

Product specification



API Backend

- Based on python 10 and Fast API web framework
- Responsible for handling all business logic



Frontend (dynamic)

- Based on React 17 and npm
- Responsible for handling user actions and displaying functionalities on UI



ML Backend

- Based on python 10, tensorflow and keras
- Responsible for training the model and for providing iceberg locations and routes



ETL Backend

- Airflow is used picked as a workflow management platform
- Responsible for satellite data extraction, transformation of the data and storage of the transformed data into database



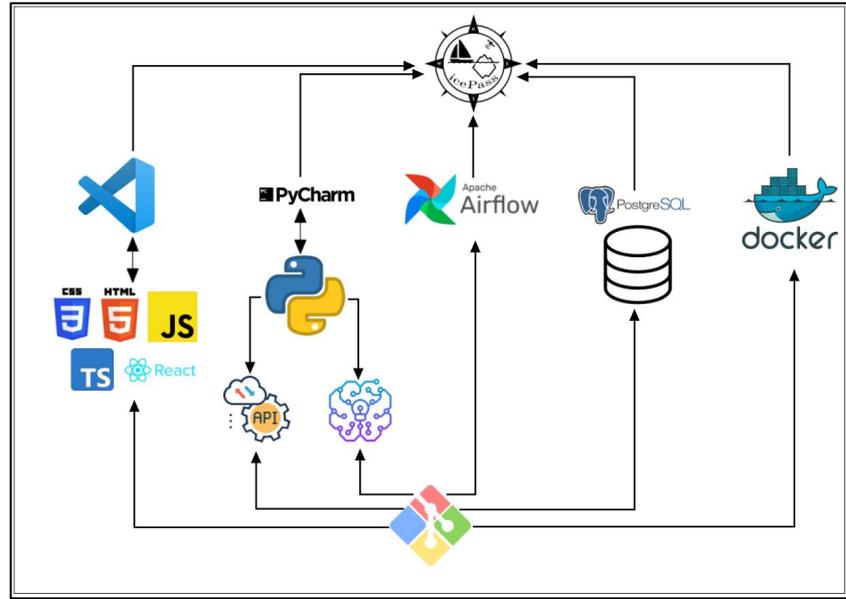
Database

- Postgis is our database of choice
- Responsible for storage of all the data used in the application



Webpage (static)

- Based on HTML, bootstrap, javascript
- Used as a entry point to the web application which provides all needed information to the user



- ❖ **Product divided into multiple smaller logical services (git repositories) and by combining them we get Icepass application**
- ❖ **All the services have docker configuration and are run in docker containers**



