

Outlier Detection Reporting - CWINS

Outlier Detection Algorithm is run on a particular form submission/ question_id. The result of the data can be directly consumed by CommCare Platform.

How to create report

Once the outlier detection tool is run and cases are updated in CommCare, we compile the project space's worker outlier detection report. Please note you have to be the admin of the project space to be able to create this report.

Navigate to the configurable reports page. The URL should have the following format:

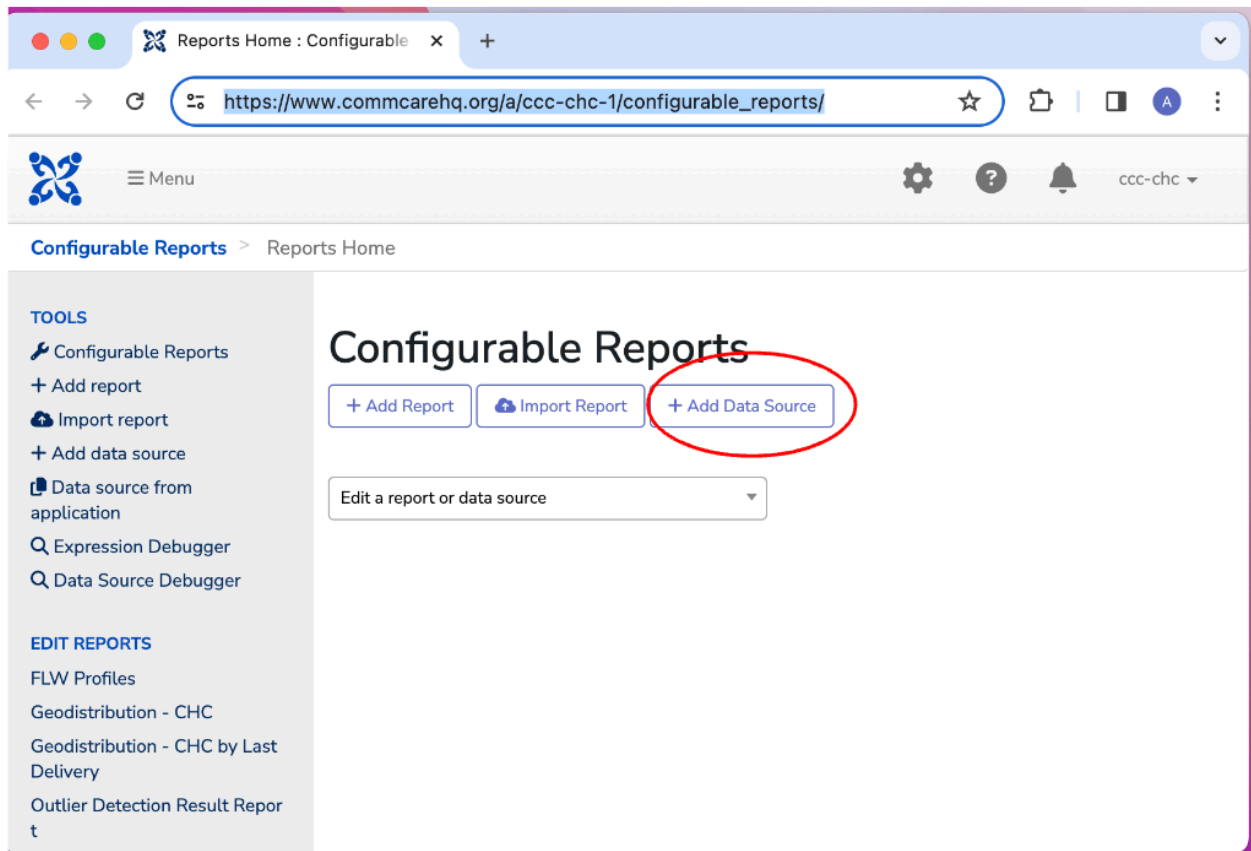
https://www.commcarehq.org/a/YOUR_PROJECT_DOMAIN_NAME/configurable_reports/.

