Java Web Development Basics

Java EE Workshop – JavaServer Faces

PANDA

PANDA (**P**ackage **A**cceptance and **N**ational **D**elivery **A**pplication) is a platform for package deliveries, which is a fast-rising Start-Up, which lacks a web application. You have been employed by the **KFC** (**K**ung-**F**u-**C**hicken) Corporation to implement a web platform for **PANDA**.

1. Database Requirements

The **Database** of the **PANDA** application needs to support **3 entities**:

User

- Has an **Id** – a **UUID String** or an **Integer**.
- Has an **Username**
- Has a **Password**
- Has an **Email**
- Has an **Role** – can be one of the following values ("**User**", "**Admin**")

Package

- Has an **Id** – a **UUID String** or an **Integer**.
- Has a **Description** – a string.
- Has a **Weight** – a floating-point number.
- Has a **Shipping Address** – a string.
- Has a **Status** – can be one of the following values ("**Pending**", "**Shipped**", "**Delivered**", "**Acquired**")
- Has an **Estimated Delivery Date** – A **LocalDateTime** object.
- Has a **Recipient** – a **User** object.

Receipt

- Has an **Id** – a **UUID String** or an **Integer**.
- Has a **Fee** – a decimal number.
- Has an **Issued On** – a **LocalDateTime** object.
- Has a **Recipient** – a **User** object.
- Has a **Package** – a **Package** object.

Implement the entities with the **correct datatypes**.

2. Template Requirements

Guest Templates

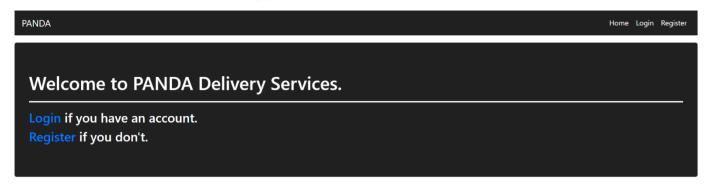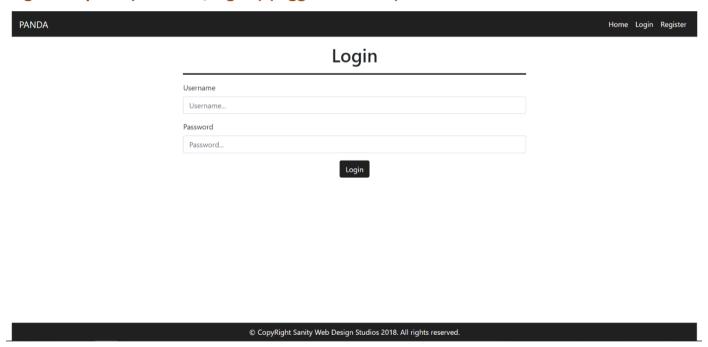These are the **templates** and **functionalities**, accessible by **Guests** (**logged out** users).

Index Template (route = "/") (logged out user)

PANDA   Home   Login   Register

Welcome to PANDA Delivery Services.

Login if you have an account.
Register if you don't.

Login Template (route = "/login") (logged out user)

PANDA   Home   Login   Register

Login

Username

| Username... |

Password

| Password... |

Login

Register Template (route = "/register") (logged out user)

PANDA   Home   Login   Register

Register

Username

| Username... |

Password

| Password... |

Confirm Password

| Confirm Password... |

Email

| Email... |

[Register]

User Templates

These are the **templates** and **functionalities**, accessible by `Users` (**logged in** users with `Role` - `User`).

LoggedIn Index Template (route="/") (logged in user)

PANDA   Home   Receipts   Logout

Hello, Pesho!

Pending	Shipped	Delivered
IPhone XS Case [Details]	1959 Irish Bourbon [Details]	Dog Toy [Acquire]
TV table [Details]		Mineral Water [Acquire]
Chushkopek [Details]		
Office Chair [Details]		

Package Details Template (route="/packages/details?id={id}") (logged in user)

PANDA   Home Receipts Logout

Package Details

Address	Status	Estimated Delivery Date
ul. Korab-Planina 1	Pending	N/A

Weight	Recipient
5.64 KG	Ivo

Description

IPhone XS Case

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PANDA   Home Receipts Logout

Package Details

Address	Status	Estimated Delivery Date
ul. Korab-Planina 1	Shipped	26/09/2019

Weight	Recipient
5.64 KG	Ivo

Description

IPhone XS Case

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PANDA   Home Receipts Logout

Package Details

Address	Status	Estimated Delivery Date
ul. Korab-Planina 1	Delivered	Delivered

Weight	Recipient
5.64 KG	Ivo

Description

IPhone XS Case

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NOTE:

- If the **package's status** is `Pending`, it should **NOT** have an `Estimated Delivery Date`, and "**N/A**" should be presented.
- If the **package's status** is `Shipped`, it will have an `Estimated Delivery Date`. In that case the **date** should presented instead of "**N/A**". (Example: "**29/02/2016**").
- If the **package's status** is `Delivered` or `Acquired`, instead of the **date**, "`Delivered`" should be presented.