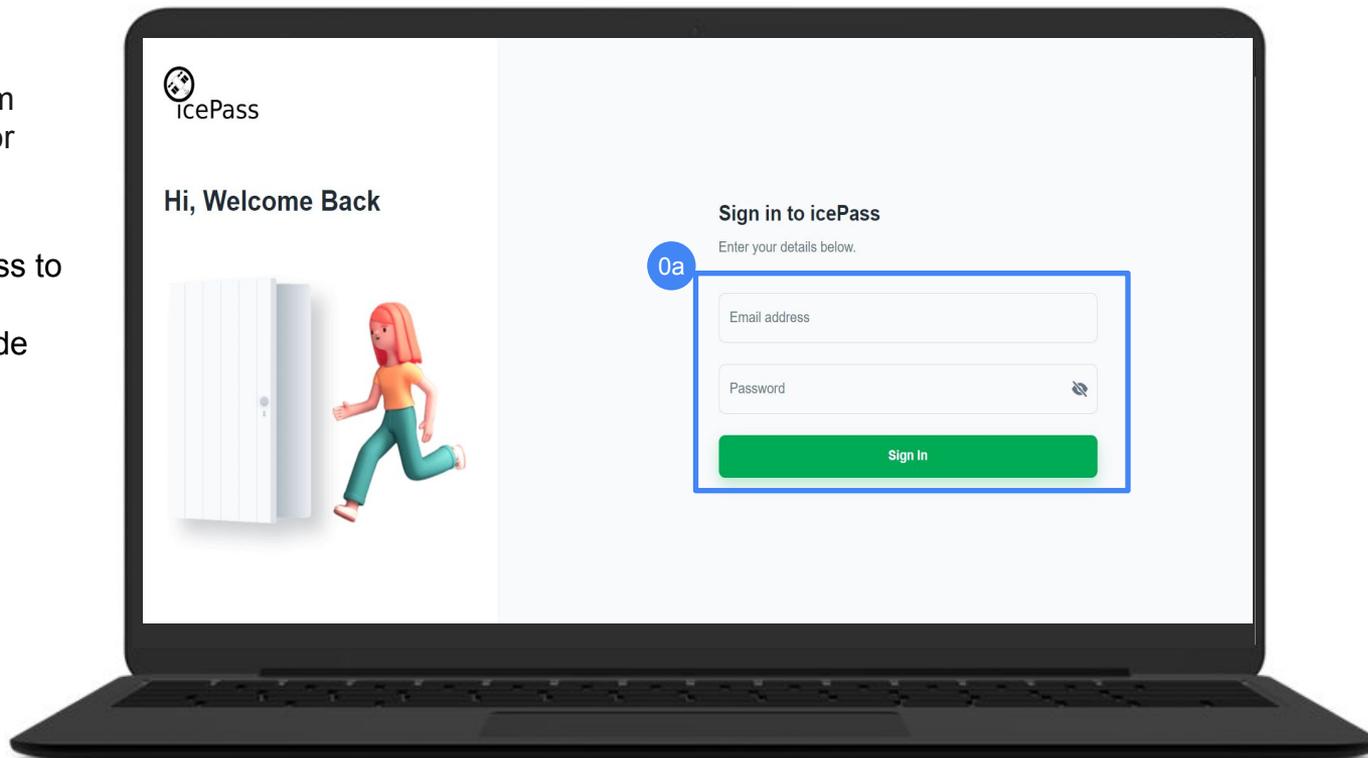
0 Login

0a Login to IcePass
Use credentials obtained from icePass team or your superior

0b Restricted access
In case you don't have access to IcePass, please refer to the access page in this user guide

0c Access IcePass
Follow these URL:

- [IcePass website](#)





1 Main page

1a Dashboard

Main page of the application where user has core functionalities

1b Select language

You can change the language by clicking on a flag

1c Add route

By clicking on a “add route” button route can be added:

