Date/Time Picker

Mozilla Firefox
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### DateTime Local
- Basic Working Flow
<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Owners</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>May 05, 2016</td>
<td>Morpheus Chen, Tina Hsieh</td>
<td>Create draft for date/time picker</td>
</tr>
<tr>
<td>0.2</td>
<td>May 10, 2016</td>
<td>Morpheus, Tina</td>
<td>Create prototype A and B to test confirmation mechanism if needed</td>
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<tr>
<td>0.3</td>
<td>May 18, 2016</td>
<td>Morpheus, Tina</td>
<td>Update spec based on first round testing</td>
</tr>
<tr>
<td>0.4</td>
<td>May 25, 2016</td>
<td>Morpheus, Tina</td>
<td>Create basic mechanism for date picker</td>
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<tr>
<td>0.5</td>
<td>June 24, 2016</td>
<td>Morpheus, Tina</td>
<td>Add technical spec criteria, input box and keyboard interaction</td>
</tr>
<tr>
<td>0.8</td>
<td>July 01, 2016</td>
<td>Morpheus, Tina</td>
<td>Finalize Month, Time, Week and Date-Time pickers</td>
</tr>
<tr>
<td>0.9</td>
<td>July 13, 2016</td>
<td>Morpheus, Tina</td>
<td>Update preset Max/min and Step for Month and Time picker</td>
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<tr>
<td>1.0</td>
<td>July 16, 2016</td>
<td>Morpheus, Tina</td>
<td>Update repeatedly scrollers, error message, default format</td>
</tr>
<tr>
<td>1.1</td>
<td>July 20, 2016</td>
<td>Morpheus, Tina</td>
<td>Update Shift+Tab to trigger picker, Esc to dismiss, default date format</td>
</tr>
<tr>
<td>1.2</td>
<td>July 27, 2016</td>
<td>Morpheus, Tina</td>
<td>Update general rules, arrow keys in input box when step sets</td>
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<tr>
<td>1.3</td>
<td>August 17, 2016</td>
<td>Morpheus, Tina</td>
<td>Show highlight status after deleting value in input box</td>
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<tr>
<td>1.4</td>
<td>September 08, 2016</td>
<td>Morpheus, Tina</td>
<td>Update Page UP/Down on month column</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Disable Page up/down and Home/up key when Step sets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Change focus style for keyboard select</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Update general rules for a more clarified description</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Change default date format to ISO 8601 yyyy-MM-dd based on Bug 1069609</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Update MAX/MIN mechanism for input box and picker consistency</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Update STEP mechanism for input box and picker consistency</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Update all strings to reviewed copy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Update the style of hover state on input box to follow Firefox visual guideline and prevent misunderstanding between hover/highlight and selected state</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Make keyboard highlight consistent with cursor highlight to unify the mechanism</td>
</tr>
</tbody>
</table>
## Release Note

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Author</th>
<th>Notes</th>
</tr>
</thead>
</table>
| V 1.5   | October 06, 2016   | Morpheus, Tina       | • Make the mechanism of Page up/down consistent between input box and picker on Month and Time picker  
• Remove ellipsis from “Others...” for localization concerns |
| V 1.51  | November 17, 2016  | Morpheus             | • Error message aligns with the current mechanism in Firefox  
• Provide more details for date picker |
| V 1.52  | January 13, 2017   | Morpheus             | • Simplify the mechanism of month/year menu within date picker  
• List all options and display error message when month/year both selected  
• Only push data to input box until user collapses month/year menu  
• Create spec for edge case of year input |

[Find this icon for updates]
OVERVIEW
Input Types

1. Date
   Define a date control

2. Month
   Define a month and year control

3. Time
   Define a control for entering a time

4. Week
   Define a week and year control

5. DateTime-local
   Define date and time control

Note:
All 5 pickers can be categorized into 3 major modules, including Date, Month, and Time. DateTime-local applies Date and Time module within one inputfield.
**General Rules**

**Set Value but Quit**
- Click to select
- Yankees-04-dd

**Click Outside of the Picker**
- 2016-04-dd

**Collapse and Save**
- 2016-04-dd

**Pickers with Preset Criteria**
- Select values

**Infinite Scroll**
- 02 : 00
- 02 : 20 AM
- 02 : 40 AM

**Limited Scroll**
- 02 : 00
- 02 : 40 AM

**NOTE**

A. Whenever users pick value on pickers, it will reflect on the selected segment in the input box.

B. For Date and Week pickers, users can collapse the month/year menu by clicking the title or finish selecting. Besides, users can click outside of the picker or finish selecting to dismiss the picker.

C. No matter what values users select in the month/year menu in Date and Week picker, the values will be pushed into the input box when users collapse the menu.

D. Whenever users dismiss a picker, only the selected values will be stored in input box in Date and Week picker, but all values will be stored in input box in Month and Time picker.

