VIETNAM NATIONAL UNIVERSITY - HO CHI MINH CITY
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SOFTWARE ENGINEERING

Project report

Restaurant POS 2.0

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Contents

Changelog

No.	Date	Changes	Actors
3.	6/4/2021	"Section 2.3.2 Order processing" initialized	Thai Van Nhat
		"Section 2.3.1 Menu viewing and ordering" updated	Van Chan Duong
2.	4/4/2021	"Section 3 Non-functional requirements" updated "Section 2.1 Functions" updated "Section 2.2 Use case diagram" updated "Section 2.3.1 Menu viewing and ordering" initialized	Van Chan Duong
1.	2/4/2021	"Section 1 Introduction" initialized "Section 2 Functional requirements" initialized "Section 3 Non-Functional requirements" initialized	Van Chan Duong

Work assignment

1 Introduction

Point of sale (POS) or point of purchase is the time and place where a retail transaction is completed. At the point of sale, the merchant calculates the amount owed by the customer, indicates that amount, may prepare an invoice for the customer, and indicates the options for the customer to make payment. In restaurant business, Point of sale systems enable the process of ordering food, notifying status and payment transaction.

2 Functional requirements

2.1 Functions

Menu listing and ordering: The restaurant's menu will be provided for the customers to choose and order their favourites dishes.
Order processing: The kitchen and restaurant's staffs will be able to manage the availability of the dishes and inform the customers whenever needed.
Payment transaction: The customers can choose the methods provided by the restaurant to pay for their order.
Order and transaction management: The accountant can manage orders' and transactions' information, such as dishes, date, total amount of money, and will be able to create a summary of them.