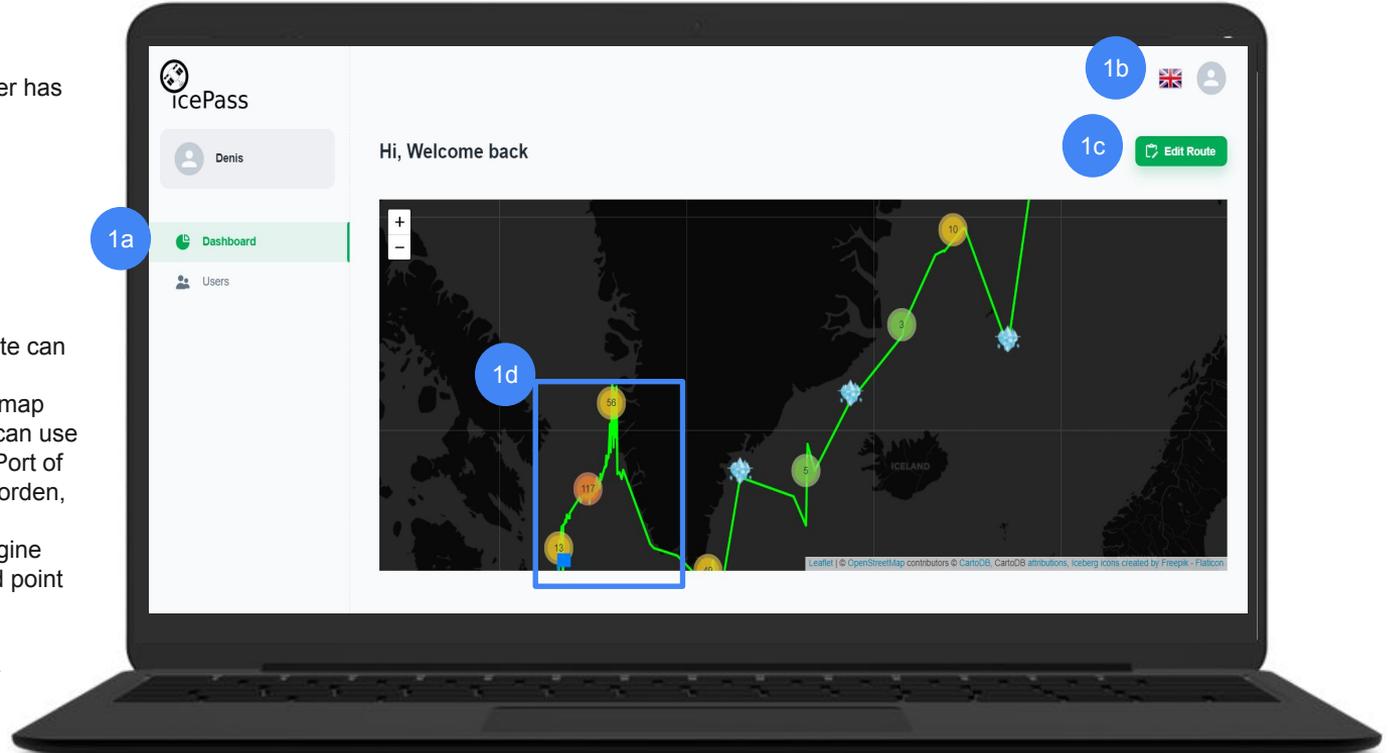
- By clicking on a ports on the map
- For the demo purpose, user can use only this ports: Port of Oslo, Port of Qeqertarsuaq, Port of Raudfjorden, Port of St. John

Once positions are added our path engine will generate the path from start to end point

1d Icebergs

By default icebergs are displayed on a map in a groups

User can zoom in to see how they are spread, user can also click on a iceberg to see useful additional information about it





2 Users page

2a Users

Users page for user management, for adding new users, deleting users, updating user information etc.

2b Create user

By clicking create user you will be able to create user

2c Manage users

By clicking on a user user will be able to update user information about the user
By clicking on a checkboxes, user can select and delete multiple users.

2d Users per page

You can filter how many users you can see per page and select on which page you want to go

2e View based on role

Refer to the access page to see more about the different roles used in a solution

The screenshot shows the IcePass web application interface. The sidebar on the left contains a user profile for 'Denis', a 'Dashboard' link, and a 'Users' link which is highlighted with a blue circle labeled '2a'. The main content area is titled 'Users' and features a search bar, a '+ Create User' button (highlighted with a blue circle labeled '2b'), and a table of users. The table has columns for 'First name', 'Last name', 'Country', and 'Email address'. It lists three users: 'Denis', 'myeospace_moderator', and 'myeospace_user'. A blue circle labeled '2c' points to the first row of the table. At the bottom right of the table, there is a pagination control showing 'Rows per page: 5' and '1-3 of 3', with a blue circle labeled '2d' pointing to it.

<input type="checkbox"/>	First name ↑	Last name	Country	Email address
<input type="checkbox"/>	Denis	Alibašić	Croatia	denis@mail.hr
<input type="checkbox"/>	myeospace_moderator	myeospace_moderator	Euspace	myeospace_moderator@demo.com
<input type="checkbox"/>	myeospace_user	myeospace_user	Euspace	myeospace_user@demo.com