

Interaction Programming: Practical Exam

Winter term 2016/2017

During this exam, you'll create a "Lufthansa" app prototype.

Begin **16:15h.** Begin with a blank HTML document.

End **18:30h.** Upload your zipped solution (including all local resources) to Moodle at the end of the session:

<https://www.moodle.tum.de/mod/assign/view.php?id=497875>

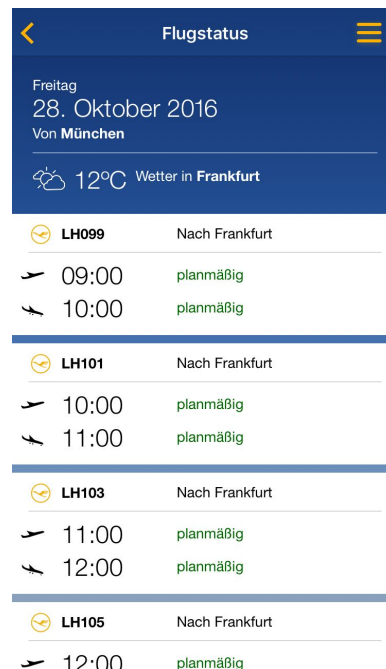
Total Points **116 P** (+34 bonus points from peer assessments and questionnaires)

Please, style the layout of your prototype corresponding to the sample below:



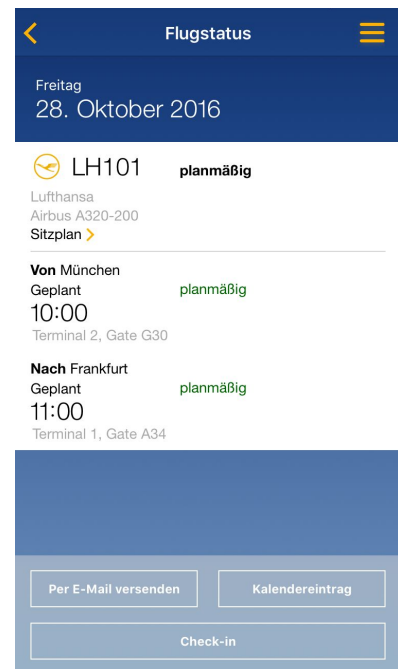
The 'Search view' screenshot shows a mobile app interface with a dark blue header 'Flugstatus' and a hamburger menu icon. Below the header are three tabs: 'Flugnr.', 'Route', and 'Flughafen'. The 'Route' tab is selected. The main content area has a light blue background and contains the following fields: 'Von' with 'München' and a right arrow, 'Nach' with 'Erforderlich' and a right arrow, 'Datum' with '26.10.2016', and 'Uhrzeit' with '15:00'. At the bottom is a dark blue button labeled 'Suchen'.

Search
view



The 'Results view' screenshot shows a mobile app interface with a dark blue header 'Flugstatus' and a hamburger menu icon. Below the header, it displays the date 'Freitag 28. Oktober 2016' and 'Von München'. A weather widget shows a cloud icon, '12°C', and 'Wetter in Frankfurt'. Below this is a list of flights, each with a Lufthansa logo, flight number, destination, and status. The flights are: LH099 (09:00, planmäßig), LH101 (10:00, planmäßig), LH103 (11:00, planmäßig), and LH105 (12:00, planmäßig). Each flight entry has a right arrow next to the status.

Results
view



The 'Details view' screenshot shows a mobile app interface with a dark blue header 'Flugstatus' and a hamburger menu icon. Below the header, it displays the date 'Freitag 28. Oktober 2016'. The main content area has a light blue background and contains the following information: 'LH101' with 'planmäßig' status, 'Lufthansa' logo, 'Airbus A320-200', and 'Sitzplan' link. Below this is a section for 'Von München' with 'Geplant 10:00' and 'Terminal 2, Gate G30'. Below that is a section for 'Nach Frankfurt' with 'Geplant 11:00' and 'Terminal 1, Gate A34'. At the bottom are two buttons: 'Per E-Mail versenden' and 'Kalendereintrag', and a 'Check-in' button.

Details
view

*Be aware that your app will **not** reach the shown maturity. The screenshots provided simply serve as an **orientation** for how the app should be composed. You can implement your app with **german** or **english** text.*

Grading

We will grade

- **Structure**
HTML elements, their hierarchy, and organisation of code
- **Alignment**
CSS layout and position of elements
- **Appearance**
CSS style of elements
- **Behavior**
application dynamics, e.g., interaction between views, click events, etc.
- **Model**
adequate data structure in JavaScript

For each **component** in the app (e.g., views, title bars, buttons, details, ...) you need to fulfill the criteria as detailed in the following.

Criteria

You can reach the points given in [] brackets. The points for the lettered subtasks (i.e., a, b, ...) are awarded in a binary fashion; if you are successful, you will earn the full points, if the criterion is not fulfilled, you will receive no points. This exam is held open book and open internet. You may use anything you find in the world wide web.

It is prohibited to use any messaging/communication services. Every student has to submit his or her own work and will have to assure that before the upload. A violation of this agreement will result in failing the exam.

