# Intelligent Claims System

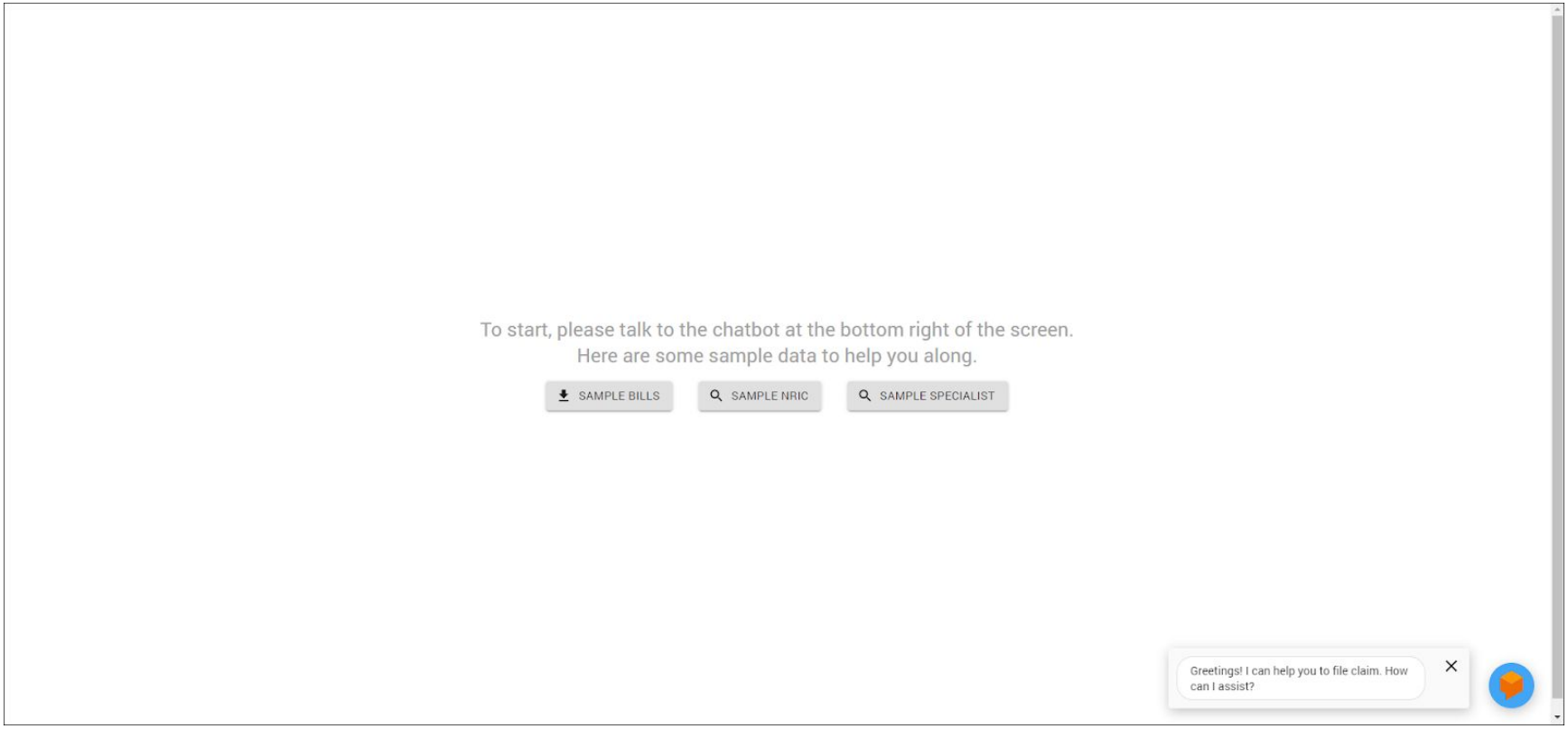
User Guide

## 1. Chatbot

Once the application is running, the chatbot can be accessed by going to “http://127.0.0.1:5001” on your browser. Note that this assumes that the Docker host is 127.0.0.1. It may differ based on your configuration.

# 1.1 Overview

You should see this when you land on the page



### 1.1.1 Sample Data

These are data, like valid NRIC numbers, and specialists that you will need in order to complete a claim submission.

**Sample Bills**

During the claim process, you will be asked to upload your bill. For the scope of the project, we only support a fixed number of formats for bills. This contains a zip file of supported bills.

**Sample NRIC**

These are NRIC numbers that are associated with insurance policies in the system. When prompted, pick any one of these NRICs to enter.

**Sample Specialist**

These are known specialists within the system. When prompted for a specialist name or doctor, pick any one from this list.

### 1.1.2 Chatbot Interface

This is the chatbot interface, where you talk to the bot.

## 1.2 Sample Chat Flow

Here is an example of how a typical flow looks like. Note that the flow may differ based on user input.

**Bot:**
Hello there! Do you know that you can file pre and post hospitalisation claim here with me?
You can say "I want to submit a claim" to start the claim process.

**User:**
I want to submit a claim

**Bot:**
Can I have your NRIC number to identify your policy?

*Note: you can retrieve a list of valid NRICs from the sample data provided.*

**User:**
S9252052M

**Bot:**
Please enter the numeric OTP sent to the mobile number registered with your policy account.

*Note: This is only simulated. You can enter any input here.*

**User:**
123456

**Bot:**
Thank you Miracle White for the OTP verification. Are the bills related to earlier hospitalisation, surgery, dialysis, or cancer treatment?