Receipts Template (route="/receipts") (logged in user)

PANDA				Home Receipts Logout

My Receipts

Id	Fee	Issued On	Recipient	Actions
fbb536f4-7463-41d2-8650-4d1c87de722b	$15.06	26/09/2019	Ivo	Details
7c62da68-3875-44ba-815d-99518039b946	$1344.72	15/11/2018	Ivo	Details

Receipt Details Template (route="/receipts/details?id={id}") (logged in user)

PANDA		Home Receipts Logout

Receipt Details

Receipt Number:	fbb536f4-7463-41d2-8650-4d1c87de722b

Issued On:	26/09/2019
Delivery Address:	ul. Korab-Planina 1

Package Weight (KG):	5.64
Package Description:	IPhone XS Case
Recipient:	Ivo

Total: $15.06

Admin Templates

These are the **templates** and **functionalities**, accessible by `Admins` (**logged in** users with `Role` - `Admin`).

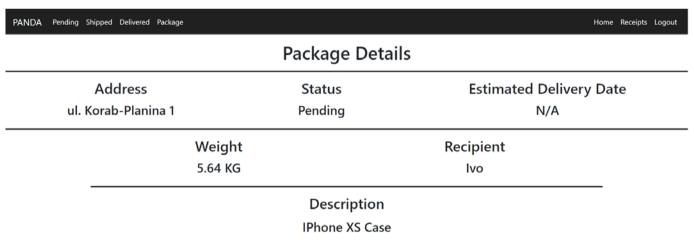## Admin Index Template (route="/") (logged in admin)

Hello, Administrator Pesho!

Pending	Shipped	Delivered

Pending
- IPhone XS Case [Details]
- TV table [Details]
- Chushkopek [Details]
- Office Chair [Details]

Shipped
- 1959 Irish Bourbon [Details]

Delivered
- Dog Toy [Acquire]
- Mineral Water [Acquire]

The navigation links above should lead to:

- [**Pending**] – **Pending Packages**
- [**Shipped**] – **Shipped Packages**
- [**Delivered**] – **Delivered Packages**
- [**Package**] – **Create Package**

Package Details Admin Template (route="/packages/details?id={id}") (logged in admin)

Package Details

Address	Status	Estimated Delivery Date
ul. Korab-Planina 1	Pending	N/A

Weight	Recipient
5.64 KG	Ivo

Description

IPhone XS Case

PANDA Pending Shipped Delivered Package   Home Receipts Logout

Package Details

Address	Status	Estimated Delivery Date
ul. Korab-Planina 1	Shipped	26/09/2019

Weight	Recipient
5.64 KG	Ivo

Description
IPhone XS Case

PANDA Pending Shipped Delivered Package   Home Receipts Logout

Package Details

Address	Status	Estimated Delivery Date
ul. Korab-Planina 1	Acquired	Delivered

Weight	Recipient
5.64 KG	Ivo

Description
IPhone XS Case

NOTE:

- If the **package's status** is **Pending**, it should **NOT** have an **Estimated Delivery Date**, and "**N/A**" should be presented.
- If the **package's status** is **Shipped**, it will have an **Estimated Delivery Date**. In that case the **date** should presented instead of "**N/A**". (Example: "**29/02/2016**").
- If the **package's status** is **Delivered** or **Acquired**, instead of the **date**, "**Delivered**" should be presented.

Receipts Admin Template (route="/receipts") (logged in admin)

PANDA Pending Shipped Delivered Package   Home Receipts Logout

My Receipts

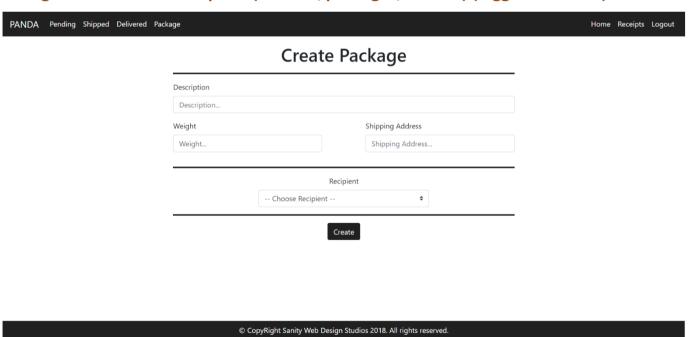| Id	Fee	Issued On	Recipient	Actions
fbb536f4-7463-41d2-8650-4d1c87de722b	$15.06	26/09/2019	Ivo	Details
7c62da68-3875-44ba-815d-99518039b946	$1344.72	15/11/2018	Ivo	Details

