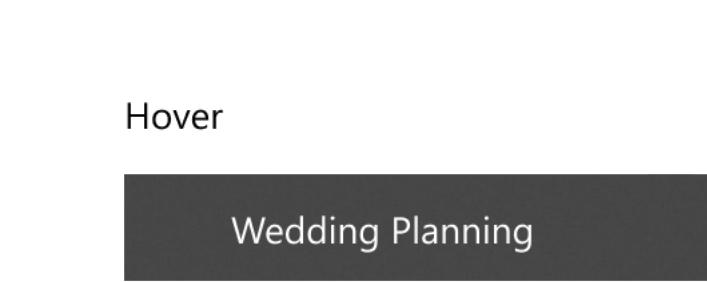
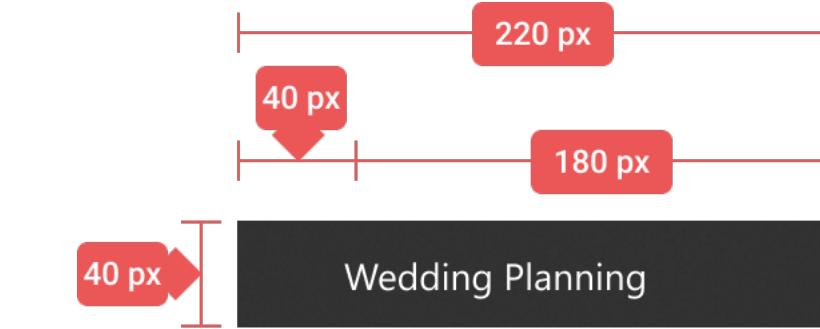
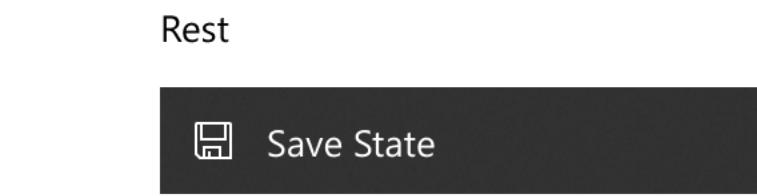