**User:**
Yes

**Bot:**
Miracle White, Have you paid these bills in full?

**User:**
Yes

**Bot:**
Please prepare and upload your final bill and receipts, with supporting medical report and, bank statement for claim payment

*A popup will appear, to prompt you to upload your bill. Upload one of the bills from the sample data provided.*

**Bot:**
Please provide a bit more information about this bill. For example: Stitch removal, or physiotherapy

**User:**
Ok

**Bot:**
Can you provide the name of specialist, or doctor name you have visited for this claim?

*Note: you can retrieve a list of valid specialists from the sample data provided*

**User:**
Dr Goh

**Bot:**
When is the admission date of the related earlier hospitalisation?

**User:**
Last tuesday

**Bot:**
Claim submitted. Reference: 141260. This acceptance is subject further assessment. Additional information may be required for claim approval.

The system will then have received your claim.

# 2. Dashboard

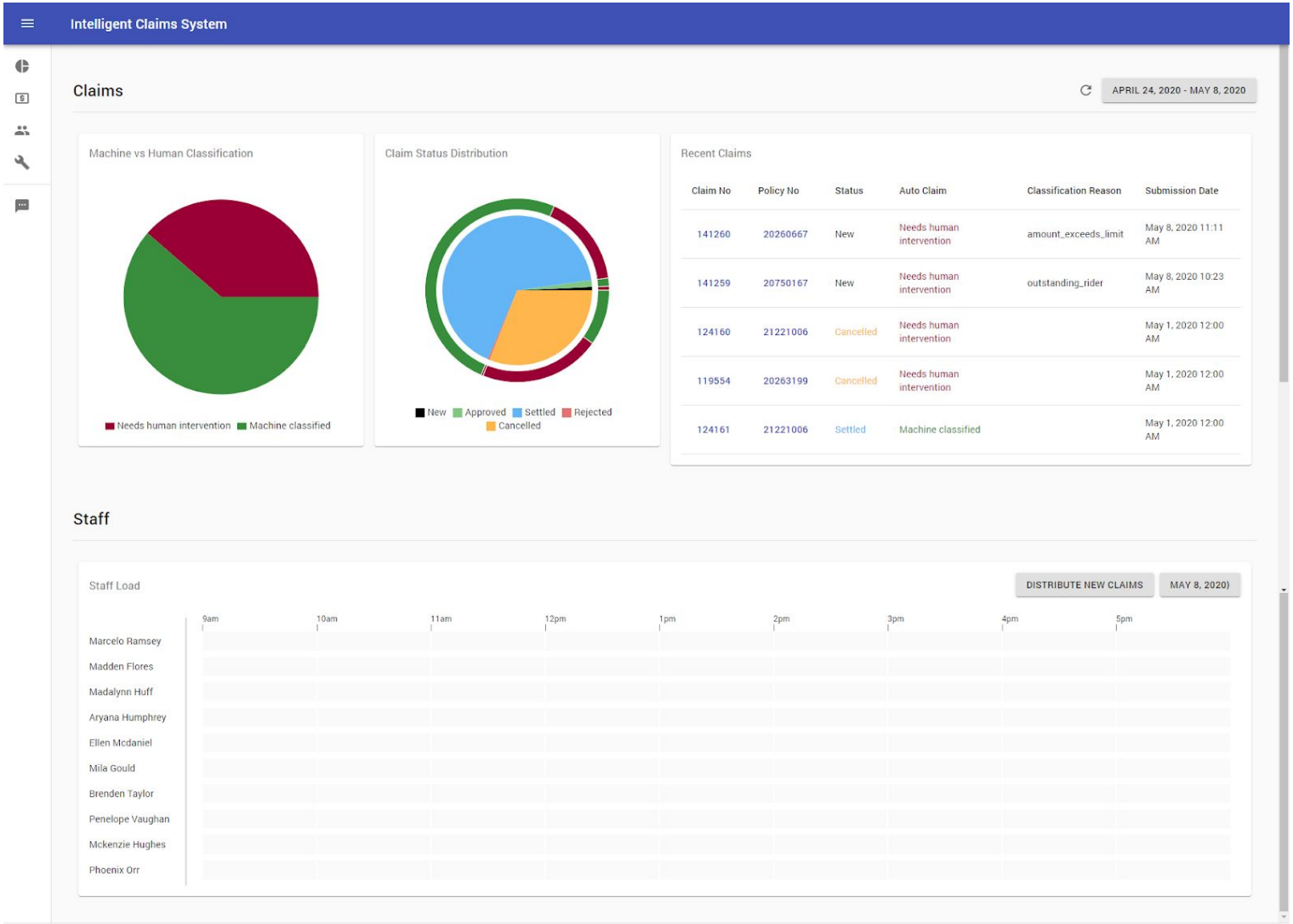
Once the application is running, the chatbot can be accessed by going to “http://127.0.0.1:9001” on your browser. Note that this assumes that the Docker host is 127.0.0.1. It may differ based on your configuration.