Receipt Details Admin Template (route="/receipts/details?id={id}") (logged in admin)

PANDA   Pending   Shipped   Delivered   Package   Home   Receipts   Logout

Receipt Details

Receipt Number:	fbb536f4-7463-41d2-8650-4d1c87de722b

Issued On:	26/09/2019
Delivery Address:	ul. Korab-Planina 1

Package Weight (KG):	5.64
Package Description:	IPhone XS Case
Recipient:	Ivo

Total: $15.06

Package Create Admin Template (route="/packages/create") (logged in admin)

PANDA   Pending   Shipped   Delivered   Package   Home   Receipts   Logout

Create Package

Description

Description...

Weight   Shipping Address

Weight...   Shipping Address...

Recipient

-- Choose Recipient --   ▲▼

Create

NOTE: The **Recipients** field is a **dropdown menu**, with **all the registered users** in the **application** (including **yourself**). The **primarily selected option** should be "**-- Choose Recipient --**" and it should be **disabled**, so that it **cannot** be **selected**.

Pending Packages Admin Template (route="/packages/pending") (logged in admin)

PANDA   Pending Shipped Delivered Package   Home Receipts Logout

Pending Shipment

#	Description	Weight	Shipping Address	Recipient	Actions
1	IPhone XS Case	5.64 KG	ul. Korab-Planina 1	Ivo	Ship
2	Mineral Water	503.64 KG	ul. Tintyava 15-17	Pesho	Ship

Shipped Packages Admin Template (route="/packages/shipped") (logged in admin)

PANDA   Pending Shipped Delivered Package   Home Receipts Logout

Shipped

#	Description	Weight	Estimated Delivery Date	Recipient	Actions
1	IPhone XS Case	5.64 KG	25/09/2019	Ivo	Deliver
2	Mineral Water	503.64 KG	12/11/2018	Pesho	Deliver

Delivered Packages Admin Template (route="/packages/delivered") (logged in admin)

| | PANDA | Pending | Shipped | Delivered | Package | | | | Home | Receipts | Logout |

Delivered

#	Description	Weight	Shipping Address	Recipient	Actions
1	IPhone XS Case	5.64 KG	ul. Korab-Planina 1	Ivo	Details
2	Mineral Water	503.64 KG	ul. Tintyava 15-17	Pesho	Details

All of the templates will be given to you in the form of HTML files, so make sure you implement your pages correctly.

NOTE: The templates should look **EXACTLY** as shown above.

NOTE: The templates do **NOT require additional CSS**. Only **bootstrap** and the given **style.css** are enough.

NOTE: In the given **style.css** you'll see some helpful classes "`bg-panda`", "`text-panda`", "`border-panda`". "`border-panda`" will help you with the **border** of the **blocks** on the **Index Pages**.

3. Functional Requirements

The **Functionality Requirements** describe the functionality that the **Application** must support.

The **application** should provide **Guest** (not logged in) users with the functionality to:

- **Login**
- **Register**
- **View** the **Guest Index** page

The **application** should provide **Users** (logged in) with the functionality to:

- **Logout**
- **View** their **Packages**
- **View details** about a **Package**
- **View** their **Receipts**
- **View details** about a **Receipt**

The **application** should provide **Admins** (logged in, with **role** - **Admin**) with the functionality to:

- **Logout**
- **View** their **Packages**
- **View details** about a **Package**
- **View** their **Receipts**

- **View details** about a **Receipt**
- **View** all **Pending Packages**
- **View** all **Shipped Packages**
- **View** all **Delivered Packages**
- **View details** about all **Delivered Packages**
- **Ship Packages**
- **Deliver Packages**

Users

The **first registered User** should be **assigned** a **role** – "**Admin**". Every **User** after that, should have a **role** – "**User**".

Users have **Packages**, which are **created** and **controlled** for them, by an **Administrator**.

Users can **view Details** about their **own Packages**.

When a **Package** is **delivered**, a **User** can **acquire** it, at which point a **Receipt** is **created** with **that Package** and **that User**.

Users can **view** their **Receipts**, and **details** about each **Receipt**.

