

Test 1 - SE Architecture and Design

Format: Take home and individual

Time: 10 AM 29 November 2022 - 10 AM 3 December 2022

Submission: Code submission to Canvas + Deployment

Late policy: as this is a test format so every 4 hours late will result in 10% mark reduction. After 1 day late, it is not considered.

Software Requirement Specification

The Princess of Arena Cam Ranh Home needs to rebuild their website to attract customers for the new travel season. Currently, the website is hosted in some OTA (Online Travel Agents) such as booking.com and agoda.com.

The owner of the hotel wants to have its own website to reduce the dependency on OTA and to run their own marketing strategies.

Read more info here:

<https://www.booking.com/hotel/vn/the-princess-of-arena-cam-ranh-home.en-gb.html>

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RATE PLANS		AUG 2020
Standard Rate	SAT 15	\$99
Non-Refundable	SAT 15	\$89
Breakfast	SAT 15	\$119

Sync



RATE PLANS		AUG 2020
Standard Rate	SAT 15	\$105
Non-Refundable	SAT 15	\$95
Breakfast	SAT 15	\$125

Sync



Questions:

1. Build the hotel website (24 marks)

- Define a good data model to capture and present all information of a hotel. The real life example contains lots of data attributes. However, the scope of this test is limit into the following information:
 - Hotel name
 - Hotel address
 - Hotel map coordination (to display on map)
 - Hotel owner name

- Hotel owner email
- Hotel owner phone
- List of hotel rooms
 - Room name: single, double, family, sea-view, park view etc.
 - Room size: in m2 square unit
 - Room rate: in USD
 - Number of rooms: quantity of rooms. For example, 2 single rooms, 3 double rooms etc.
- House rule: rules such as no pet, no smoking etc
- Check-in time
- Check-out time
- Photos: contains a list of photos with one photo as a featured photo. All photos must have an order to create a good impression.
- Utilities: can be list of checkboxes for the following attributes:
 - AC
 - Terrace
 - Pool
 - Gym
 - Restaurant
 - Beach

b. Design a website

Visitors

The first time when users visit the website, you should populate all these data from an online json. As a backend API is not required in this test, you can rely on a number of free json storage services such as:

<https://www.npoint.io/>
<https://jsonbin.it/>

All these services even allow you to upload a json and it will return a json api for later use. It looks very similar to Post to a real backend api.

If you couldn't manage to do it, you can store all the changes into a web localStorage.

Again, when visitors visit the website data must be loaded from an online json storage.

Admin

When an admin login to update the website, all the changes must be stored either in the online json (can be different from the visitor loaded json) or localStorage.

Basically, the admin can update all the information of the hotel as described earlier. You design necessary forms for the admin to edit the website. Remember a hotel can have more than 1 room.

As a demo, you should copy all the info from the Princess Area Home website hosted on booking.com and store them in the online json. An admin can edit based on these sample data.

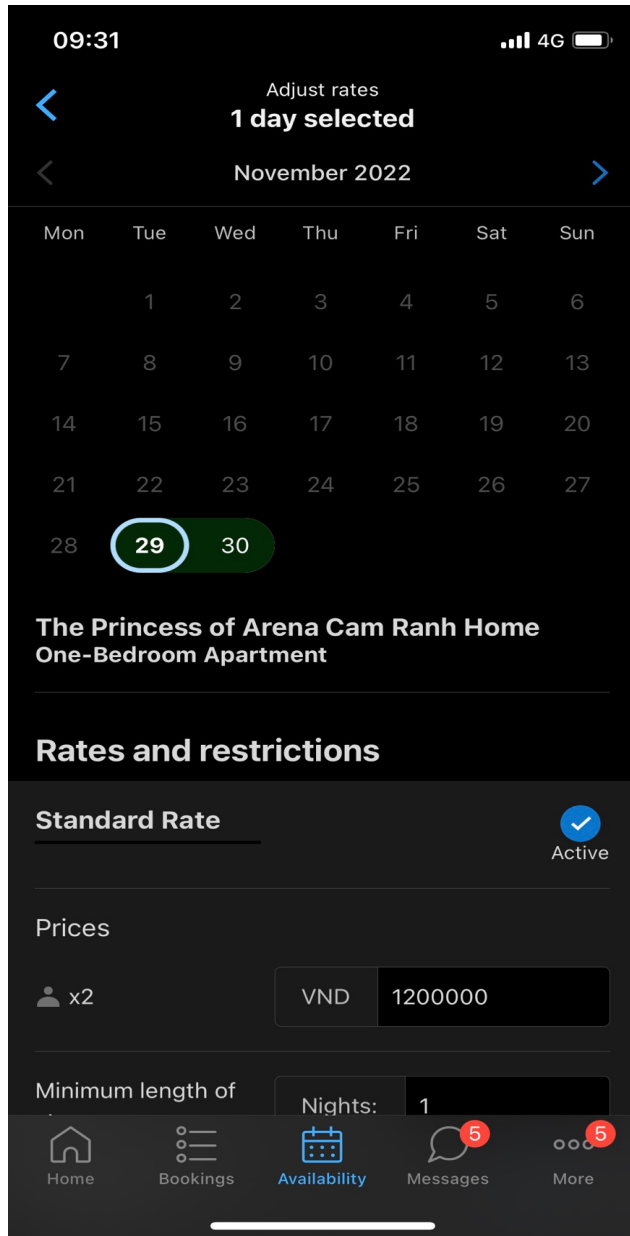
- c. Deploy a website to a hosting service to use online
- d. Build a good UI and UX, you can use any CSS frameworks