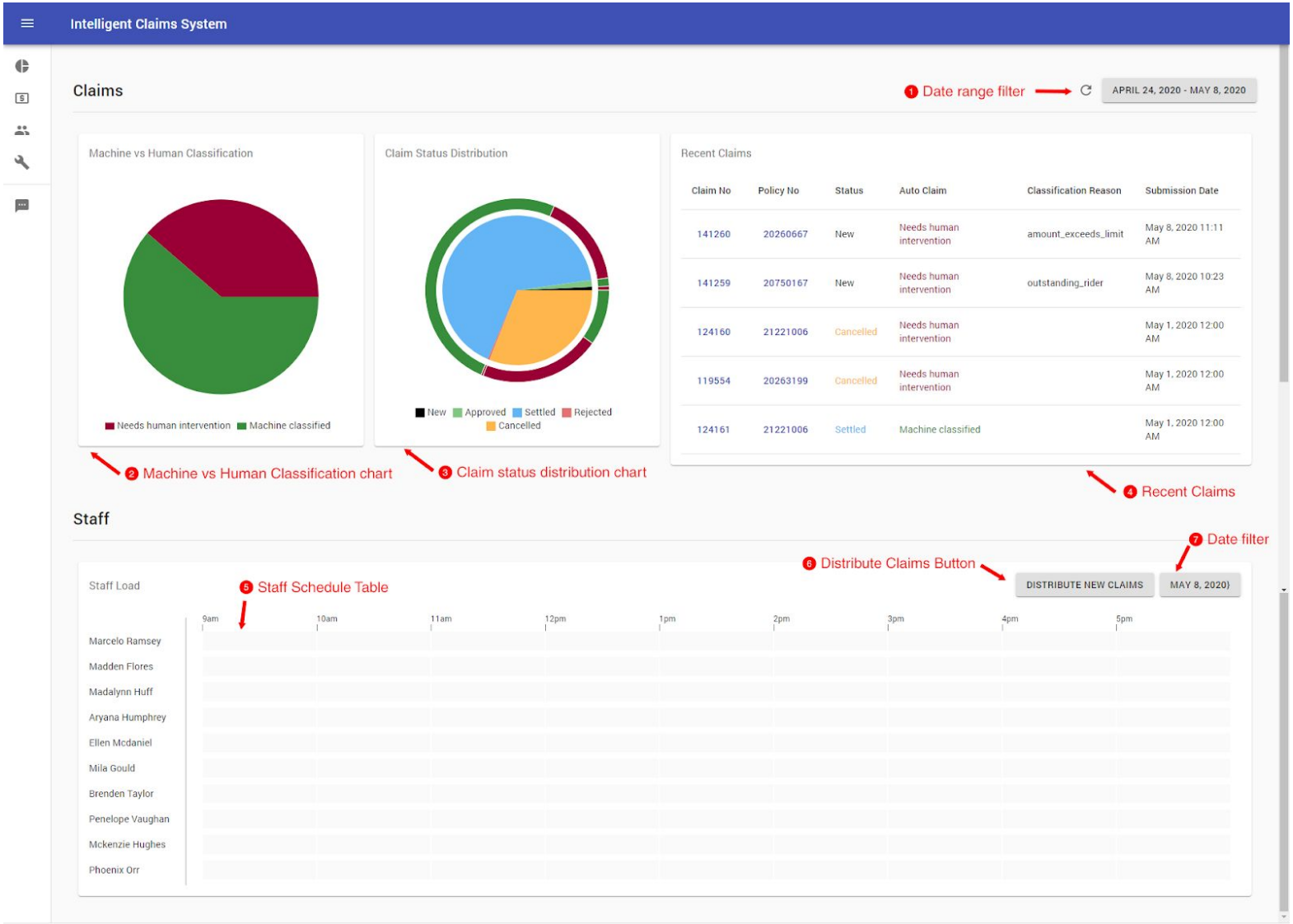
The dashboard gives you an overview of the system status. You can see how many claims are automatically approved by the system. If it is not approved, a reason will be given. You can view claim / policy details to compare the accuracy of the classification system.

You can also view which claims are being assigned which staff. Each staff’s leave can also be managed on the dashboard.

# 2.1 Homepage

You should see this when you land on the page:




Intelligent Claims System
Claims
1 Date range filter
APRIL 24, 2020 - MAY 8, 2020
Machine vs Human Classification
Needs human intervention
Machine classified
Claim Status Distribution
New
Approved
Settled
Rejected
Cancelled
Recent Claims
Claim No
Policy No
Status
Auto Claim
Classification Reason
Submission Date
141260
20260667
New
Needs human intervention
amount_exceeds_limit
May 8, 2020 11:11 AM
141259
20750167
New
Needs human intervention
outstanding_rider
May 8, 2020 10:23 AM
124160
21221006
Cancelled
Needs human intervention
May 1, 2020 12:00 AM
119554
20263199
Cancelled
Needs human intervention
May 1, 2020 12:00 AM
124161
21221006
Settled
Machine classified
May 1, 2020 12:00 AM
2 Machine vs Human Classification chart
3 Claim status distribution chart
4 Recent Claims
Staff
7 Date filter
6 Distribute Claims Button
DISTRIBUTE NEW CLAIMS
MAY 8, 2020)
Staff Load
5 Staff Schedule Table
9am
10am
11am
12pm
1pm
2pm
3pm
4pm
5pm
Marcelo Ramsey
Madden Flores
Madalynn Huff
Aryana Humphrey
Ellen Mcdaniel
Mila Gould
Brenden Taylor
Penelope Vaughan
Mckenzie Hughes
Phoenix Orr

### 2.1.1 Date Range Filter

This is a date filter that can be used to filter the data that is fed into the “Machine vs Human Classification” chart, the “Claim Status Distribution” chart, and the “Recent Claims” table. Date here refers to the submission date.