E. The scroller will be infinite when there are 7 items and above for scrolling.

F. The scroller will be limited when there are 6 items and below for scrolling.
Date
Basic Working Flow

1. Normal state
   - yyyy-mm-dd

2. Click to Trigger Picker
   - yyyy-mm-dd

3. Scroll & Pick Month
   - yyyy-mm-dd

4. Scroll & Pick Year
   - yyyy-mm-dd

5. Month/Year Picked
   - yyyy-mm-dd

6. Pick Date
   - 2006-06-dd

7. Complete
   - 2006-06-24

**Note:**
If the second value is chosen by directly clicking, the dropdown menu will automatically collapse. Otherwise, the dropdown menu won’t collapse until the user clicks outside of the menu or clicks on the title or down arrow.

If the preset values exist, the dropdown menu displays the values as default but without selected state.
Default Input Box

**Normal state**

| yyyy-mm-dd |

**All Picked**

| 2006-06-26 |

**yyyy-mm-dd**

**Hover state**

A. Hover state will highlight the input box whenever user moves cursor on or uses tab to select.

B. Delete button displays when user edits any segment, and it will remove all values in input box.

**Pick Date**

2016-04-25

**Pick Month**

yyyy-04-dd

**Pick Year**

2016-mm-dd

**NOTE**

- Hover state will highlight the input box whenever user moves cursor on or uses tab to select.
- Delete button displays when user edits any segment, and it will remove all values in input box.
**Input Box with Preset Value**

1. Normal state
   - If preset value is 2016-06-01

2. Click to Trigger Picker
   - Input Box with Preset Value

3. Scroll & Pick Month/Year
   - JUNE 2016

4. Month/Year Picked
   - JUNE 2006

5. Pick Date
   - 2006-06-01

6. Complete
   - 2006-06-26

**NOTE**

A. Web author can set a preset value to display in input box.

B. When triggering the picker, the calendar will show the month of the preset date and show selected state as default.
A. Web author can set minimum or/and maximum of dates as a range for user to pick from.

B. The dates which are outside of the preset range will become disabled.

C. The picker will display all months/years as options.

D. User can scroll or use arrow on picker to pick an unavailable month/year.

E. Error message will display when user picks an unavailable combination of month and year. Whenever user clicks in the picker, the error message will be dismissed.

F. User can click on the title to return to date picker or scroll the picker to continue change values.

G. User can only pick available dates within the range.

H. If user dismisses the picker but error state remains, display the error message bubble.
Input Box with Preset Step

1. When Step sets, Page up/down and Home/End key become disabled.
2. When Step and Max/Min set, only show available options which locate on the step and grey out the options outside of Max/Min range.

A. Web author can set to skip amount of dates as step for user to pick from.
B. The dates which don’t locate on the preset step will become disabled. If web author doesn’t set start date, 1970-01-01 will be default start date.
C. User can only pick available dates based on the step. The disabled dates won’t show hover state when mouse over. However, using arrow key or typing in input box can pick an unavailable item. When picking an unavailable item, display error message.
D. The picker will display all months/years as options.
Input Box with Preset List

1. Normal state

2. Click to Trigger Picker

3. Pick Suggestion

4. Pick Another Date

5. Complete

If List sets below items as suggestions:
2016-04-26, 2016-04-27

A Web author can set lists for user to pick as suggestions.

B If user wants to pick a specific date which is not included in web author's suggestions, user can choose “Other…” to trigger the normal date picker.
Arrow keys on Input Box

1. Normal state

2. Trigger Picker

1. When Step sets, up/down key will add/minus the number of step for the selected segment.

2. When Max/Min sets and users use up/down key to select a disabled value, show the calendar but don’t display selected state.

A

B

NOTE

1. Users can use keyboard to change values in input box. Up/down key will add/minus one for the selected segment. Whenever changing the values in input box, the picker below will reflect the values simultaneously.

B

Left/right key will move the highlight state to choose different segment.
Users can use number keys to directly enter a value in input box. If the entered number is impossible to have a second digit within the month, it will be defined as confirmation and move the highlight to the next segment. Ex. it’s impossible to have more than 31 days within a month, so when user types digits more than 3, the highlight will automatically move to the next segment.

If the entered number is possible to have a second digit, it will hold to wait for user to type the second digit.

Whenever detecting the confirmation, the picker below will reflect the values accordingly.

If typing the second digit, it will be defined as confirmation and move the highlight to the next segment.

Once the highlight moves to the last segment, typing new digits will replace the segment from the last digit.
Users can use page up/down keys to change values in input box. Page up/down will go to next/previous 3 months. Whenever changing the value, the picker below will reflect the values accordingly.

Page up/down will go to the next/last week.

Page up/down will add/minus 10 years.
Home/End keys on Input Box

**Change Month**

- Users can use home/end keys to change to the first/last item in input box. Home/end keys will go to the first/last month. Whenever changing the value, the picker below will reflect the values accordingly.