2.2 Use case diagram

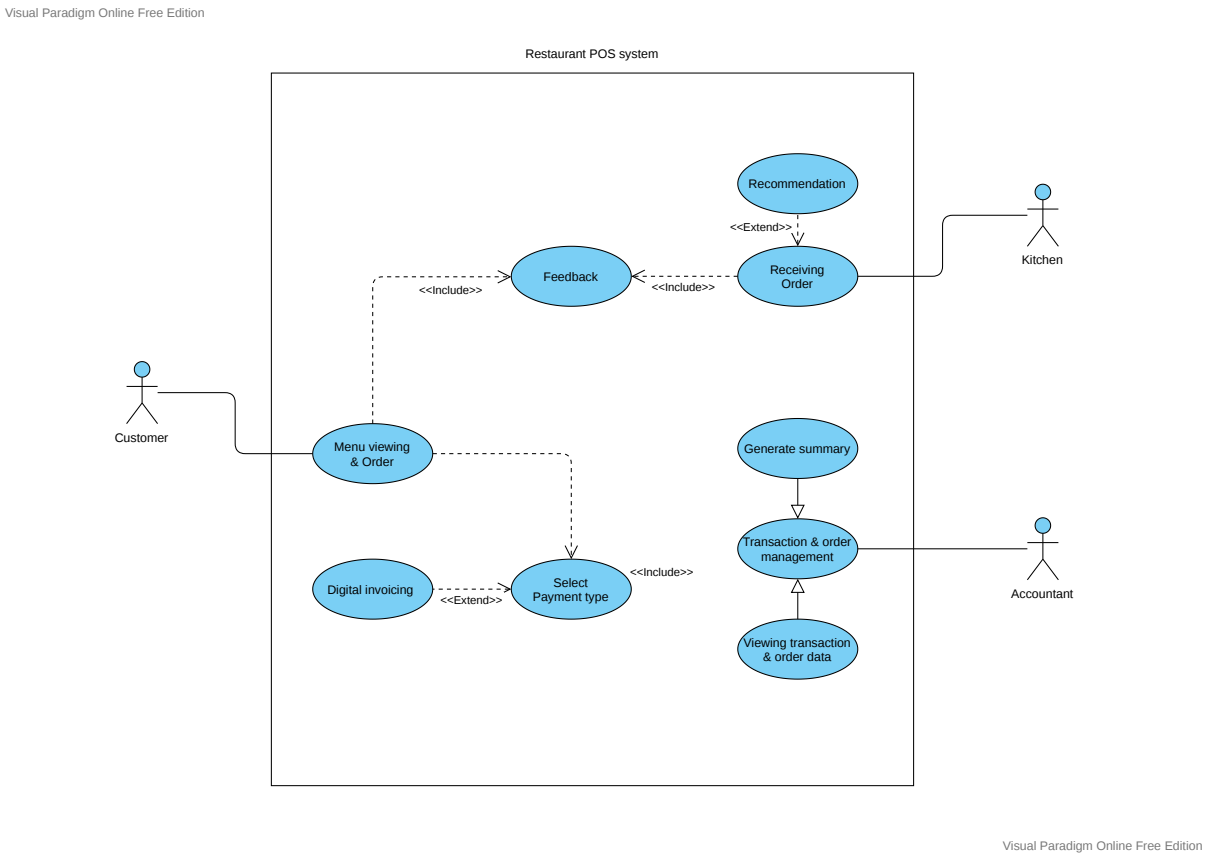

Figure 1: General use case diagram

2.3 Use case description

2.3.1 Menu viewing and ordering

Table 1: «Menu viewing and ordering»

Name	Menu viewing and ordering
Actor	Customer
Description	The customer can view and choose the dishes they want from the menu when they access to the system's customer's side.
Precondition	The customer need to access to the system's customer's side through the QR code provided on each table.
Normal flow	1. Customers go to the menu page by QR code. 2. Customers browsing through the menu. 3. Customers choose their dishes by tapping or clicking the "Add to order list" button located at the end of each dish's frame. 4. After finish choosing their dishes, customers select the "Finish your order" button. 5. The order confirming page will appear letting the customer know the status of their dishes. 6. All the dishes is available and the confirming page transit to summary of the order, prompting the customer for the payment.
Alternative flow	*Alternative 1.* At step 5 when the status of dishes changed to "NOT AVAILABLE", the customer will be prompted to choose between changing the dishes or simply removing those dishes by using the provided dialog box. 1.1 If the customer want to change the dishes then the customer will be directed to the menu page and started again from step 1. 1.2 If the customer want to remove the unavailable dishes then the system will proceed to do so. *Alternative 2.* At the step 5, the customer receive a recommendation from the kitchen. The customer will then be prompted to choose between adding recommended dishes or keeping their order. 2.1 If the customer want to add the dishes then the system will automatically add the dishes to the order. 2.2 If the customer don't want to change their order then the system will proceed to do so.

2.3.1.a Customers' main flow

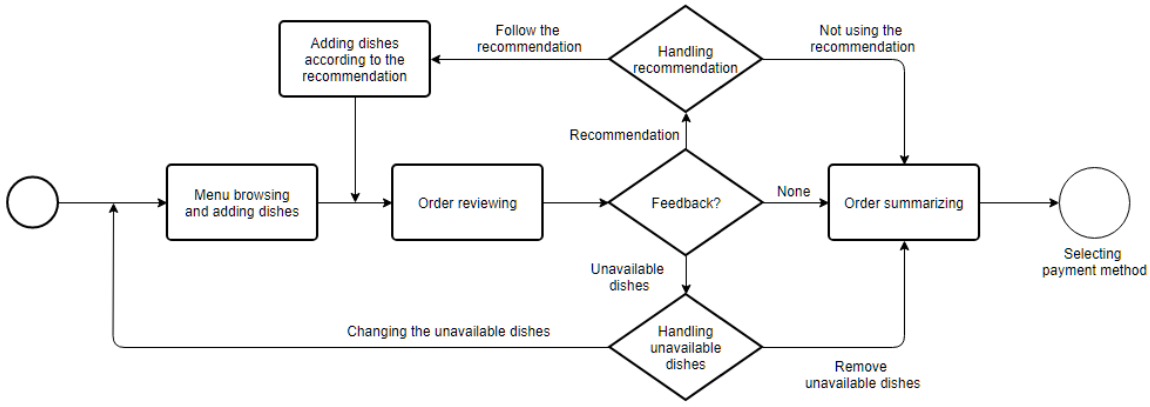

Figure 2: Menu viewing and ordering main flow

2.3.1.b Mockup

The full mockup will be included at `Menu_viewing_and_ordering.pdf` file.