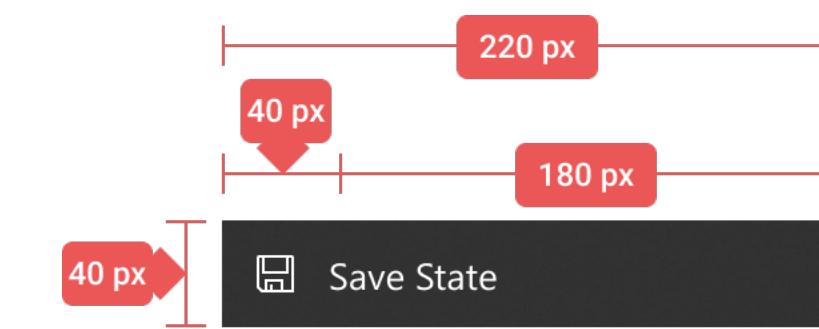
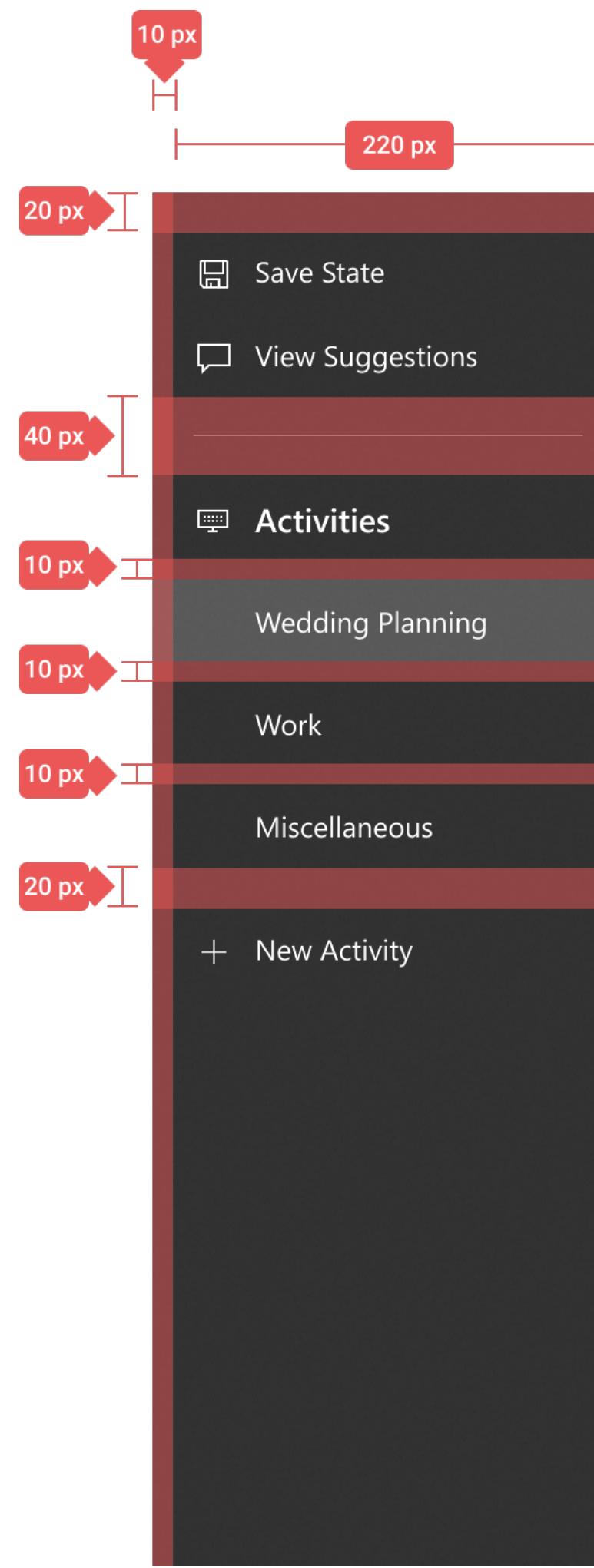
Selected