### 2.1.2 Machine vs Human Classification chart

This chart shows the distribution of a classification status across claims. The classification status can either be “Pending classification”, “Machine classified”, or “Needs human intervention”.

- Pending classification - These are claims that are not yet picked up by the claim classifier
- Machine classified - These are claims that have been automatically approved by the claim classifier
- Needs human intervention - These are claims that the classifier rejected. Rejection reasons are provided. A human will then need to look at the claim manually to decide if it should really be rejected.

### 2.1.2 Claim Status Distribution Chart

The inner pie chart shows the distribution of statuses across claims of a claim. Statuses can be “New”, “Pending”, “Approved”, “Rejected”, “Settled”, or “Cancelled”.

The outer pie chart shows the distribution of classification statuses within each status. For example, how many claims within “Approved” are “Machine classified” vs “Needs human intervention”.

### 2.1.3 Recent Claims

These are the 5 most recent claims based on the date range filter.

### 2.1.5 Staff Schedule Table

This shows the daily schedule of each staff.

### 2.1.6 Distribute Claims Button

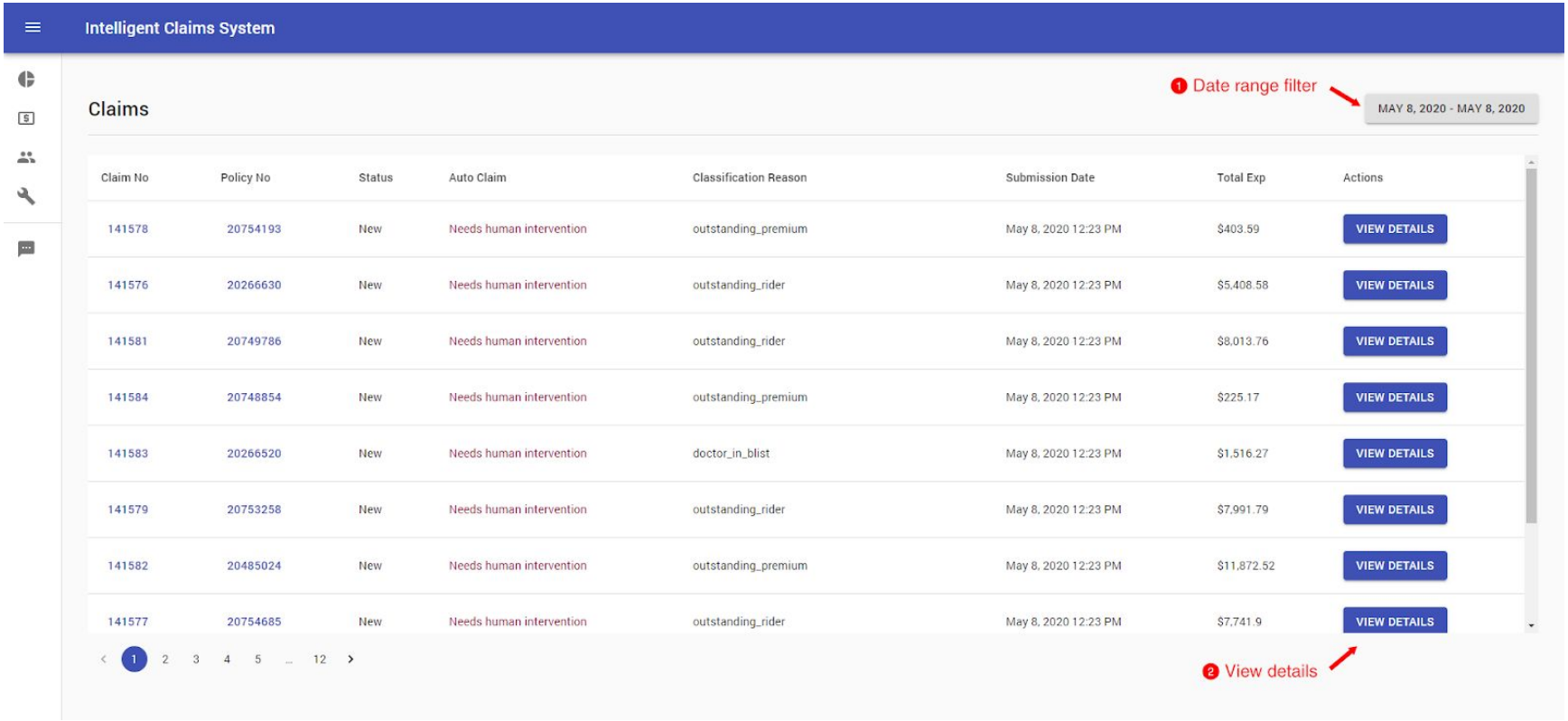
Click on this button to trigger a distribution job. Only claims that have status as “New”, and have been marked “Needs human intervention” will be distributed.

### 2.1.7 Date Filter

This is to help navigate to other dates to show on the staff schedule table

## 2.2 Claims List

The claims list shows all the claims in the system, filterable by their submission date.