1. Menu Page:

Description:

No.	Field name	Description	Control type	Data Type	Mandatory	Default value
1.	Check button	To see the ordered dishes and their status	Button	N/A	Yes	N/A
2.	Filter	To filter the dishes by specific categories	List of button	N/A	No	N/A
3.	Dish info card	Display dish's info in a new page	Link box	Text, Image	Yes	N/A
4.	Add to cart button	Add the dish to the order	Button	N/A	Yes	N/A

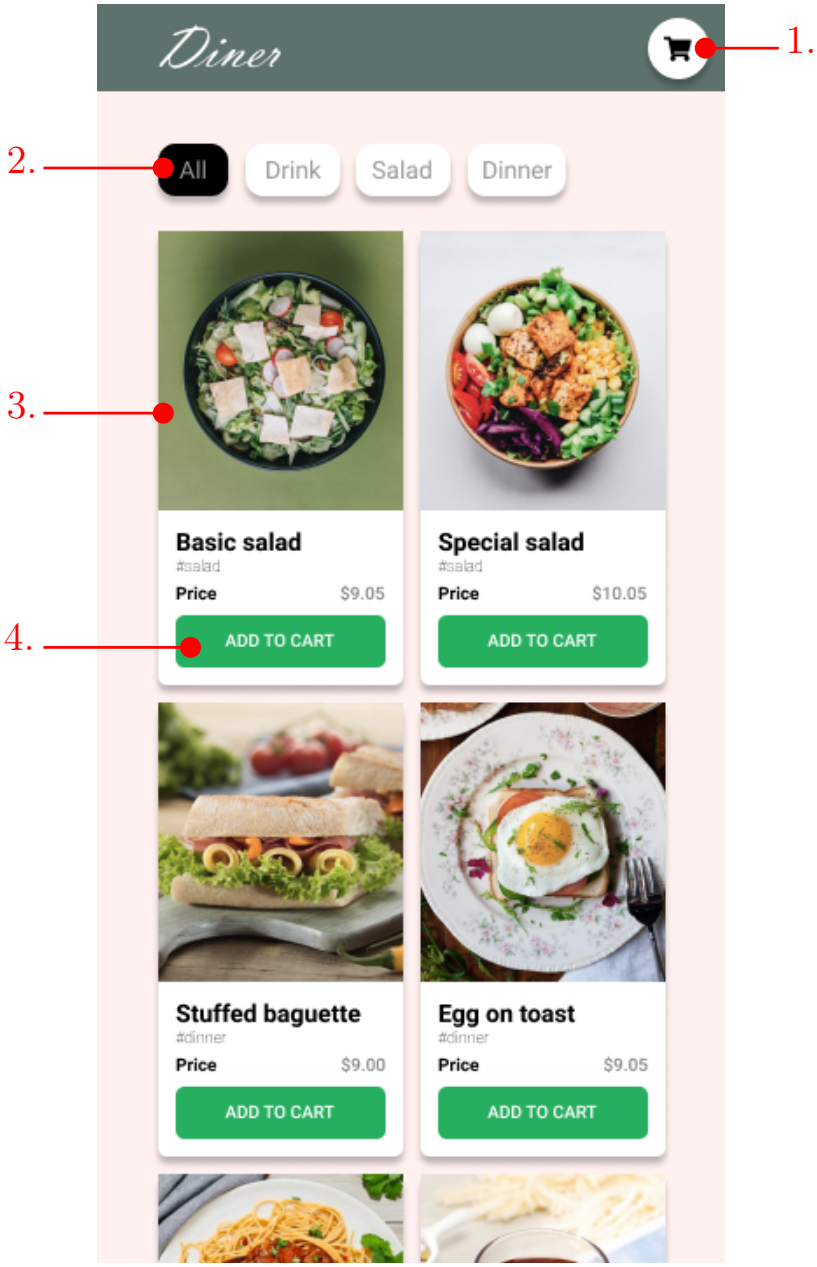

Figure 3: Mock up 1: Menu page

2. Dish info page:

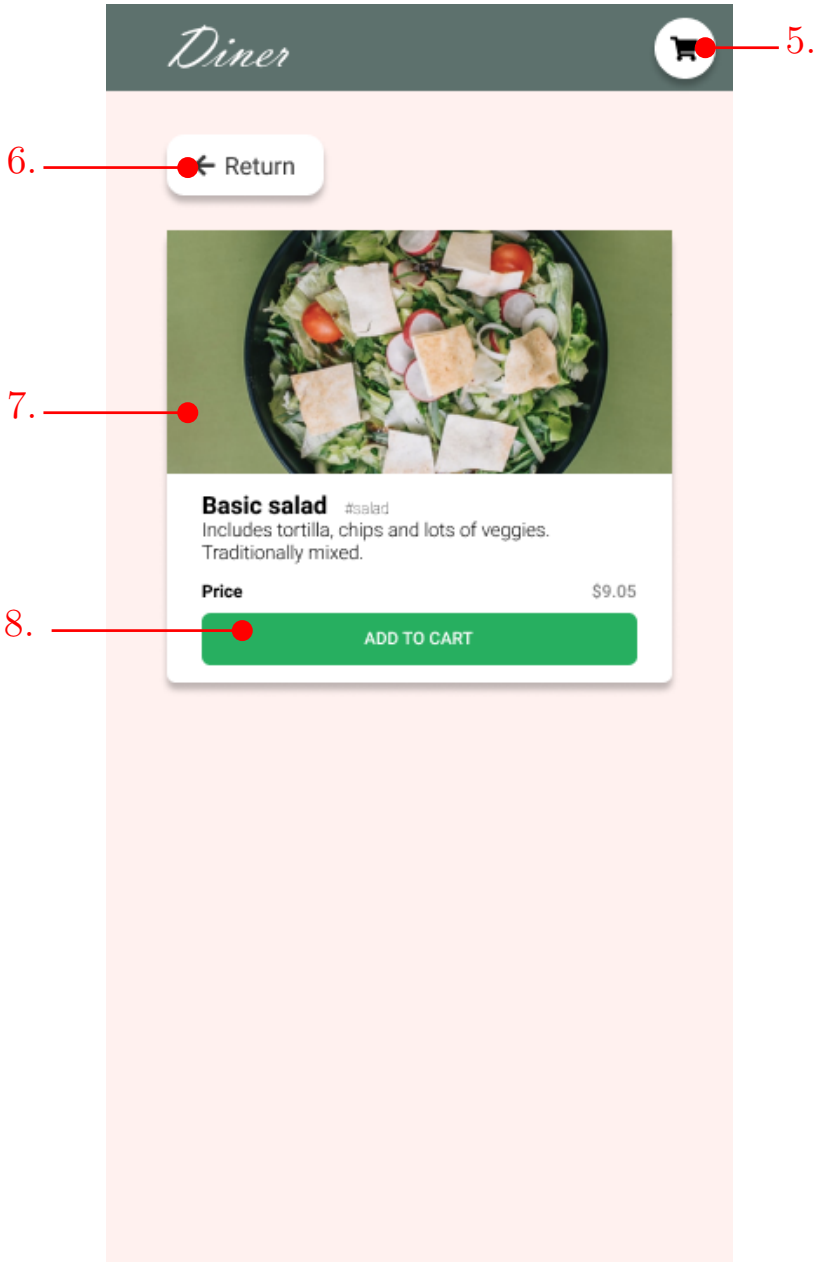

Figure 4: Mock up 2: Dish info page

Description:

No.	Field name	Description	Control type	Data Type	Mandatory	Default value
5.	Check button	To see the ordered dishes and their status	Button	N/A	Yes	N/A
6.	Return button	Return to the menu page	Button	N/A	Yes	N/A
7.	Dish info card	Display detailed dish's info	Box	Text, Image	Yes	N/A
8.	Add to cart button	Add the dish to the order	Button	N/A	Yes	N/A

3. Order review page:

Description:

No.	Field name	Description	Control type	Data Type	Mandatory	Default value
9.	Next button	To confirm the order and see the order's summary	Button	N/A	Yes	N/A
11.	Kebab menu button	To open a menu with "Replace" and "Remove" dish option	Button	N/A	Yes	N/A
12.	Dish info card	Display dish's status and allow to change the dish's number of portion	Box	Text, Button	Yes	N/A
13.	Not available dish field	Prompt the customers to change or remove the unavailable dish	Box	Text, Button	Yes	N/A
14.	Recommend dishes field	Prompt the customers if they want to add the recommended dishes or not	Box	Text, Button	Yes	N/A