# Visual System

UI Redlines | Project Panel

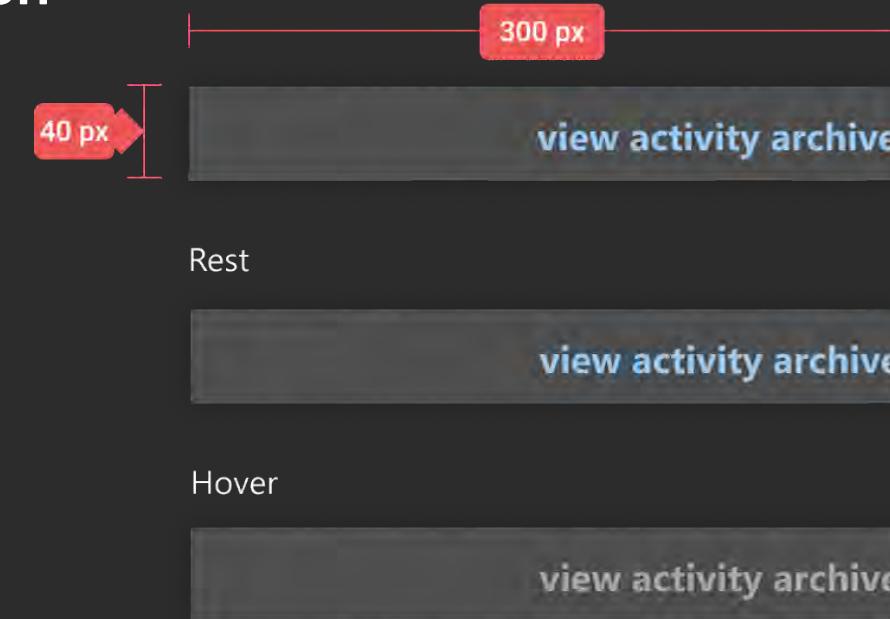
## Menu bar



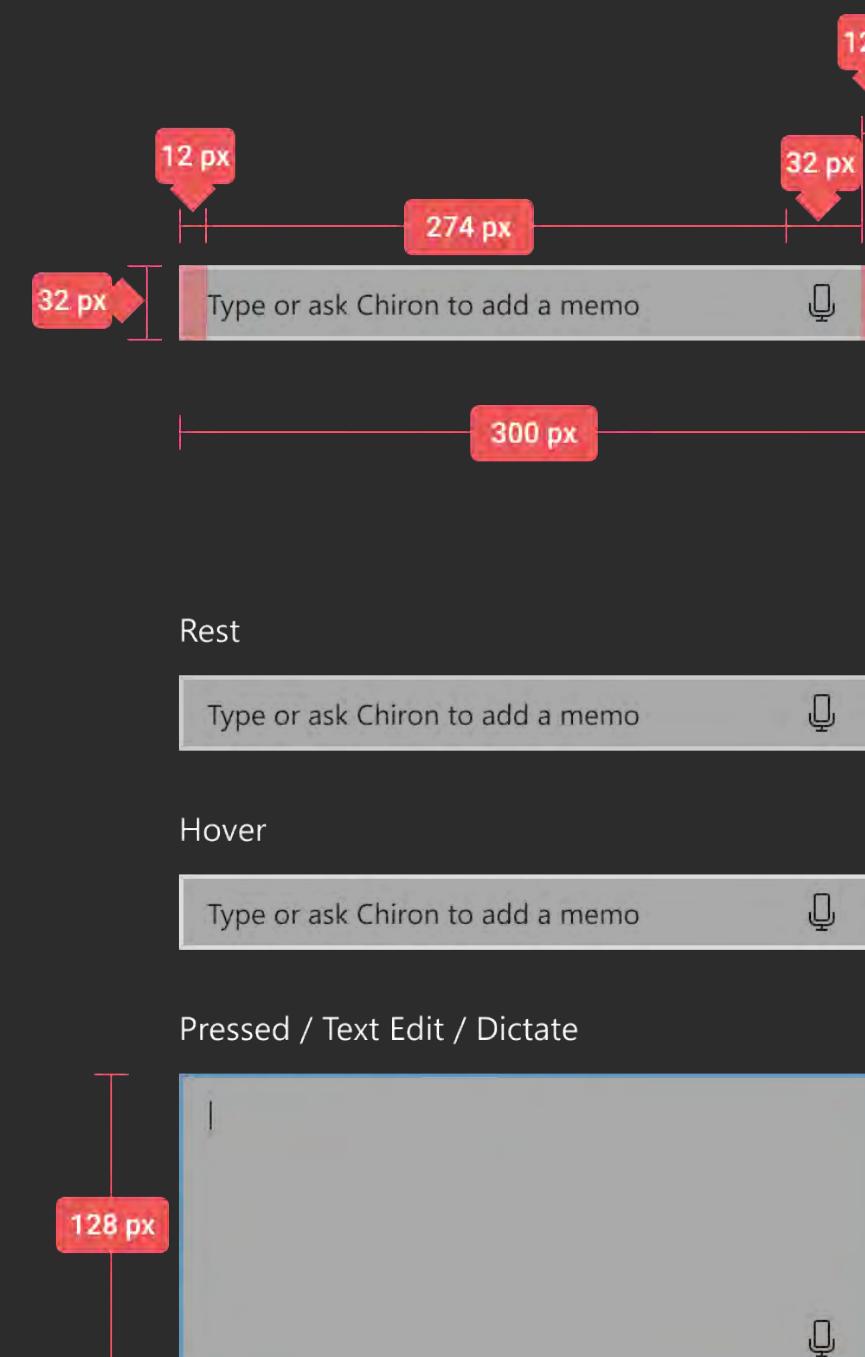