### 2.2.1 Date range filter

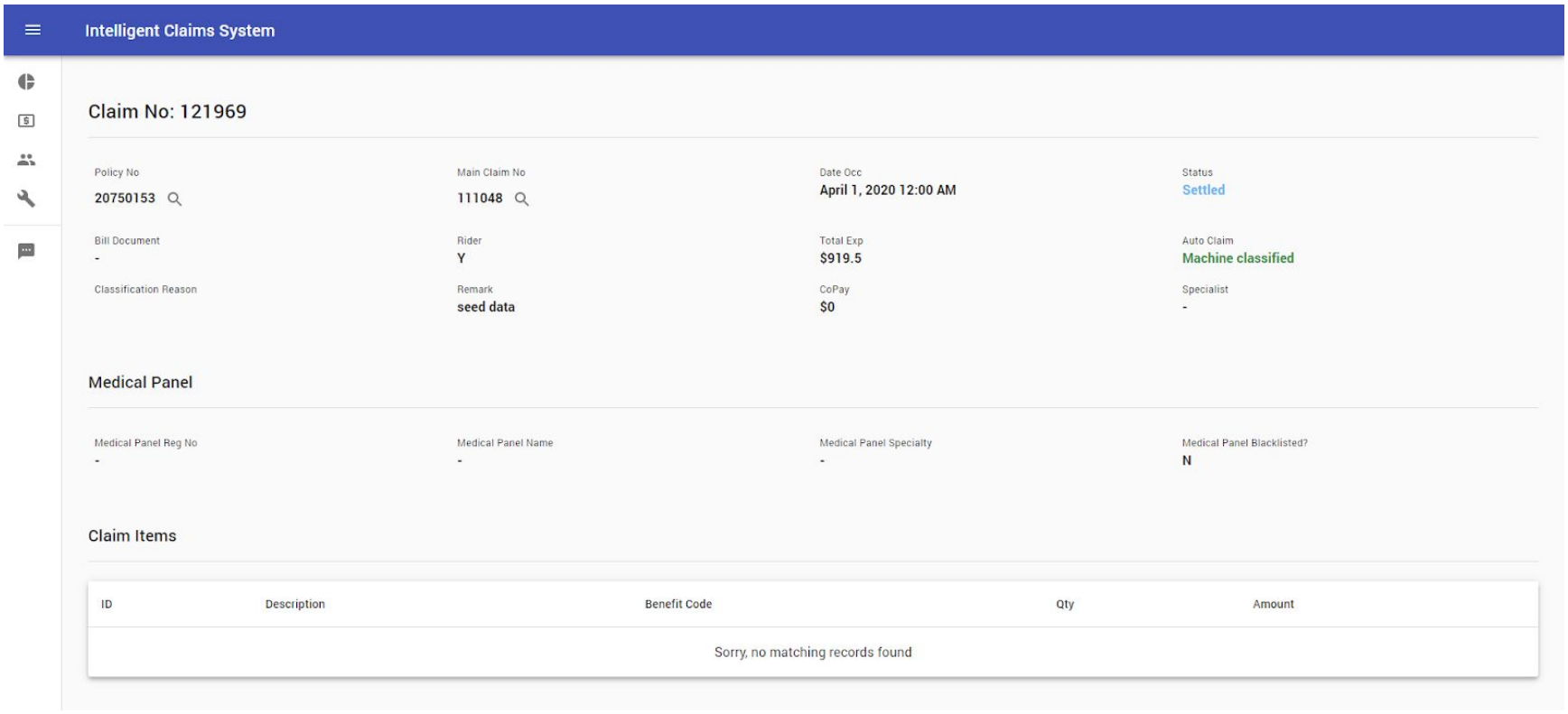
This is a date filter that can be used to filter which claims are shown on this page. Date here refers to the submission date of the claims.

### 2.2.2 View Details Button

You can click on the “View details” button on each claim to view it’s details.

# 2.3 Claim Details

This page shows the details of a claim.




## 2.3.1 Overview of properties

Here is a brief explanation of each property you see on the screen:

**Policy No**
This is the policy no against which the claim is made. You can click on the icon beside the Policy No to view the details of the policy.

**Main Claim No**
This is the claim no of the parent claim, if any. You can click on the icon beside the Main Claim No. to view the details of the parent claim.

**Date Occ**
Date of hospital / medical bill

**Status**
Status of a claim. It can be “New”, “Pending”, “Approved”, “Rejected”, “Settled”, or “Cancelled”.

**Bill Document**
Download link to the bill document

**Rider**
Whether the policy has a rider plan

**Total Exp**
Total amount of the medical bill

**Auto Claim**
Classification status of the claim. It can be “Pending classification”, “Machine classified”, or “Needs human intervention”.