**Change Date**

- If Min: 2006-04-15, Max: 2026-04-15

**Change Year**

- Home/end keys will go to the first/last date in the month displayed.
- Home/end keys will go to the first/last year if there is a preset Min/Max value. If not, home/end keys do nothing.

**NOTE**

- Users can use home/end keys to change to the first/last item in input box. Home/end keys will go to the first/last month. Whenever changing the value, the picker below will reflect the values accordingly.
- Home/end keys will go to the first/last date in the month displayed.
- Home/end keys will go to the first/last year if there is a preset Min/Max value. If not, home/end keys do nothing.

If no Max/Min set, Home/End key no function.
### Arrow Keys on Picker

**1. Highlight Input Box**

- **A**: Users can complete the entire flow by keyboard only, which is designed for visually impaired. User can use Tab or Shift+Tab to switch highlight among website to select input box. When users select the input box by keyboard, the input box will turn to highlight state and select the first segment, but the picker won’t be triggered by default.

**B**: User can use Alt+Down key to trigger the picker.

**C**: When picker triggered by keyboard, the highlight will move to be on the picker, select today as default.

**D**: Up/down key will move the highlight to the previous/next week.

**E**: Left/right key will move the highlight to the previous/next day.

**2. Trigger Picker**

- **A**: Users can complete the entire flow by keyboard only, which is designed for visually impaired. User can use Tab or Shift+Tab to switch highlight among website to select input box. When users select the input box by keyboard, the input box will turn to highlight state and select the first segment, but the picker won’t be triggered by default.

- **B**: User can use Alt+Down key to trigger the picker.

- **C**: When picker triggered by keyboard, the highlight will move to be on the picker, select today as default.

- **D**: Up/down key will move the highlight to the previous/next week.

- **E**: Left/right key will move the highlight to the previous/next day.

- **Space**

- **Complete**

- yyyy-mm-dd

- yyyy-mm-dd
PageUp/Down Keys on Picker

1. Highlight Input Box

- **tab** or **shift + tab**

2. Trigger Picker

**A** PageUp/down key will move the highlight to the previous/next month on the same day.

**B** Shift+PageUp/down key will move the highlight to the previous/next year at the same day.

**NOTE**
Home/End keys on Picker

1. Highlight Input Box

```
yyyy-mm-dd
```

- tab or shift + tab

2. Trigger Picker

```
yyyy-mm-dd
```

- home
- end

**NOTE**

Home/end key will move the highlight to the first/last day of the selected month.
Tab/Space/Enter/Esc keys on Picker

1. Highlight Input Box

- **Tab** or **Shift + Tab**

2. Trigger Picker

- **Alt + ▼**

**Next input box or item on the browser**

**NOTE**

A. **Space/enter key** will confirm the selection and collapse the picker. The highlight will move to the first segment in the input box.

B. **Esc key** will dismiss the picker and cancel all filled segment. The highlight will move to the first segment in the input box.

C. **Tab/shift+tab key** will select the next item on the browser.
Whenever user inputs the input box by typing numbers or arrow keys, browser needs to validate the selection.

If the selection is out of range which web author sets, display the error message.

If user dismisses the picker but error state remains, display the alternative text when hovering on the input box. If user submits the selection but error state remains, displaying error message bubble.

If web authors defines a specific starting value, display the value in error message. For example, choose dates in 5-day increments beginning 2016-04-15.
Localization

Providing various common date formats as options for localization need.

1. Date Formats

- Year/Month/Day
  - yyyy-mm-dd

- Month/Day/Year
  - mm-dd-yyyy

- Day/Month/Year
  - dd-mm-yyyy

2. Separators of Component

- Slash
  - yyyy / mm / dd

- Dots or Full stops
  - yyyy.mm.dd

- Hyphens or Dashes
  - yyyy-mm-dd

- Spaces
  - yyyy mm dd

3. First Day of the Week

- Sunday

- Monday

- Saturday

4. Holidays

- Sunday

- Saturday + Sunday

- Friday
RTL (Right to Left)

Normal state

```
[ ] dd-mm-yyyy
```

Hover state

```
[ ] dd-mm-yyyy
```

All Picked

```
[ ] 26 / 06 / 2006
```

Picker

```
 april 2016

6 5 4 3 2 1 31
13 12 11 10 9 8 7
20 19 18 17 16 15 14
27 26 25 24 23 22 21
4 3 2 1 30 29 28
```
Edge Case

1. yyyy-mm-dd

- yyyy-mm-dd
- 111111-mm-dd
- 275760-mm-dd
- 275760-01-dd

2. mm-dd-yyyy

- mm-dd-yyyy
- mm-dd-111111
- mm-dd-275760
- mm-dd-0001
Basic Working Flow

1. Normal state

2. Click to Trigger Picker

3. Scroll & Pick Month

4. Scroll & Pick Year

5. Complete

A Default input field displays yyyy-mm, but vary based on locale.

B Up/down arrows can help user move to the next/last month/year per click. Click and hold can keep scrolling.