Replace *YOUR_PROJECT_DOMAIN_NAME* in the URL with the domain name where you are building the report.

Once there, there are two steps to building the CC outlier detection report: building a CommCare data source and building the CommCare user report.

Building CommCare Data Source

1. Click on Create Data Source



2. For the data source configuration, make sure the following fields have the value specified:

Unset

Table Id: outlier_detection_results

Unset

Sourceid : cases

Unset

Data Source Display Name : outlier_detection_results

Unset

```
Base item expression : {}
```

Unset

Configured filter :

```
{
  "type": "boolean_expression",
  "operator": "eq",
  "expression": {
    "type": "property_name",
    "property_name": "type",
    "datatype": null
  },
  "property_value": "outlier_detection_results",
  "comment": null
}
```

Unset

Configured indicators :

```
[
  {
    "type": "expression",
    "column_id": "name",
    "display_name": "name",
    "datatype": "string",
    "expression": {
      "type": "property_path",
      "property_path": [
        "name"
      ],
      "datatype": null
    },
    "is_nullable": true,
  },
]
```

```

    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "case_type",
    "display_name": "case_type",
    "datatype": "string",
    "expression": {
      "type": "property_path",
      "property_path": [
        "type"
      ],
      "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "closed",
    "display_name": "closed",
    "datatype": "string",
    "expression": {
      "type": "property_path",
      "property_path": [
        "closed"
      ],
      "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "closed_by_user_id",

```

```

    "display_name": "closed_by_user_id",
    "datatype": "string",
    "expression": {
      "type": "property_path",
      "property_path": [
        "closed_by"
      ],
      "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "closed_date",
    "display_name": "closed_date",
    "datatype": "datetime",
    "expression": {
      "type": "property_path",
      "property_path": [
        "closed_on"
      ],
      "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "external_id",
    "display_name": "external_id",
    "datatype": "string",
    "expression": {
      "type": "property_path",
      "property_path": [
        "external_id"
      ],
      "datatype": null
    }
  }

```

```

    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "last_modified_by_user_id",
    "display_name": "last_modified_by_user_id",
    "datatype": "string",
    "expression": {
      "type": "property_path",
      "property_path": [
        "user_id"
      ],
      "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "last_modified_date",
    "display_name": "last_modified_date",
    "datatype": "datetime",
    "expression": {
      "type": "property_path",
      "property_path": [
        "modified_on"
      ],
      "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {

```

```

    "type": "expression",
    "column_id": "opened_by_user_id",
    "display_name": "opened_by_user_id",
    "datatype": "string",
    "expression": {
      "type": "property_path",
      "property_path": [
        "opened_by"
      ],
      "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "opened_date",
    "display_name": "opened_date",
    "datatype": "datetime",
    "expression": {
      "type": "property_path",
      "property_path": [
        "opened_on"
      ],
      "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "owner_id",
    "display_name": "owner_id",
    "datatype": "string",
    "expression": {
      "type": "property_path",
      "property_path": [
        "owner_id"
      ]
    }
  }

```

```

    ],
    "datatype": null
  },
  "is_nullable": true,
  "is_primary_key": false,
  "create_index": false,
  "transform": {},
  "comment": null
},
{
  "type": "expression",
  "column_id": "server_last_modified_date",
  "display_name": "server_last_modified_date",
  "datatype": "datetime",
  "expression": {
    "type": "property_path",
    "property_path": [
      "server_modified_on"
    ],
    "datatype": null
  },
  "is_nullable": true,
  "is_primary_key": false,
  "create_index": false,
  "transform": {},
  "comment": null
},
{
  "type": "expression",
  "column_id": "state",
  "display_name": "state",
  "datatype": "string",
  "expression": {
    "type": "property_path",
    "property_path": [
      "doc_type"
    ],
    "datatype": null
  },
  "is_nullable": true,
  "is_primary_key": false,
  "create_index": false,
  "transform": {},
  "comment": null
}