*Always **read through all criteria of an component before starting to implement**, because they are interdependent.*

App	6
1 Structure	6
a) Your app consists of <i>one single</i> html document	[1]
b) Your app passes the https://validator.w3.org/ <i>without errors or warnings</i>	[5]
Title Bar	14
2 Structure	4
a) Icons “back” and “menu” are available	[3]
b) Title text contains “Flugstatus” / “flight status”	[1]
3 Alignment	2
a) Always top, even while scrolling the app	[2]
4 Appearance	8
a) Text appears horizontally centered	[1]
b) Text appears vertically centered	[2]
c) Text is white and bold	[1]
d) Icons are orange	[3]
e) background is blue	[1]
Views	18
5 Structure	6
a) Search view is present	[1]
b) Results view is present	[1]
c) Details view is present	[1]
d) Title bar is visible in each view	[3]
6 Alignment	4
a) All three views are full-screen	[1]
b) Content scrolls below the title bar	[3]
7 Appearance	3
a) Background has a light blue (bottom) to dark blue (top) gradient	[3]
8 Behavior	5
a) Clicking the “chevron” (arrow) in title bar shows the previous view: <i>details view</i> → <i>results view</i> and <i>results view</i> → <i>search view</i>	[3]
b) <i>Search view</i> loads <i>results view</i> via “Suchen” / “search” button	[1]
c) <i>Results view</i> loads <i>details view</i> by clicking on a flight	[1]

Search	29
9 Structure	6
a) Four text inputs for departure, destination, date, and time	[2]
b) Placeholder text “Erforderlich” / “required” for departure and destination	[1]
c) Prefilled date “28.10.2016” and time “15:00”	
d) Four labels “Von” / “from”, “Nach” / “to”, “Datum” / “date”, “Uhrzeit” / “time”, next to the input fields	[1]
e) Two chevrons (arrows) next to the departure/destination input fields	[1]
f) “Suchen” / “Search” button with text below the input fields	[1]
10 Alignment	7
a) Labels (“Von” / “from”, etc.) appear left in each of the four rows containing the text inputs	[1]
b) Text inputs (“München” / “Munich”, etc.) all have the same indentation (no matter how wide the label is)	[2]
c) Chevrons appear right	[1]
d) Text inputs take the whole remaining row width (minus labels and chevrons), even if the browser is resized.	[3]
11 Appearance	6
a) Rows (containing label, input, and chevron) are white, but transparent	[1]
b) Labels are light gray	[1]
c) Input text and chevrons are white	[1]
d) Input fields have no borders	[1]
e) “Suchen” / “Search” button is blue with white text, without border, and rectangular	[2]
12 Behavior	6
a) “Search” button is disabled as long as search input fields are empty	[4]
b) Clicking “search” also sets the date at the top of the results view	[2]
13 Model	4
a) From the (localized) text input in the search view, e.g., “28.10.2016”, the localized (english or german) <ul style="list-style-type: none"> ■ weekday, e.g., “Freitag” / “friday” and ■ the month’s name, e.g., “Oktober” / “october” are calculated and used for setting the date in the results view (e.g., “Freitag” and “28. Oktober 2016”)	[4]

Results	25
14 Structure	2
a) Elements for date and weather are present	[1]
b) Containers for different flights. <i>You may omit the images.</i>	[1]
15 Alignment	5
a) Flights are separated by small spaces	[1]
b) The list of flights is long (> 20) and continues beyond the page to demonstrate scrolling (<i>they may repeat after 5 different items</i>)	[2]
c) Each flight consists of the columns and rows as shown in the screenshot (<i>you may still omit the images</i>).	[2]
16 Appearance	5
a) All flights have a white background	[1]
b) Flight numbers are the only bold text in the flight containers	[1]
b) All departure/arrival times are shown in twice the neighboring text's size	[1]
c) There is a horizontal line in each flight container, which is <i>not full width</i>	[2]
17 Model	9
a) A flight and all its (visible) properties are treated as an object	[2]
b) All flights are stored in <i>one</i> adequate data structure (<i>they may still repeat after 5 different items</i>)	[3]
c) Flights displayed in the <i>results</i> view are loaded from that data structure	[4]
18 Behavior	4
a) Origin and <i>all destinations</i> change depending on the input in the <i>search</i> view	[4]

Details		24
17 Structure		5
a) Element for the date is available	[1]	
a) Selected flight details are grouped in a container	[2]	
b) The buttons exist and are grouped ("Per E-Mail versenden" / "share via mail", ...)	[2]	
18 Alignment		5
a) Button group is at the bottom of the view (also when the browser resizes)	[1]	
b) Two-column layout of the "E-Mail" / "mail" and "Kalender" / "calendar" buttons	[1]	
c) Full width of the "Check-in" button	[1]	
d) Buttons grow proportionally (when the browser resizes)	[2]	
19 Appearance		4
a) Button group has <i>symmetric</i> distances between the buttons and to the container's borders (as shown in the screenshot)	[2]	
b) Buttons are transparent with white text, and have a white rectangular border	[2]	
20 Behavior		7
a) Flight details change depending on the chosen flight in the <i>results</i> view. This works for <i>each</i> of the flights in the results view (the properties in results and details view have to be <i>the same</i>)	[4]	
b) Clicking on "Kalendereintrag" / "schedule event" alerts the date and departure time of the chosen flight	[3]	
21 Model		3
c) All displayed flight data in the details view is loaded from an adequate data structure	[3]	