C User can click and drag to scroll up/down. When selecting, showing selected state.

D User can pick month first then year, vice versa. Whenever user picks month/year, the highlight in input box will move to picked segment and change value simultaneously.

E Whenever user finishes selecting or tap outside of the picker, month/year picker collapses and save the value to input box. The highlight state will stay on the last picked value.
Default Input Box

Normal state

Hover state

All Picked

Pick Month

Pick Year

NOTE

A Hover state will highlight the input box whenever user moves cursor on or uses tab to select.

B Delete button displays when user edits any segment, and it will
Web author can set a preset value to display in input box.

When triggering the picker, the picker will show the preset month and year as default selected item.
Input Box with Preset Max/Min Value

1. Normal state

If Min: 2016-01
Max: 2017-01

2. Click to Trigger Picker

3. Scroll & Pick Month

4. Scroll & Pick Year

5. Complete

NOTE
A. Web author can set minimum and maximum of month/year as a range for user to pick from.
B. The picker will display all months as options but only show available years for users as default. Whenever users pick month/year, the other column will disable unavailable options accordingly.
C. User can scroll or use arrow to pick an unavailable month/year. Using arrow key or typing in input box can also pick an unavailable item.
D. Error message will display when user pick an unavailable month/year. Whenever user clicks in the picker, the error message will be dismissed.
E. If user dismisses the picker but error state remains, display the error message bubble.
### Input Box with Preset Step

1. **Normal state**

2. **Click to Trigger Picker**

3. **Scroll & Pick Month**

4. **Scroll & Pick Year**

5. **Complete**

#### NOTE

1. When Step sets, Page up/down and Home/End key become disabled.

2. When Step and Max/Min set, only show available options which locate on the step and grey out the options outside of Max/Min range.

3. If web author sets Max/Min and Step is not factor or multiple of 12, display options in one column.

A. Web author can set to skip amount of months as step for user to pick from.

B. The step which is factor or multiple of 12 will only display the available months as options. Factors and multiples include 1, 2, 3, 4, 6, 12 and 12xN.

C. The step which is not factor or multiple of 12 will combine month and year as one column. All numbers are not included in factors and multiples will be combined into one column.

D. Using arrow key or typing in input box can pick an unavailable item. When picking an unavailable item, display error message and remove the previous selected state.

If Step is factor or multiple of 12
Ex. Step sets 3 months

If Step is not factor or multiple of 12
Ex. Step sets 5 months
Input Box with Preset List

1. Normal state

2. Click to Trigger Picker

3. Pick Suggestion

4. Pick Another Time

5. Complete

**NOTE**

A. Web author can set lists for user to pick as suggestions.

B. If user wants to pick a specific month which is not included in web author’s suggestions, user can choose “Other” to trigger the normal month picker.

If List sets below items as suggestions:
2016-04, 2016-06
Users can use keyboard to change values in input box. Up/down key will add/minus one for the selected segment. Whenever changing the values in input box, the picker below will reflect the values simultaneously.

1. When Step sets, up/down key will add/minus the number of step for the selected segment.

2. When Max/Min sets and users use up/down key to select an disabled value, show the item but don’t display selected state.

Users can use keyboard to change values in input box. Up/down key will add/minus one for the selected segment. Whenever changing the values in input box, the picker below will reflect the values simultaneously.

Left/right key will move the highlight state to choose different segment.
Users can use number keys to directly enter a value in input box values in input box. If the entered number is impossible to have a second digit, it will be defined as confirmation and move the highlight to the next segment. Ex. it’s impossible to have more than 12 months within a year, so when user types digits more than 1, the highlight will automatically move to the next segment.

If the entered number is possible to have a second digit, it will hold to wait for user to type the second digit.

Whenever detecting the confirmation, the picker below will reflect the values accordingly.

If typing the second digit, it will be defined as confirmation and move the highlight to the next segment.

Once the highlight moves to the last segment, typing new digits will replace the segment from the last digit.
Users can use page up/down keys to change values in input box. Page up/down will go to next/previous 3 month. Whenever changing the value, the picker below will reflect the values simultaneously.

Page up/down will add/minus 10 years.
Home/End keys on Input Box

A Users can use home/end keys to change to the first/last item in input box. Home/end keys will go to the first/last month. Whenever changing the value, the picker below will reflect the values simultaneously.

B Home/end keys will go to the first/last year if there is a preset Min/Max value. If not, home/end keys do nothing.

NOTE

If Min: 2006-04, Max: 2026-04

If no Max/Min set, Home/End key no function
Users can complete the entire flow by keyboard only, which is designed for visually impaired. User can use Tab or Shift+Tab to switch highlight among website to select input box. When user select the input box by keyboard, the input box will turn highlight state and select the first segment, but the picker won’t be triggered by default.

User can use Alt+Down key to trigger the picker.

When picker triggered by keyboard, the highlight will move to be on the picker, select this month as default.

Up/down key will move the highlight to the previous/next month on month column.