```



```

},
{
  "type": "expression",
  "column_id": "expected_freq",
  "display_name": "expected_freq",
  "datatype": "string",
  "expression": {
    "type": "property_path",
    "property_path": [
      "expected_freq"
    ],
    "datatype": null
  },
  "is_nullable": true,
  "is_primary_key": false,
  "create_index": false,
  "transform": {},
  "comment": null
},
{
  "type": "expression",
  "column_id": "observed_freq",
  "display_name": "observed_freq",
  "datatype": "string",
  "expression": {
    "type": "property_path",
    "property_path": [
      "observed_freq"
    ],
    "datatype": null
  },
  "is_nullable": true,
  "is_primary_key": false,
  "create_index": false,
  "transform": {},
  "comment": null
},
{
  "type": "expression",
  "column_id": "p_value",
  "display_name": "p_value",
  "datatype": "decimal",
  "expression": {
    "type": "property_path",

```

```

        "property_path": [
            "p_value"
        ],
        "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
},
{
    "type": "expression",
    "column_id": "questionid",
    "display_name": "questionid",
    "datatype": "string",
    "expression": {
        "type": "property_path",
        "property_path": [
            "questionid"
        ],
        "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
},
{
    "type": "expression",
    "column_id": "score",
    "display_name": "score",
    "datatype": "decimal",
    "expression": {
        "type": "property_path",
        "property_path": [
            "score"
        ],
        "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,

```

```

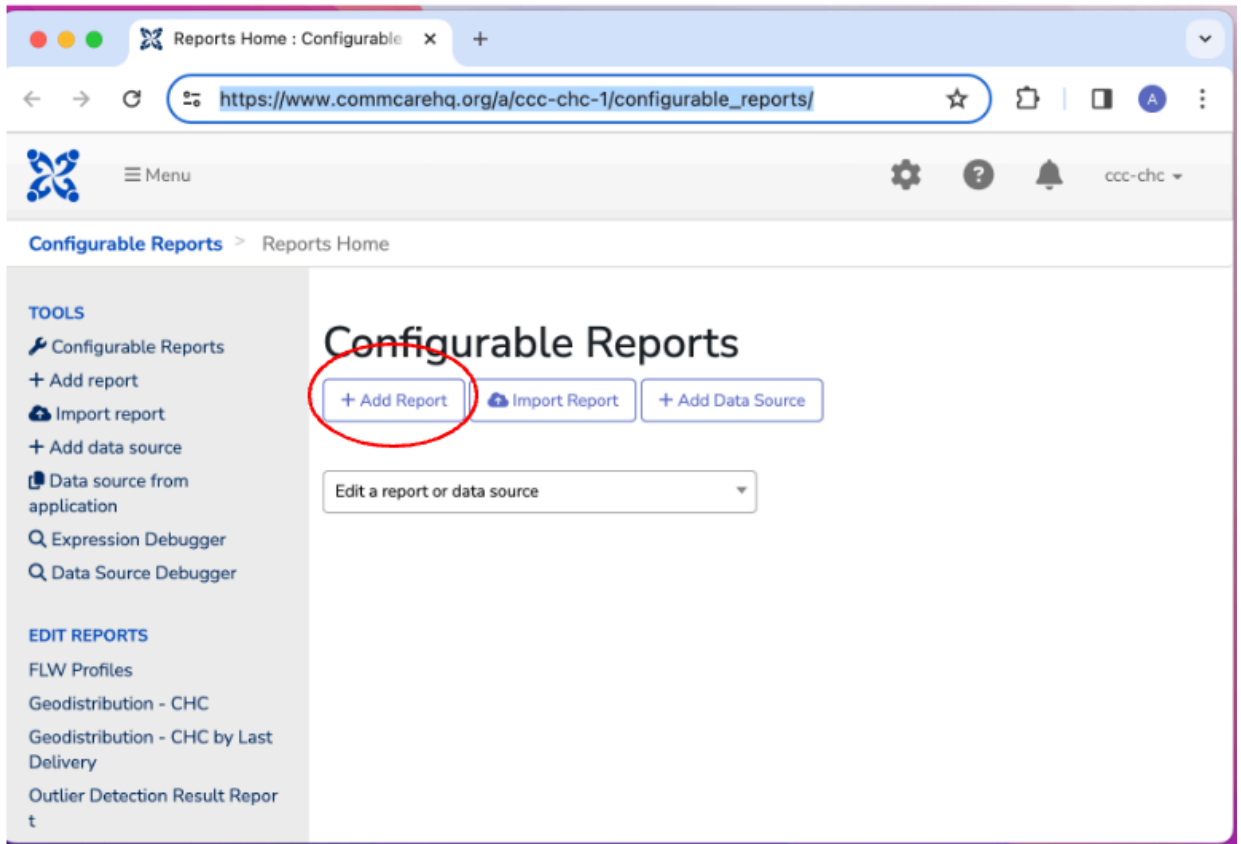
        "transform": {},
        "comment": null
    },
    {
        "type": "expression",
        "column_id": "username",
        "display_name": "username",
        "datatype": "string",
        "expression": {
            "type": "property_path",
            "property_path": [
                "username"
            ],
            "datatype": null
        },
        "is_nullable": true,
        "is_primary_key": false,
        "create_index": false,
        "transform": {},
        "comment": null
    },
    {
        "type": "expression",
        "column_id": "count",
        "display_name": "count",
        "datatype": "small_integer",
        "expression": {
            "type": "constant",
            "constant": 1
        },
        "is_nullable": true,
        "is_primary_key": false,
        "create_index": false,
        "transform": {},
        "comment": null
    }
]