2. (6 marks) Student will select either part A or part B for their answers

Part A: Price listing and booking.

Admin:

- An admin can update the price of a room by an individual date. Of course, they can do bulk edit to update the price of the room by start date - end date. All these changes must be logged in localStorage (and to synchronize to a real API in later phase)





Visitors:

- A visitor can input a check in and check out date and the system will calculate the total prices based on the price updated by the admin














Availability

 We Price Match

 Tue 29 Nov – Wed 30 Nov

 2 adults · 0 children · 1 room

Change search

Apartment type	Sleeps	Today's price	Your choices	Select an apartment	
One-Bedroom Apartment 2 single beds  <div> <div>  Entire apartment </div> <div>  36 m² </div> </div> <div> <div>  Private kitchen </div> <div>  Ensuite bathroom </div> </div> <div> <div>  Balcony </div> <div>  View </div> <div>  Air conditioning </div> </div> <div> <div>  Flat-screen TV </div> <div>  Terrace </div> </div> <div>  Kitchen </div>		<div> VND 1,200,000 VND 1,080,000 ⓘ +VND 99,265 taxes and charges </div>	<div>  Breakfast VND 110,000 (optional) ⓘ </div> <div> Total cost to cancel ✓ NO PREPAYMENT NEEDED – pay at the property </div>	<div> 0 ▾ </div>	<div> <div>I'll reserve</div> <div> • Confirmation is immediate <div>Select your account</div> </div> <div> • No booking or credit card fees! </div> <div>No credit card needed!</div> </div>

- After the visitor selects a date (checkin-checkout), the hotel must store this booking in localStorage. Information of a booking includes name, guest, email, phone number, and checkin-checkout date, total price.

Part B: Synchronize between OTA

Students need to build a simple tool to synchronize against 2 OTAs which are booking.com and agoda.com. You may need to create an account and get developer keys in the 2 websites. This synchronized tool can update all information of a hotel. However, the scope of this test only requires students to update the price:

Date - Rate plan - Price.

For example:

- All the date in August 2023 for standard rate is 100\$
- Weekends of August 2023 for standard rate is 120\$

RATE PLANS

AUG 2020

Standard Rate

SAT 15
\$105




Non-Refundable

SAT 15
\$95

Breakfast

SAT 15
\$125

Sync

Non-functional requirements:

- Students submit their code to Canvas
- Students host their website on an online hosting, can be anything like heruko, gcloud, aws, digital oceans (2 marks/24).
- Students can use any CSS, JS frameworks.
- There are also marks for UI and UX (5 marks/24)
- Most of the requirements are described clearly in the specification. If something is unclear, try to make your own assumption and go ahead.

Plagiarism cautions

- Make sure you work on your own as this is an individual assessment, not a group work
- You shouldn't copy code from others or let others copy your code, we will run a JPlag software to check similar code.
- However, you can get support from your peers on learning a new framework or library, or debug your code.