# Visual System

UI Redlines | Activity Panel

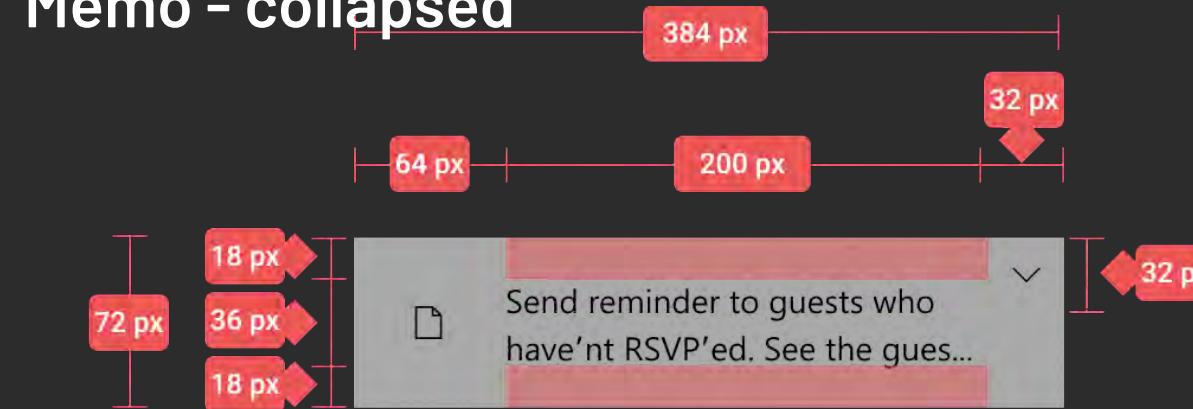
## View switch



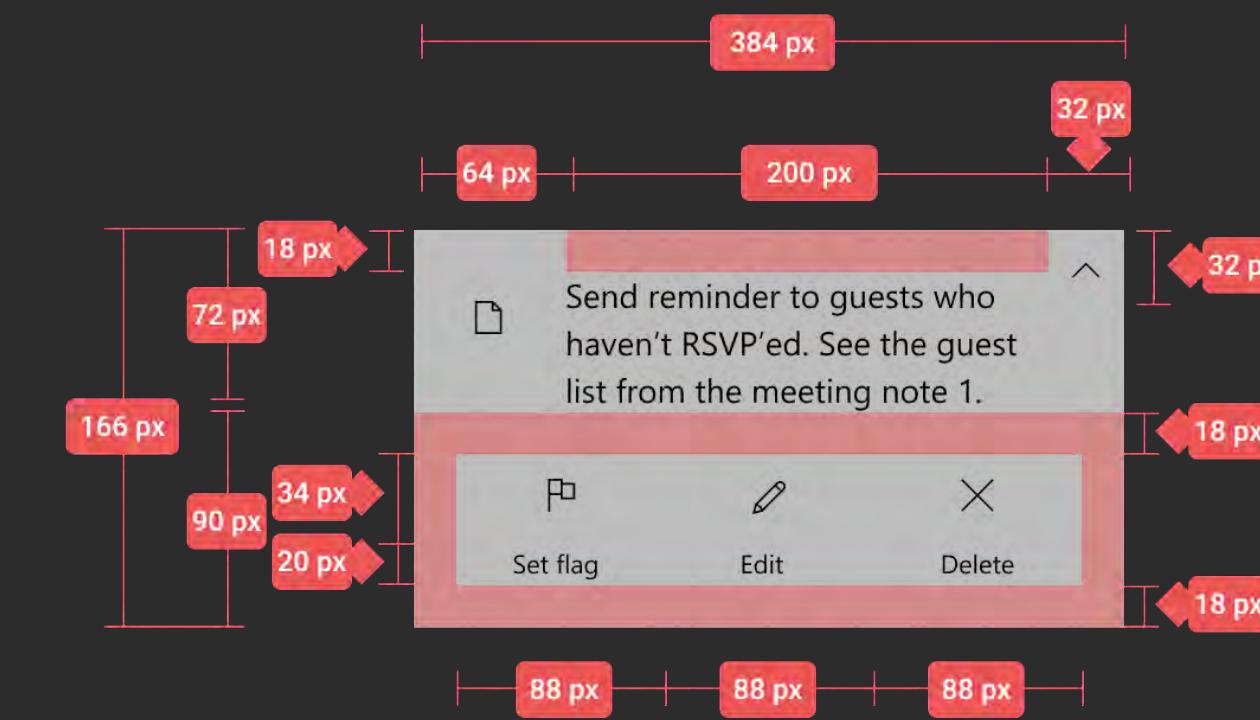
## Create memo