```

3. Click the “Save” button.

Building CommCare User Configurable Report

1. Navigate to the configurable reports screen, click on “Add Report” option



2. For the report configuration, make sure the following fields have the value specified:

Unset

`Config id : outlier_detection_results`

Unset

`Title : Outlier Detection Results`

Unset

Visible To : all users

Unset

Aggregation columns :
[
"doc_id"
]

Unset

Filters:
[
 {
 "field": "closed",
 "slug": "closed",
 "display": "Closed",
 "type": "dynamic_choice_list",
 "datatype": "string",
 "show_all": true,
 "choice_provider": {},
 "ancestor_expression": {}
 },
 {
 "field": "owner_id",
 "slug": "owner_id",
 "display": "Case Owner",
 "type": "dynamic_choice_list",
 "choice_provider": {
 "type": "owner"
 },
 "datatype": "string",
 "show_all": true,
 "ancestor_expression": {}
 },
 {
 "field": "questionid",
 "slug": "questionid",
 "display": "Question id",
 "type": "dynamic_choice_list",

```

        "datatype": "string",
        "show_all": true,
        "choice_provider": {},
        "ancestor_expression": {}
    },
    {
        "field": "username",
        "slug": "username",
        "display": "username",
        "type": "dynamic_choice_list",
        "datatype": "string",
        "show_all": true,
        "choice_provider": {},
        "ancestor_expression": {}
    }
]

```

Unset

```

Columns :
[
  {
    "format": "default",
    "aggregation": "simple",
    "field": "username",
    "column_id": "column_0",
    "type": "field",
    "display": "Username",
    "transform": {
      "type": "custom",
      "custom_type": "short_decimal_display"
    },
    "sortable": false,
    "width": null,
    "css_class": null,
    "calculate_total": false,
    "description": null,
    "visible": true
  },
  {
    "format": "default",
    "aggregation": "simple",

```

```

    "field": "questionid",
    "column_id": "column_1",
    "type": "field",
    "display": "Question ID",
    "transform": {
        "type": "custom",
        "custom_type": "short_decimal_display"
    },
    "sortable": false,
    "width": null,
    "css_class": null,
    "calculate_total": false,
    "description": null,
    "visible": true
},
{
    "format": "default",
    "aggregation": "simple",
    "field": "score",
    "column_id": "column_2",
    "type": "field",
    "display": "Score",
    "transform": {
        "type": "custom",
        "custom_type": "short_decimal_display"
    },
    "sortable": false,
    "width": null,
    "css_class": null,
    "calculate_total": false,
    "description": null,
    "visible": true
},
{
    "format": "default",
    "aggregation": "simple",
    "field": "p_value",
    "column_id": "column_3",
    "type": "field",
    "display": "P Value",
    "transform": {
        "type": "custom",
        "custom_type": "short_decimal_display"
    },