Left/right key will switch the highlight between the month and year columns. User can use Enter or Space key to confirm the selection.

Up/down key will move the highlight to the previous/next year on the year column.
**PageUp/Down Keys on Picker**

**A** The mechanism is the same as input box. PageUp/down key will move the highlight to the next/previous 3 month on month column.

**B** The mechanism is the same as input box. PageUp/down key will move the highlight to 10 years later/ago on year column.
**Home/End keys on Picker**

- **tab**
- **shift + tab**

**Highlight Input Box**

- **yyyy-mm**

**NOTE**

A. Home/end key will move the highlight to the first/last month on month column. Whenever the highlight moves, the input box will change the value accordingly.

B. Home/end key will move the highlight to the first/last year on year column if the author creates Max/Min value. If not, home/end key do nothing.

- If Min: 2006-04, Max: 2026-04
- If no Max/Min set, Home/End key no function
Tab/Sace/Enter/Esc keys on Picker

1. Highlight Input Box

2. Trigger Picker

Next input box or item on the browser

A. Space/enter key will confirm the selection and collapse the picker. The highlight will move to the first segment in the input box.

B. Esc key will dismiss the picker and save filled segment. The highlight will move to the first segment in the input box.

C. Tab/shift+tab key will select the next item on the browser.
If web authors defines a specific starting value, display the value in error message. For example, choose months in 2-month increments beginning 2016-04.

Whenever user inputs the input box by typing numbers or arrow keys, browser needs to validate the selection.

If the selection is out of range which web author sets, display the error message.

If user dismisses the picker but error state remains, display the alternative text when hovering on the input box. If user submits the selection but error state remains, displaying error message bubble.

If web authors defines a specific starting value, display the value in error message. For example, choose months in 2-month increments beginning 2016-04.
# Localization

Providing various common date formats as options for localization need.

## 1. Formats

<table>
<thead>
<tr>
<th>Year-Month</th>
<th>Month-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>yyyy-mm</td>
<td>mm-yyyy</td>
</tr>
</tbody>
</table>

### 3-letters abbreviation

| yyyy-mmm         | 2016-Apr         |

### Month spell out in full

| yyyy-mmmm        | 2016-April       |

## 2. Separators of Component

### Slash

| yyyy / mm        | yyyy.mm          |

### Dots or Full stops

| yyyy.mm          | yyyy mm          |

### Hyphens or Dashes

| yyyy-mm          | yyyy-mm          |
**RTL (Right to Left)**

**Normal state**

<table>
<thead>
<tr>
<th>mm-yyyy</th>
</tr>
</thead>
</table>

**Hover state**

<table>
<thead>
<tr>
<th>mm-yyyy</th>
</tr>
</thead>
</table>

**All Picked**

| ♦ | 06-2016 |

**Picker**

| mm-yyyy |

- 2013
- يناير
- 2014
- فبراير
- 2015
- مارس
- 2016
- أبريل
- 2017
- مايو
- 2018
- يونيو
- 2019
- يوليو
Time
Basic Working Flow

1. Normal state

2. Click to Trigger Picker

3. Scroll & Pick Hour

4. Scroll & Pick Min

5. Scroll & Pick AM/PM

6. Complete

A. Default input field displays - - : - - - -, but vary based on locale.
B. Up/down arrows can help user move to the next/last hour/minute per click. Click and hold can keep scrolling.
C. User can click and drag to scroll up/down. When selecting, showing selected state.
D. User can pick 3 columns in any order. Whenever user picks hour/minute/AMPM, the highlight in input box will move to picked segment and change value simultaneously.
E. Whenever user finishes selecting or tap outside of the picker, time picker collapses and save the value to input box. The highlight state will stay on the last picked value.
Default Input Box

Normal state

Hover state

All Picked

Pick Hour

Pick Min

Pick AM/PM

NOTE

A Hover state will highlight the input box whenever user moves cursor on or uses tab to select.

B Delete button displays when user edits any segment, and it will
Input Box with Preset Value

1. Normal state

2. Click to Trigger Picker

3. Scroll & Pick Hour

4. Scroll & Pick Min

5. Scroll & Pick AM/PM

6. Complete

A Web author can set a preset value to display in input box.

B When triggering the picker, the picker will show the preset time as default selected item.
Web author can set minimum and maximum of time as a range for user to pick from.

The picker will display all hours, minutes and AM/PM as options. Whenever users pick hour/AMPM, the other column will disable unavailable options accordingly.

User can scroll or use arrow to pick an unavailable month/year. Using arrow key or typing in input box can also pick an unavailable item.

If user picks hour or AM/PM and browser detects the selection is out of range, error message displays to inform users.

If user dismisses the picker but error state remains, display the error message bubble.

Whenever user finishes the entire selection or clicks outside of the picker, the picker will be dismissed and save the values to
1. When Step sets, Page up/down and Home/End key become disabled.