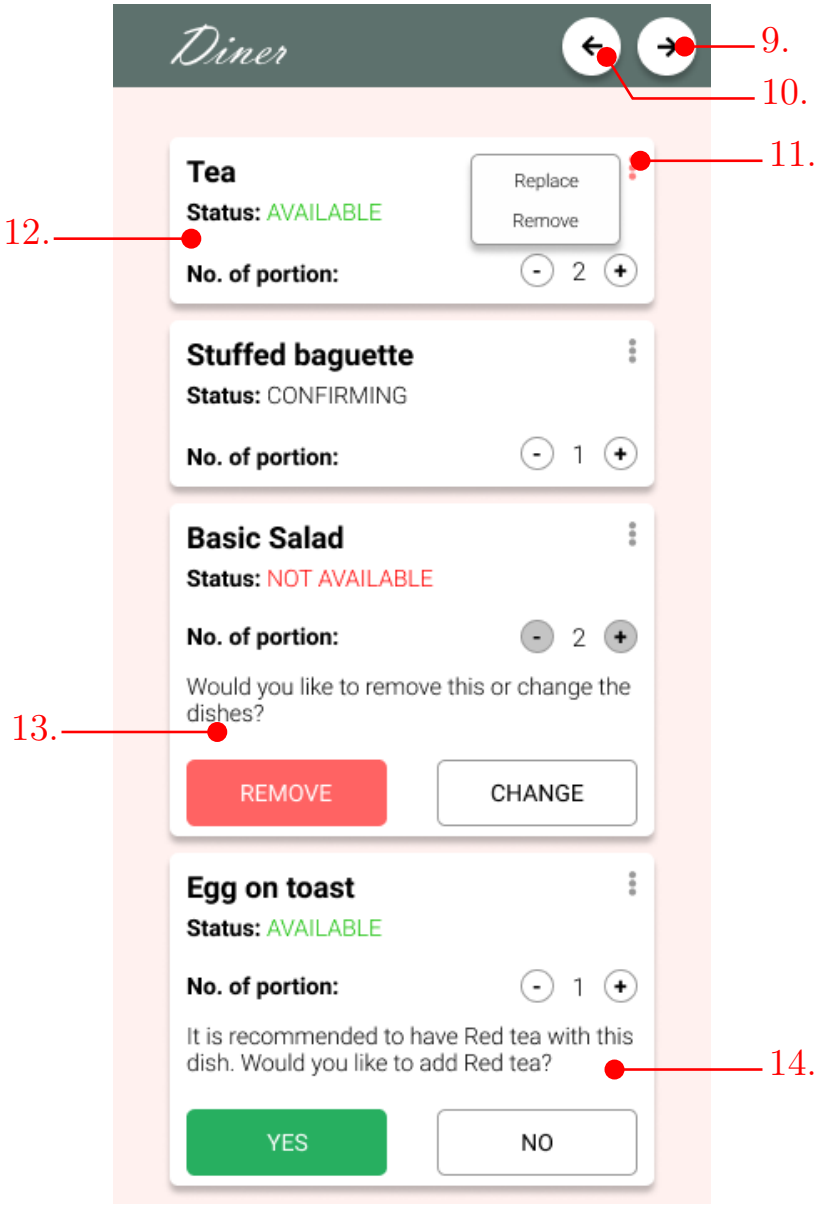

Figure 5: Mock up 3: Order review page

4. Dish changing page:

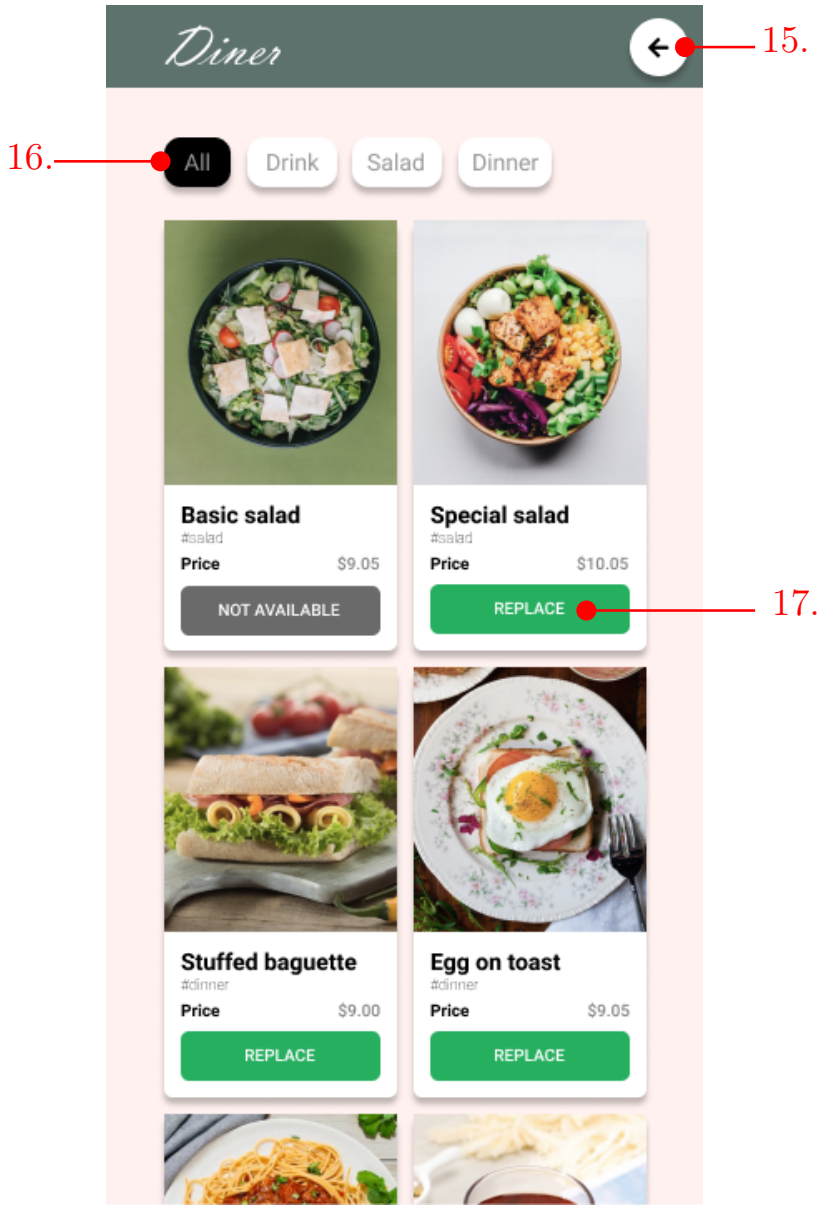

Figure 6: Mock up 4: Dish change page

Description:

No.	Field name	Description	Control type	Data Type	Mandatory	Default value
15.	Back button	To return to the order review page	Button	N/A	Yes	N/A
16.	Filter	To filter the dishes by specific categories	List of button	N/A	No	N/A
17.	Replace button	To replace the dish issued the "Replace" or "Change" command	Button	Button	Yes	N/A

5. Summary page:

Description:

No.	Field name	Description	Control type	Data Type	Mandatory	Default value
18.	Dish summary card	Display dishes' summary and total price	Box	Text	Yes	N/A
19.	Checkout button	To checkout and enter the select payment method section	Button	N/A	Yes	N/A