**Classification Reason**
If a claim is classified as “Needs human intervention”, the reason will be stated here

**Remark**
Generic remarks

**CoPay**
How much the insured needs to pay based on the CoPay scheme. (This is outside the scope of the project.)

**Specialist**
The name or registration no of the visited specialist

**Medical Panel Reg No**
Registration no of the visited specialist

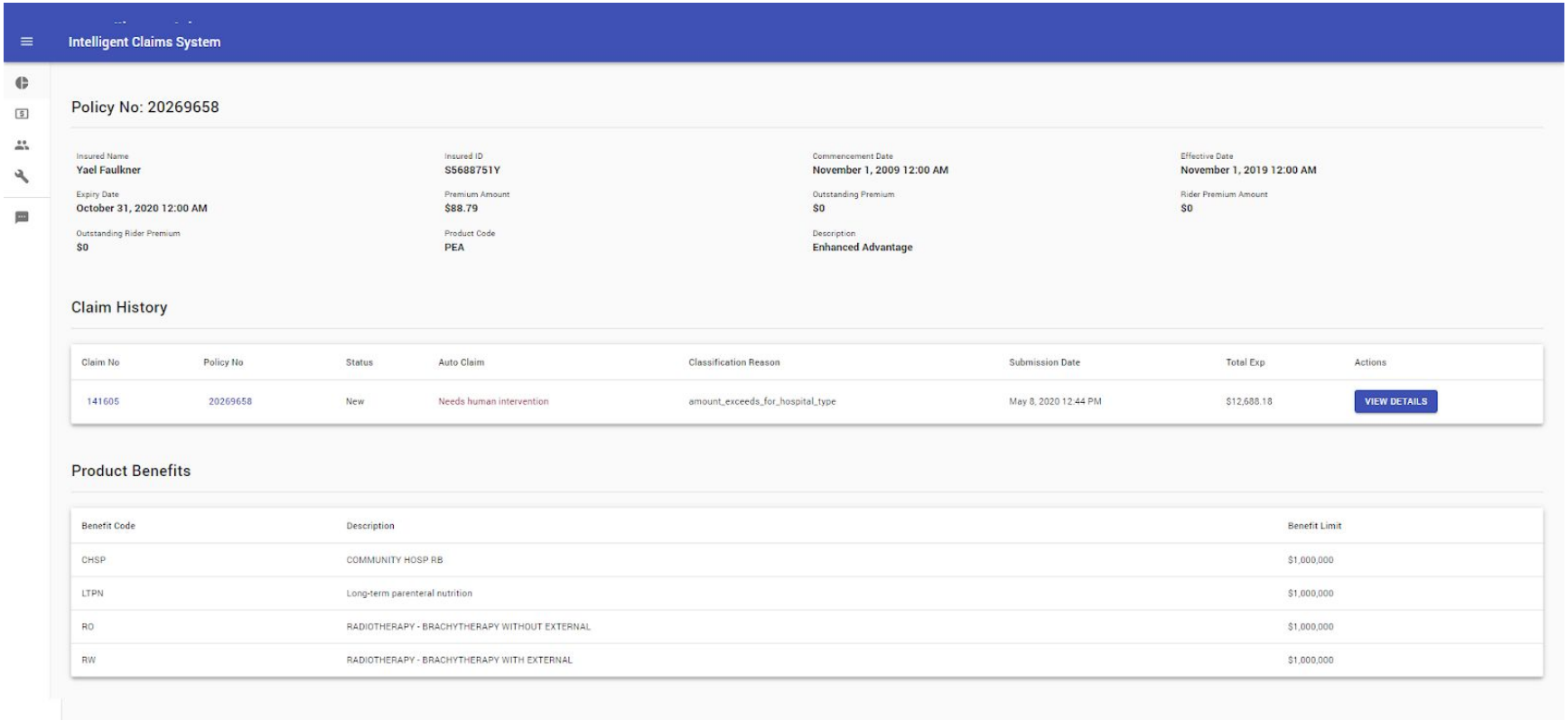
**Medical Panel Name**
Name of the specialist. This is also sometimes the registration number, when data is not available

**Medical Panel Blacklisted**
Whether the specialist is blacklisted

**Claim Items**
Line item within the claim

# 2.4 Policy Details

This page shows the details of a policy.