Administrators (role = "**Admin**") are essentially like normal **Users**. They can also have **Packages**, which are **delivered**, **acquired** and they also have **Receipts**.

Administrators can also **create Packages** for a specific **User**.

- They can also **view** all **Pending Packages**, and they can **Ship** them.
- They can also **view** all **Shipped Packages**, and they can **Deliver** them.
- They can also **view** all **Delivered Packages**, and they can view **Details** about them.

Packages

When **Packages** are **created**, they are **created** with a **Description**, a **Weight**, a **Shipping Address** and a **Recipient User**.

- Upon creation, the **Status** of a **Package** should be set to **Pending**.
- Upon creation, the **Estimated Delivery Date** of a **Package** should be set to **NULL**.

Functionality

Pending Packages

A **Pending Package**, can be **Shipped** by an **Administrator**, by clicking on the [**Ship**] button from the **Pending Packages** Page. At that moment the **Package Status** becomes "**Shipped**" and the **Estimated Delivery Date** is to be set to a **random** of **20-40** days from then.

- **All Pending Packages** are presented on the **Pending Packages Page**.
- A **User** can view his **Pending Packages** on his **Index Page** in the **Pending** rectangular block.
- A **User** can **view details** about each one of his **Pending Packages** from his **Index Page**, by clicking on the [**Details**] button.

Shipped Packages

A **Shipped Package**, can be **Delivered** by an **Administrator**, by clicking on the [**Deliver**] button from the **Shipped Packages Page**. At that moment the **Package Status** becomes "**Delivered**".

- **All Shipped Packages** are presented on the **Shipped Packages Page**.

- A **User** can view his **Shipped Packages** on his **Index Page** in the **Shipped** rectangular block.
- A **User** can **view details** about each one of his **Shipped Packages** from his **Index Page**, by clicking on the [**Details**] button.

Delivered Packages

A **Delivered Package**, can be **Acquired** by the **Package**'s **Recipient**, by clicking on the [**Acquire**] button from his **Index Page**. At that moment the **Package Status** becomes "**Acquired**" and a **Receipt** is **generated** to the **User** for that **Package**.

- **All Delivered Packages** are presented on the **Delivered Packages Page**.
- A **User** can view his **Delivered Packages** on his **Index Page** in the **Delivered** rectangular block.
- A **User** can **Acquire** each one of his **Delivered Packages** from his **Index Page**, by clicking on the [**Acquire**] button.

NOTE: The **INDEX PAGE** visualizes **ONLY** the **CURRENTLY LOGGED IN USER / ADMIN's PACKAGES**.

NOTE: **Acquired Packages** are viewable only by **Administrators** on the **Delivered Packages Page**.

NOTE: **Administrators** can **view details** about **ALL Delivered / Acquired Packages** from the **Delivered Packages Page**, by clicking on the [**Details**] button.

Receipts

Receipts are just data entities. They are **created** when a **Package** is **Acquired** by its **Recipient User**. A **Receipt** should be **created** with a **Package** and a **Recipient User**.

Upon creation, a **Receipt**'s **Fee** should be **set** to the **Package**'s **Weight multiplied** (*) by **2.67**.

Upon creation, a **Receipt**'s **IssuedOn** should be set to the **current moment**.

4. Security Requirements

The **Security Requirements** are mainly access requirements. Configurations about which users can access specific functionalities and pages.

- **Guest** (not logged in) users can access **Index** page and functionality.
- **Guest** (not logged in) users can access **Login** page and functionality.
- **Guest** (not logged in) users can access **Register** page and functionality.
- **Users** (logged in) can access **User LoggedIn Index** page and functionality.
- **Users** (logged in) can access **User Package Details** page and functionality.
- **Users** (logged in) can access **User Receipts** page and functionality.
- **Users** (logged in) can access **User Receipt Details** page and functionality.
- **Users** (logged in) can access **User Package Acquire** functionality.
- **Users** (logged in) can access **Logout** functionality.
- **Admins** (logged in) can access **every functionality** a **normal** logged in **User** can.
- **Admins** (logged in) can access **Admin LoggedIn Index** page and functionality.
- **Admins** (logged in) can access the **Admin Package Create** page and functionality.
- **Admins** (logged in) can access the **Admin Pending Packages** page and functionality.
- **Admins** (logged in) can access the **Admin Shipped Packages** page and functionality.
- **Admins** (logged in) can access the **Admin Delivered Packages** page and functionality.
- **Admins** (logged in) can access the **Admin Package Ship** functionality.
- **Admins** (logged in) can access the **Admin Package Deliver** functionality.