2. When Step and Max/Min set, only show available options which locate on the step and grey out the options outside of Max/Min range.

3. If web author sets Max/Min and Step is not factor or multiple of 60, display options in one column.

Using arrow key or typing in input box can pick an unavailable item. When picking an unavailable item, display error message and remove the previous selected state.

A. Web author can set to skip amount of minutes as step for user to pick from.

B. The step which is factor or multiple of 60 will only display the available minute as options. Factors and multiples include 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, and 20xN.

C. The step which is not factor or multiple of 60 will combine hour, minutes and AM/PM as one column. All numbers are not included in factors and multiples will be combined into one column.

D. Using arrow key or typing in input box can pick an unavailable item. When picking an unavailable item, display error message and remove the previous selected state.
Web author can set lists for user to pick as suggestions.

If user wants to pick a specific time which is not included in web author's suggestions, user can choose “Other” to trigger the normal time picker.

If List sets below items as suggestions:
10:18 AM, 11:15 AM

1. Normal state
2. Click to Trigger Picker
3. Pick Suggestion
4. Pick Another Time
5. Complete

A

B

NOTE
Users can use keyboard to change values in input box. Up/down key will add/minus one for the selected segment. Whenever changing the values in input box, the picker below will reflect the values simultaneously.

A. Users can use keyboard to change values in input box. Up/down key will add/minus one for the selected segment. Whenever changing the values in input box, the picker below will reflect the values simultaneously.

B. Left/right key will move the highlight state to choose different segment.

C. Up/down key will switch between AM/PM.

NOTE

1. When Step sets, up/down key will add/minus the number of step for the selected segment.

2. When Max/Min sets and users use up/down key to select an disabled value, show the item but don’t display selected state.
Number keys on Input Box

Normal State

Users can use number keys to directly enter a value in input box values in input box. If the entered number is impossible to have a second digit, it will be defined as confirmation and move the highlight to the next segment. Ex. it’s impossible to have more than 12 hours within a day, so when user types digits more than 1, the highlight will automatically move to the next segment.

If the entered number is possible to have a second digit, it will hold to wait for user to type the second digit.

Whenever detecting the confirmation, the picker below will reflect the values accordingly.

If typing the second digit, it will be defined as confirmation and move the highlight to the next segment.

Once the highlight moves to the last segment, typing new digits will replace the segment from the last digit.

NOTE

A

B

C

D

E

or
Users can use page up/down keys to change values in input box. Page up/down will go to next/previous 3 hours. Whenever changing the value, the picker below will reflect the values simultaneously.

Page up/down will add/minus 10 minutes.

Page up/down will switch between AM/PM.
Users can use home/end keys to change to the first/last item in input box. Home/end keys will go to the first/last year. Whenever changing the value, the picker below will reflect the values simultaneously.

A Home/end keys will go to the first/last minute.

B Home/end keys will do nothing.

C Home/end keys will do nothing.
Users can complete the entire flow by keyboard only, which is designed for visually impaired. User can use Tab or Shift+Tab to switch highlight among website to select input box. When user select the input box by keyboard, the input box will turn highlight state and select the first segment, but the picker won’t be triggered by default.

User can use Alt+Down key to trigger the picker.

When picker triggered by keyboard, the highlight will move to be on the picker, select this month as default.

Up/down key will move the highlight to the next/previous hour on hour column.

Left/right key will switch the highlight between the hour, minute and AM/PM columns. User can use Enter or Space key to confirm the selection.

Up/down key will move the highlight to the next/previous minute on the minute column.

Up/down key will switch between AM/PM.
The mechanism is the same as input box. PageUp/down key will move the highlight to the next/previous 3 hour on hour column.

The mechanism is the same as input box. PageUp/down key will move the highlight to 10 minutes later/ago on minute column.

Up/down key will switch between AM/PM.
Home/End keys on Picker

Home/End key will move the highlight to the first/last hour on hour column.

Home/End key will move the highlight to the first/last minute on minute column.

Home/End key will work no function on AM/PM column.

**NOTE**

- Home/End key will move the highlight to the first/last hour on hour column.
- Home/End key will move the highlight to the first/last minute on minute column.
- Home/End key will work no function on AM/PM column.
Tab/Space/Enter/Esc keys on Picker

1. Highlight Input Box

- Tab or Shift + Tab
- Alt + ▼

2. Trigger Picker

A. Space/Enter key will confirm the selection and collapse the picker. The highlight will move to the first segment in the input box.

B. Esc key will dismiss the picker and save filled segment. The highlight will move to the first segment in the input box.

C. Tab/Shift+Tab key will select the next item on the browser.
**Error Message**

1. **Normal State**
   - If Min: 08:10 AM
   - Max: 06:30 PM

2. **Error Message**
   - Choose a time between 08:10 AM and 06:30 PM.
   - Submit

3. **Error Message Bubble**
   - Choose a time between 08:10 AM and 06:30 PM.