## 2.4.1 Overview of properties

**Insured Name**
Name of insured person

**Insured ID**
NRIC of insured person

**Commencement Date**
Date the policy commenced

**Effective Date**
Date the policy is effective. This gets refreshed every policy year.

**Expiry Date**
Date the policy current policy year will end.

**Premium Amount**
Monthly premium fee

**Outstanding Premium**
Owed premium amount

**Rider Premium Amount**
Monthly premium fee for the rider plan, if any

**Outstanding Rider Premium**
Owed rider premium amount

**Product Code**
Internal product code for the policy

**Description**

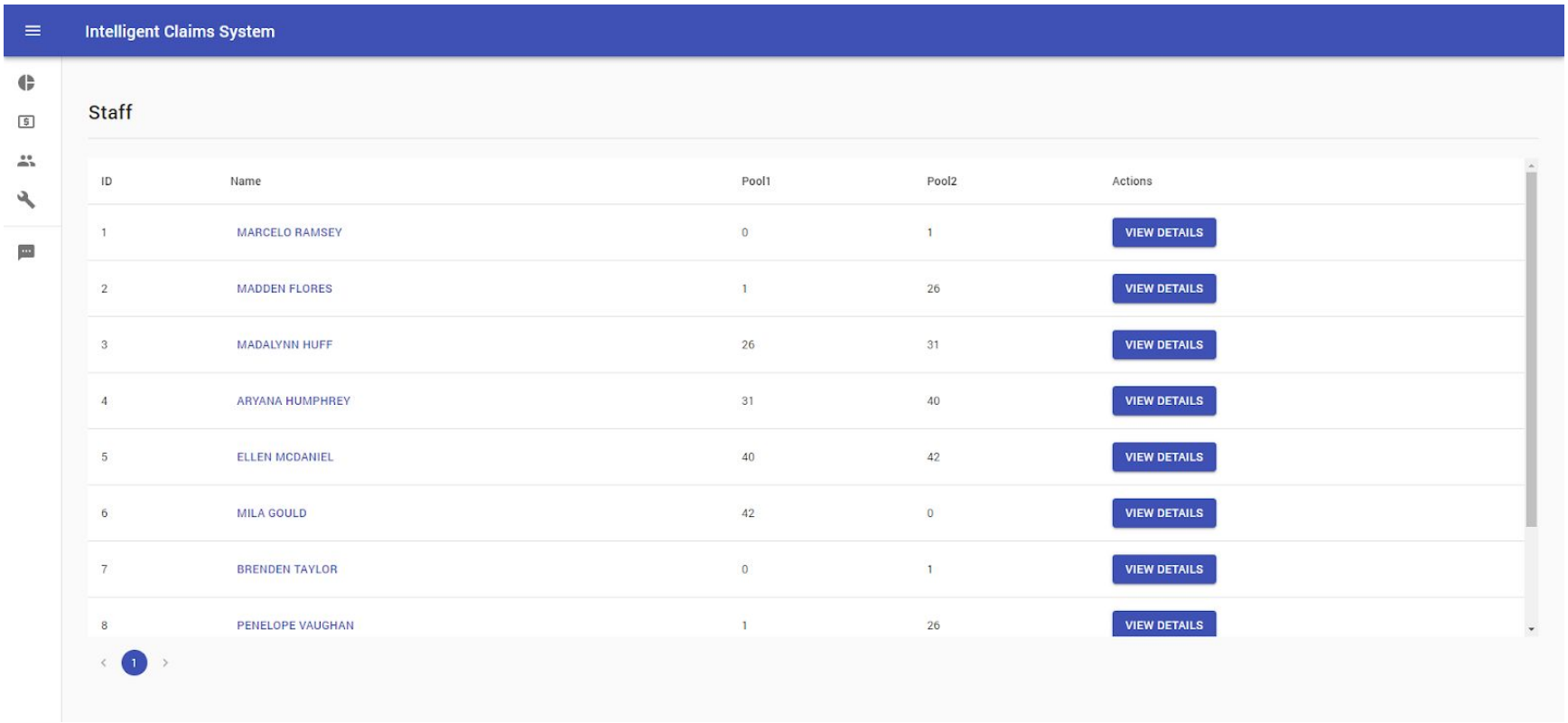
General description

**Claim History**
All claims made under this policy

**Product Benefits**
Itemised benefits for this policy

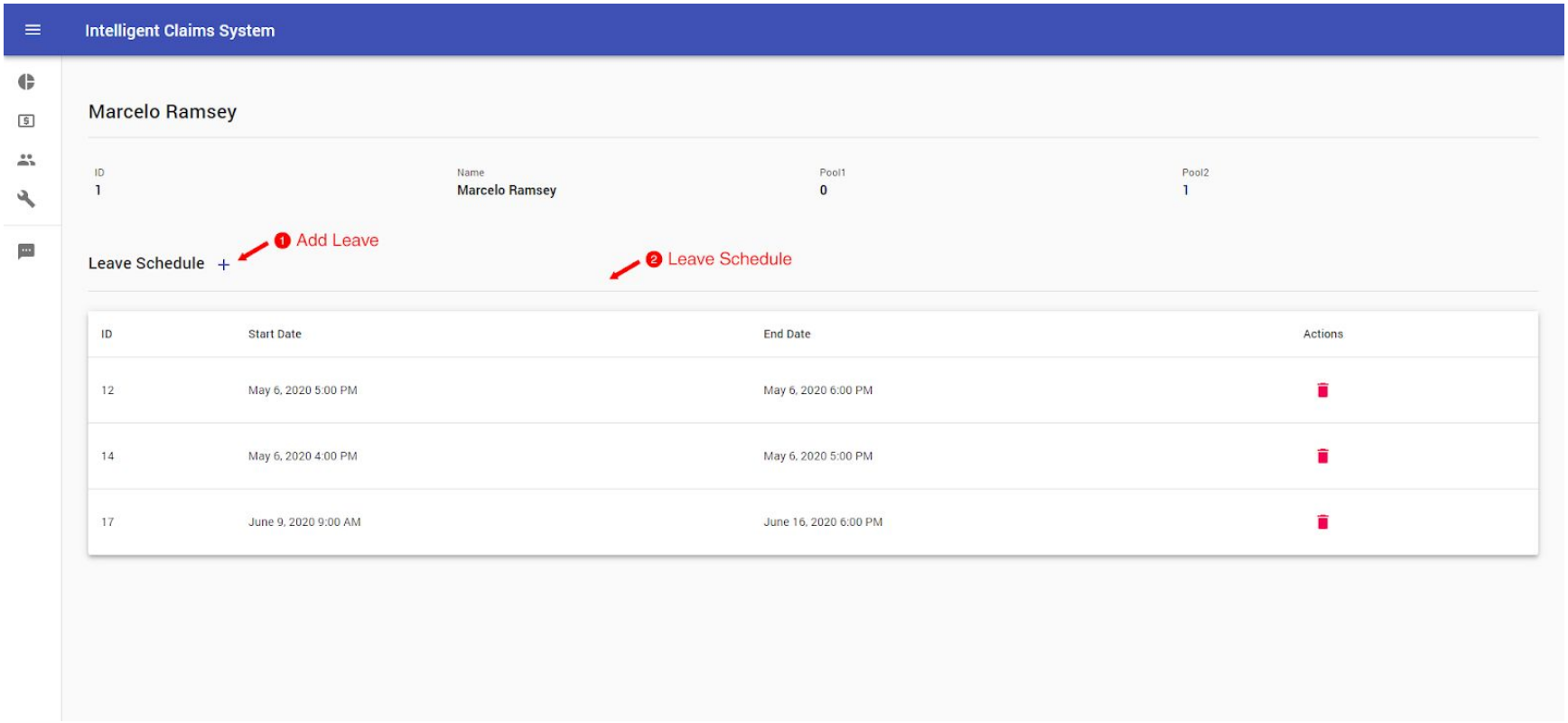
# 2.5 Staff List

This page shows all the staff within the company.