```

```

        "sortable": false,
        "width": null,
        "css_class": null,
        "calculate_total": false,
        "description": null,
        "visible": true
    },
    {
        "format": "default",
        "aggregation": "simple",
        "field": "observed_freq",
        "column_id": "column_4",
        "type": "field",
        "display": "Observed Freq",
        "transform": {
            "type": "custom",
            "custom_type": "short_decimal_display"
        },
        "sortable": false,
        "width": null,
        "css_class": null,
        "calculate_total": false,
        "description": null,
        "visible": true
    },
    {
        "format": "default",
        "aggregation": "simple",
        "field": "expected_freq",
        "column_id": "column_5",
        "type": "field",
        "display": "Expected Freq",
        "transform": {
            "type": "custom",
            "custom_type": "short_decimal_display"
        },
        "sortable": false,
        "width": null,
        "css_class": null,
        "calculate_total": false,
        "description": null,
        "visible": true
    },
    {

```



```
    "format": "default",
    "aggregation": "simple",
    "field": "last_modified_date",
    "column_id": "column_6",
    "type": "field",
    "display": "Modified Date",
    "transform": {
      "type": "custom",
      "custom_type": "short_decimal_display"
    },
    "sortable": false,
    "width": null,
    "css_class": null,
    "calculate_total": false,
    "description": null,
    "visible": true
  }
]
```

Unset

```
Sort expression :
[
  {
    "field": "score",
    "order": "DESC"
  }
]
```

3. Click the “Save” button.

Sort expression*

Distinct on*

Report ID: 5365db39bc80c24d187ce34ef9757774
The System ID of the report (sometimes needed in APIs or other advanced features)

Save

- Once the report is saved, you can view the report by either clicking on the view report button or navigating to the report name from Reports> Report Name.

Dashboard | Reports | Data | Users | Applications | Web Apps | Messaging | Admin

Report "Outlier Detection Results Final" saved!

Configurable Reports > Edit Report

TOOLS

- Configurable Reports
- Add report
- Import report
- Add data source
- Data source from application
- Expression Debugger
- Data Source Debugger

EDIT REPORTS

- FLW Profiles
- Geodistribution - CHC
- Geodistribution - CHC by Last Deliver Y
- Outlier Detection - C-WINS
- Outlier Detection Result Report
- Outlier Detection Results Final**
- Services Delivery Report - Child

EDIT DATA SOURCES

- CCC GPS Study

Configuration | Usage

Config id*: outlier_detection_results_AS

Title*: Outlier Detection Results Final

Visible to*: all users

Description:

Aggregation columns*: { "doc_id" }

Filters*: "field": "username",

View Report | View Data Source | Report Source | Delete Report

Viewing the report

- Once you navigate to the report you have saved, we can add different filters to get the report resultset. Based on the filters set, we can view the report and the relevant information.

Reports > Outlier Detection Results Final

Edit Report

TOOLS

My Saved Reports
Configurable Reports

REPORT BUILDER

Create New Report

REPORTS

FLW Profiles
Geodistribution - CHC
Geodistribution - CHC by Last Delivery
Outlier Detection Result Report
Outlier Detection Results Final
Outlier Detection Results Final (2)
Services Delivery Report - Child
Test Outlier Detection Results
test_meds due

MONITOR WORKERS

Worker Activity
Daily Form Activity
Submissions By Form
Form Completion Time
Case Activity
Form Completion vs. Submission Trends
Project Performance

INSPECT DATA

Submit History
Case List
Case List Explorer
Duplicate Cases

MANAGE DEPLOYMENTS

Application Status
Aggregate User Status
Raw Forms, Errors & Duplicates
Application Error Report