**NOTE**

A. Whenever user inputs the input box by typing numbers or arrow keys, browser needs to validate the selection.

B. If the selection is out of range which web author sets, display the error message.

C. If user dismisses the picker but error state remains, display the alternative text when hovering on the input box. If user submits the selection but error state remains, displaying error message bubble.

D. If web authors defines a specific starting value, display the value in error message. For example, choose months in 30-minute increments starting at 10:18 AM.
Localization

Providing various common date formats as options for localization need.

1. Time Formats

12-hour clock

```
-- : -- --
ex. 10:18 PM
```

12-hour clock (using Chinese)

```
-- : -- : --
ex. 上午10:18
```

24-hour clock

```
-- : --
ex. 22:18
```

Seconds

```
-- : -- : -- --
ex. 10:18:30 PM
```

Milliseconds

```
-- : -- : -- : -- --
ex. 10:18:30.235 PM
```

2. Separators of Component

Colon

```
-- : -- --
```

Dots

```
-- . -- --
```
RTL (Right to Left)

Normal state

All Picked

Hover state

Picker
Week
Basic Working Flow

1. Normal state

2. Click to Trigger Picker

3. Scroll & Pick Month

4. Pick Week

5. Month/Year Picked

6. Pick Week

7. Complete

NOTE

A Default input field displays Week -- -, yyyy, but vary based on locale.

B Forward/Back can help user move to the next/last month. This won’t send value to input box.

C When highlighting, showing hover state on the whole week. Click to expand month/year picker for user to choose value.

D Display first 3 alphabets as day of the week. Applying red color to visually differentiate holidays, which is based on locales.

E Indicator for this week.

F Applying transparent to visually differentiate dates between picked month and next/last month.

G Whenever user picks month/year, the highlight in input box will move to picked segment and change value simultaneously.

H Picked item needs selected state to indicate user.

I Whenever user finishes selecting or tap on the title, month/year picker collapses and go back to date picker.

J Indicator for hover state.
Default Input Box

Normal state

Pick Week

Hover state

Pick Month

Pick Year

NOTE

A Hover state will highlight the input box whenever user moves cursor on or uses tab to select.

B Delete button displays when user edits any segment, and it will
Input Box with Preset Value

1. Normal state
   - Week 17, 2016

2. Click to Trigger Picker
   - Week 17, 2016

If preset value is Week 17, 2016

3. Scroll & Pick Month
   - April 2016

4. Input Box with Preset Value
   - Week 17, 2016

5. Month/Year Picked
   - April 2016

6. Pick Date
   - Week 17, 2006

7. Complete
   - Week 25, 2006

NOTE

A. Web author can set a preset value to display in input box.

B. When triggering the picker, the calendar will show the month of the preset week and show selected state as default.
Web author can set minimum and maximum of week as a range for user to pick from.

The weeks which are outside of the preset range will become disabled.

The picker will display all months and year as options.

User can scroll or use arrow to pick an unavailable month/year. Using arrow key or typing in input box can also pick an unavailable item. If user picks month/year and browser detects the selection is out of range, error message displays to inform users.

If user dismisses the picker but error state remains, display the error message bubble.

Error message will display when user pick an unavailable combination of month and year. Whenever user clicks in the picker, the error message will be dismissed.
Input Box with Preset Step

1. Normal state
   Week ☐, yyyy

If Step sets 2 Weeks

2. Click to Trigger Picker
   Week ☐, yyyy ☑

3. Scroll & Pick Month
   Week ☐, yyyy ☑

4. Pick Date
   Week ☐, 2016 ☑

5. Month/Year Picked
   Week ☐, 2016 ☑

6. Complete
   Week 25, 2016 ☑

### NOTE

1. When Step sets, Page up/down and Home/End key become disabled.

2. When Step and Max/Min set, only show available options which locate on the step and grey out the options outside of Max/Min range.

A. Web author can set to skip amount of weeks as step for user to pick from.

B. The weeks which are outside of the preset step will become disabled. If web author doesn’t set start week, the week with today becomes default start week.

C. User can only pick available weeks based on the step. The disabled weeks won’t show hover state when mouse over.

D. Using arrow key or typing in input box can pick an unavailable item. When picking an unavailable item, display error message and remove the previous selected state.
**Input Box with Preset List**

1. **Normal state**
   
   Week --, yyyy

2. **Click to Trigger Picker**
   
   Week --, yyyy

   - Week 15, 2016
   - Week 20, 2016
   - Other

3. **Pick Suggestion**
   
   Week 15, 2016

4. **Pick Another Date**
   
   Week --, yyyy

5. **Complete**
   
   Week 16, 2016

**NOTE**

A. Web author can set lists for user to pick as suggestions.

B. If user wants to pick a specific week which is not included in web author’s suggestions, user can choose “Other” to trigger the normal week picker.
Users can use keyboard to change values in input box. Up/down key will add/minus one for the selected segment. Whenever changing the values in input box, the picker below will reflect the values simultaneously.