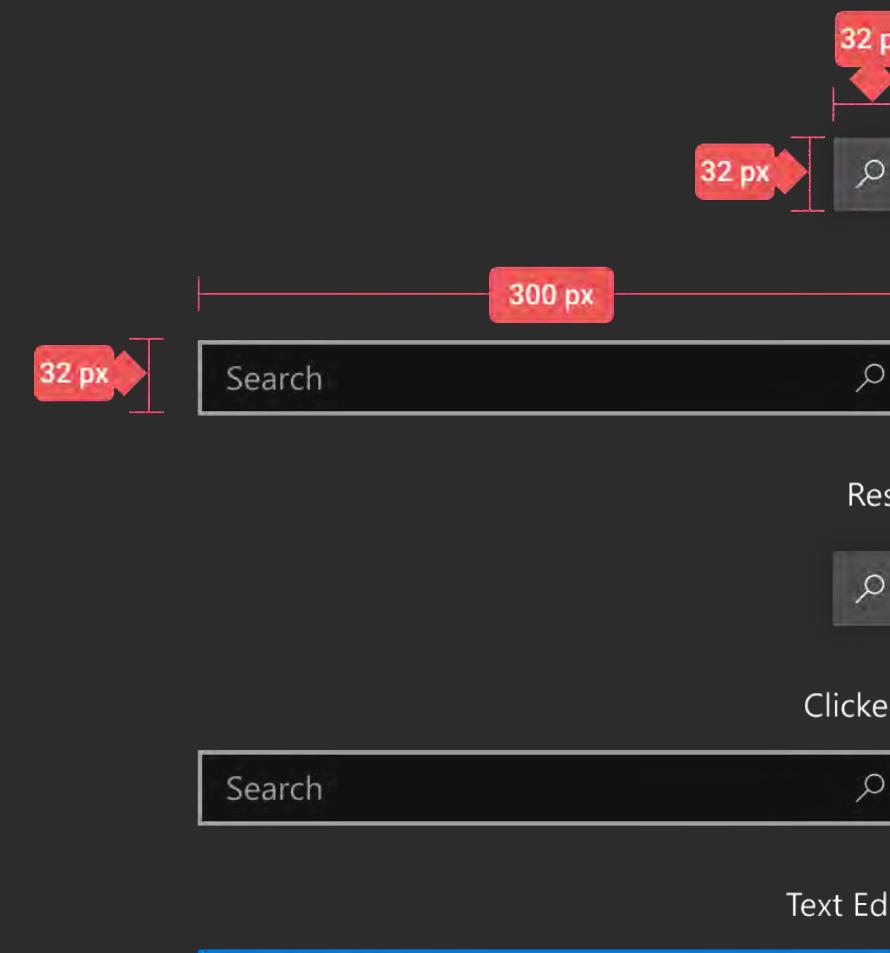
## Memo - collapsed



## Memo - expanded



## Search



# Bibliography

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