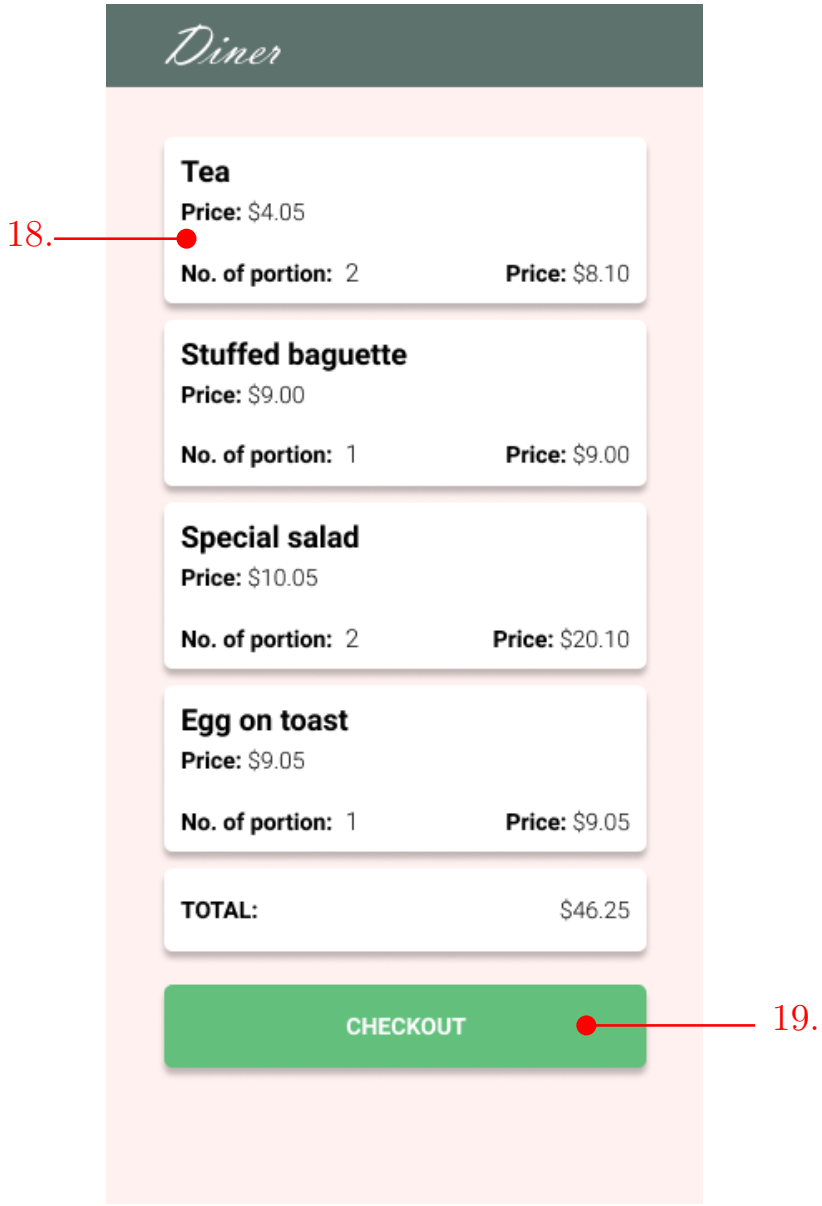

Figure 7: Mock up 5: Summary page

2.3.2 Order Processing

Table 2: «Order processing»

Name	Order processing
Actor	Kitchen and Restaurant's staff
Description	The kitchen and restaurant's staff can manage all order information from the customers.
Precondition	
Normal flow	1. tbd
Alternative flow	*Alternative 1.* tbd

3 Non-functional requirements

3.1 Product requirements:

3.1.1 Performance requirements:

- The system should be able to handle at least 300 transactions per day.
- The order confirming time (from when the order is sent from the customer to when the kitchen approve its availability) should less than 5 minutes.
- The transaction time should not exceed 2 minutes.
- The system should be able to handle at least 5 simultaneously table orders.
- The rendering time of the system's customer's side should not exceed 3 seconds.

3.1.2 Security Requirements:

- All the transaction data should be secured and only allow to read, so that it's protected from mischievous behaviours and also from internal attack.
- The customer's audit information should not be recorded or used from internal sources.

3.1.3 Usability requirements:

- The system should be functional on widely used browsers (Chrome, Safari, Firefox, Samsung Internet, Edge, Opera, UC Browser).
- The system should be available on usual working hours (from 8 a.m. to 10 p.m.). Downtime within working period shall not exceed 10 seconds in any one day.
- The customer should be able to use the system without going through any training.

3.2 Organizational requirements:

3.2.1 Operational requirements:

- The system should be able to create non-direct interaction between the restaurant's staffs and the customers.
- The customers only allow to access the customer-side system using the QR code and password provided on each restaurant's table.
- The restaurant's staffs access to the system side using their provided ID.

3.3 External requirements:

3.3.1 Legislative requirements:

- The invoice and information recording shall be implemented as set out in *Luat Giao dich dien tu 2005*.