Left/right key will move the highlight state to choose different segment.

NOTE

1. When Step sets, up/down key will add/minus the number of step for the selected segment.

2. When Max/Min sets and users use up/down key to select an disabled value, show the item but don’t display selected state.
Users can use number keys to directly enter a value in input box. If the entered number is impossible to have a second digit, it will be defined as confirmation and move the highlight to the next segment. Ex. it’s impossible to have more than 52 weeks within a year, so when user types digits more than 5, the highlight will automatically move to the next segment.

If the entered number is possible to have a second digit, it will hold to wait for user to type the second digit.

Whenever detecting the confirmation, the picker below will reflect the values accordingly.

If typing the second digit, it will be defined as confirmation and move the highlight to the next segment.

Once the highlight moves to the last segment, typing new digits will replace the segment from the last digit.
PageUp/Down keys on Input Box

**A** Users can use page up/down keys to change values in input box. Page up/down will go to next/previous 3 month. Whenever changing the value, the picker below will reflect the values simultaneously.

**B** Page up/down will add/minus 10 years.
Users can use home/end keys to change to the first/last item in input box. Home/end keys will go to the first/last week. Whenever changing the value, the picker below will reflect the values simultaneously.

**NOTE**

A. Users can use home/end keys to change to the first/last item in input box. Home/end keys will go to the first/last week. Whenever changing the value, the picker below will reflect the values simultaneously.

B. Home/end keys will go to the first/last year if there is a preset Min/Max value. If not, home/end keys do nothing.

If Min: Week 10, 2006, Max: Week 20, 2026

If no Max/Min set, Home/End key no function
Arrow Keys on Picker

1. Highlight Input Box

Week --, yyyy

A
B
C
D
E

Complete

Week 16, 2016

space or 

NOTE

A

Users can complete the entire flow by keyboard only, which is designed for visually impaired. Users can use Tab or Shift+Tab to switch highlight among websites to select input box. When user selects the input box by keyboard, the input box will turn highlight state and select the first segment, but the picker won’t be triggered by default.

B

User can use Alt+Down key to trigger the picker.

C

When picker triggered by keyboard, the highlight will move to be on the picker, select today as default.

D

Up/down key will move the highlight to the previous/next week.

E

Left/right key will move to the previous/next month.
PageUp/Down Keys on Picker

1. Highlight Input Box
   - Week --, yyyy

2. Page up/down key will move the highlight to the previous/next month at the same week.

A. Shift+PageUp/down key will move the highlight to the previous/next year at the same week.

NOTE

- PageUp/down key will move the highlight to the previous/next month at the same week.
- Shift+PageUp/down key will move the highlight to the previous/next year at the same week.
Home/End keys on Picker

1. Highlit Input Box

Week --, yyyy

A NOTE

Home/end key will move the highlight to the first/last week of the selected month.
Tab/Space/Enter/Esc keys on Picker

1. Highlight Input Box
   - Tab or shift + tab

2. Trigger Picker
   - Tab/shift+tab key will select the next item on the browser.
   - Esc key will dismiss the picker and save filled segment. The highlight will move to the first segment in the input box.
   - Space/enter key will confirm the selection and collapse the picker. The highlight will move to the first segment in the input box.
Error Message

1. Normal State
   Week -- yyyy
   3 1
   2 0 1 6

If Min: Week 15, 2016
Max: Week 30, 2016

2. Error Message
   Week 31, 2016

Please select a valid value. The nearest valid value is Week 30, 2016.

3. Error Message Bubble
   Choose a week between Week 15, 2016 and Week 30, 2016.

NOTE

A. Whenever user inputs the input box by typing numbers or arrow keys, browser needs to validate the selection.

B. If the selection is out of range which web author sets, display the error message.

C. If user dismisses the picker but error state remains, display the alternative text when hovering on the input box. If user submits the selection but error state remains, displaying error message bubble.

D. If web authors defines a specific starting value, display the value in error message. For example, choose months in 2-week increments beginning 2016-04.
Localization

Providing various common date formats as options for localization need.

1. Week Formats

<table>
<thead>
<tr>
<th>Week, Year</th>
<th>Year, Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week -- , yyyy</td>
<td>yyyy, Week --</td>
</tr>
</tbody>
</table>

2. First Day of the Week

- **Sunday**
- **Monday**
- **Saturday**
RTL (Right to Left)

Normal state

All Picked

Hover state

Picker
DateTime-Local
Basic Working Flow

1. Normal state

2. Click to Trigger Picker

3. Scroll & Pick Time

7. Complete

NOTE

A. Default input field displays yyyy-mm-dd, -- : -- --, and vary according to date and time picker.

B. Follow the mechanism of date picker.

C. Follow the mechanism of time picker.

D. Whenever user finishes date picker, it will automatically trigger time picker for user, and vice versa.

E. Whenever user finishes selecting or tap outside of the picker, time picker collapses and save the value to input box. The highlight state will stay on the last picked value.