MESSAGING

Report Filters

Closed

[x] [Show All]

Case Owner

[x] [Show All]

Question id

[x] [Show All]

username

[x] [Show All]

Apply

Favorites

Save

Hide Filter Options

Export to Excel

Outlier Detection Results Final

Username	Question ID	Score	P Value	Observed Freq	Expected Freq	Modified Date
	muac_colour	2.674215514902811	0.1310027602038021	[": 0, 'Green': 277, 'Red': 0, 'Yellow': 0]	[": '0.5', 'Green': '269.8', 'Red': '2.4', 'Yellow': '4.3]	2024-01-16T02:18:03.375
	muac_colour	6.571781837377531	0.003679401017031347	[": 1, 'Green': 610, 'Red': 0, 'Yellow': 0]	[": '1.0', 'Green': '594.6', 'Red': '5.5', 'Yellow': '9.7]	2024-01-16T02:18:03.384
	muac_colour	4.210241630727358	0.03296321660183865	[": 1, 'Green': 415, 'Red': 0, 'Yellow': 0]	[": '0.7', 'Green': '405.2', 'Red': '3.6', 'Yellow': '6.5]	2024-01-16T02:18:03.392
	muac_colour	2.734420669181347	0.1242458680785022	[": 0, 'Green': 282, 'Red': 0, 'Yellow': 0]	[": '0.5', 'Green': '274.7', 'Red': '2.4', 'Yellow': '4.4]	2024-01-16T02:18:03.400
	muac_colour	3.046304749751344	0.09427067962464841	[": 0, 'Green': 433, 'Red': 0, 'Yellow': 2]	[": '0.8', 'Green': '423.7', 'Red': '3.8', 'Yellow': '6.7]	2024-01-16T02:18:03.411
	muac_colour	1.691311460388468	0.3046392528484729	[": 1, 'Green': 177, 'Red': 0, 'Yellow': 0]	[": '0.3', 'Green': '173.5', 'Red': '1.5', 'Yellow': '2.7]	2024-01-16T02:18:03.419
	muac_colour	1.298530959067805	0.420284670857645	[": 1, 'Green': 354, 'Red': 1, 'Yellow': 2]	[": '0.6', 'Green': '348.6', 'Red': '3.1', 'Yellow': '5.5]	2024-01-16T02:18:03.428
	muac_colour	2.602284519833008	0.1395372870790128	[": 0, 'Green': 271, 'Red': 0, 'Yellow': 0]	[": '0.5', 'Green': '264.0', 'Red': '2.3', 'Yellow': '4.2]	2024-01-16T02:18:03.444
	muac_colour	2.471319638769494	0.1564571622974897	[": 0, 'Green': 260, 'Red': 0, 'Yellow': 0]	[": '0.4', 'Green': '253.3', 'Red': '2.2', 'Yellow': '4.0]	2024-01-16T02:18:03.454
	muac_colour	0.01595329851130027	0.9970656536976792	[": 0, 'Green': 73, 'Red': 0, 'Yellow': 1]	[": '23, 'Green': '11267, 'Red': '49, 'Yellow': '186]	2024-01-11T19:15:24.714
muac_colour	4.456997324240671	0.02629629329166838	[": 0, 'Green': 290, 'Red': 4, 'Yellow': 11]	[": '0.5', 'Green': '297.5', 'Red': '2.5', 'Yellow': '4.4]	2024-01-16T02:18:03.462	
muac_colour	1.812860049057069	0.2751604022510702	[": 0, 'Green': 203, 'Red': 0, 'Yellow': 0]	[": '0.3', 'Green': '197.6', 'Red': '1.7', 'Yellow': '3.1]	2024-01-16T02:18:03.471	

2. We can do the following with the generated report:

- Export:** We can also export the report to an Excel file.
- Save** the filters settings: We can save the filters of the report and utilize the same filters later on as needed
- Schedule** the saved reports: Saved reports can be scheduled to be received as emails on a set frequency. To know more, follow the steps mentioned [here](#)