## 2.5 Staff Details

This page shows the details of a staff and his leave schedule



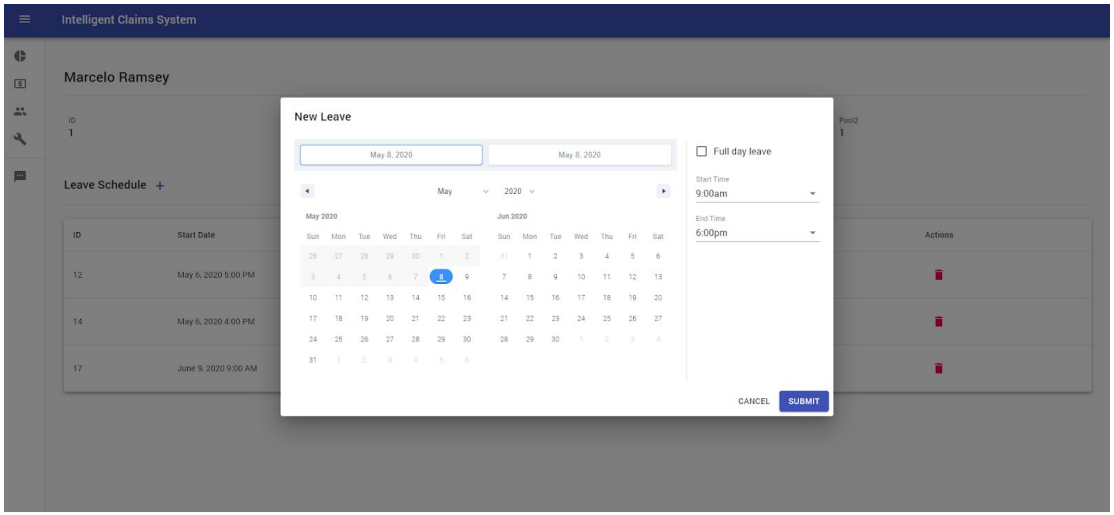
## 2.6.1 Overview of properties

**ID**
ID of the staff

**Name**
Name of the staff

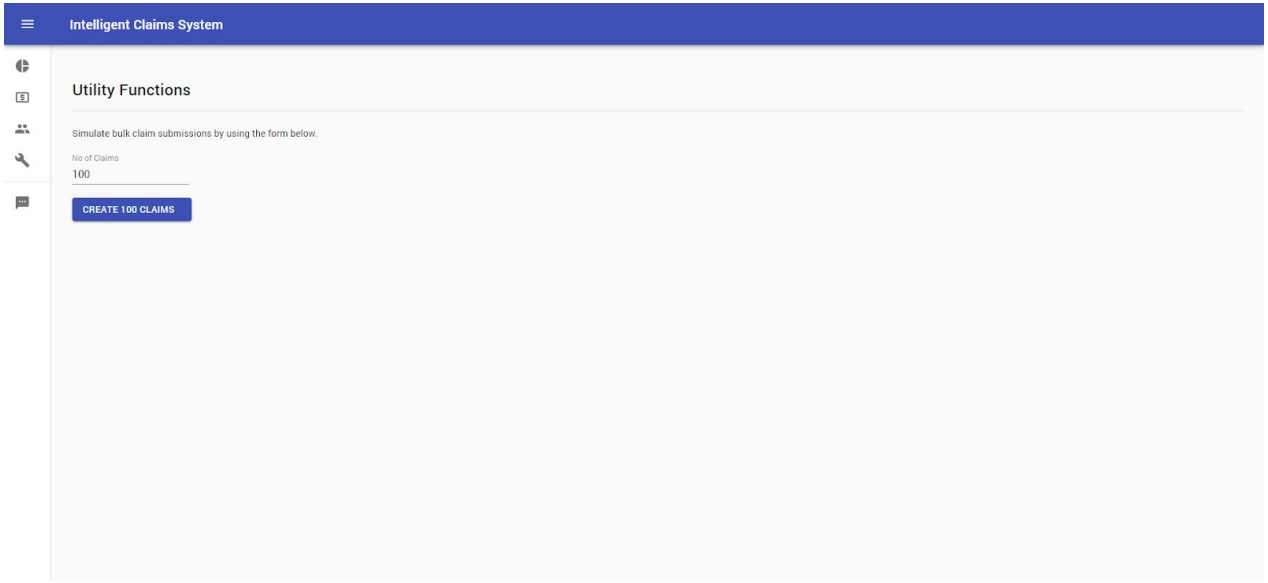
## 2.6.2 Add Leave button

Clicking on this button will show a leave form, to add a leave for the staff.



### 2.6.3 Leave Schedule

These are the leave that a staff currently has.

## 2.7 Utility Functions

This page contains the utility function to simulate randomised claims. You can input up to 300 claims, and once clicked, random claims will be input into the system. You can then go to the homepage to monitor the classification progress. Note that depending on the number of cases created, classification may take up to 5 minutes. You will need to press the reload button on the homepage to see the progress.