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.

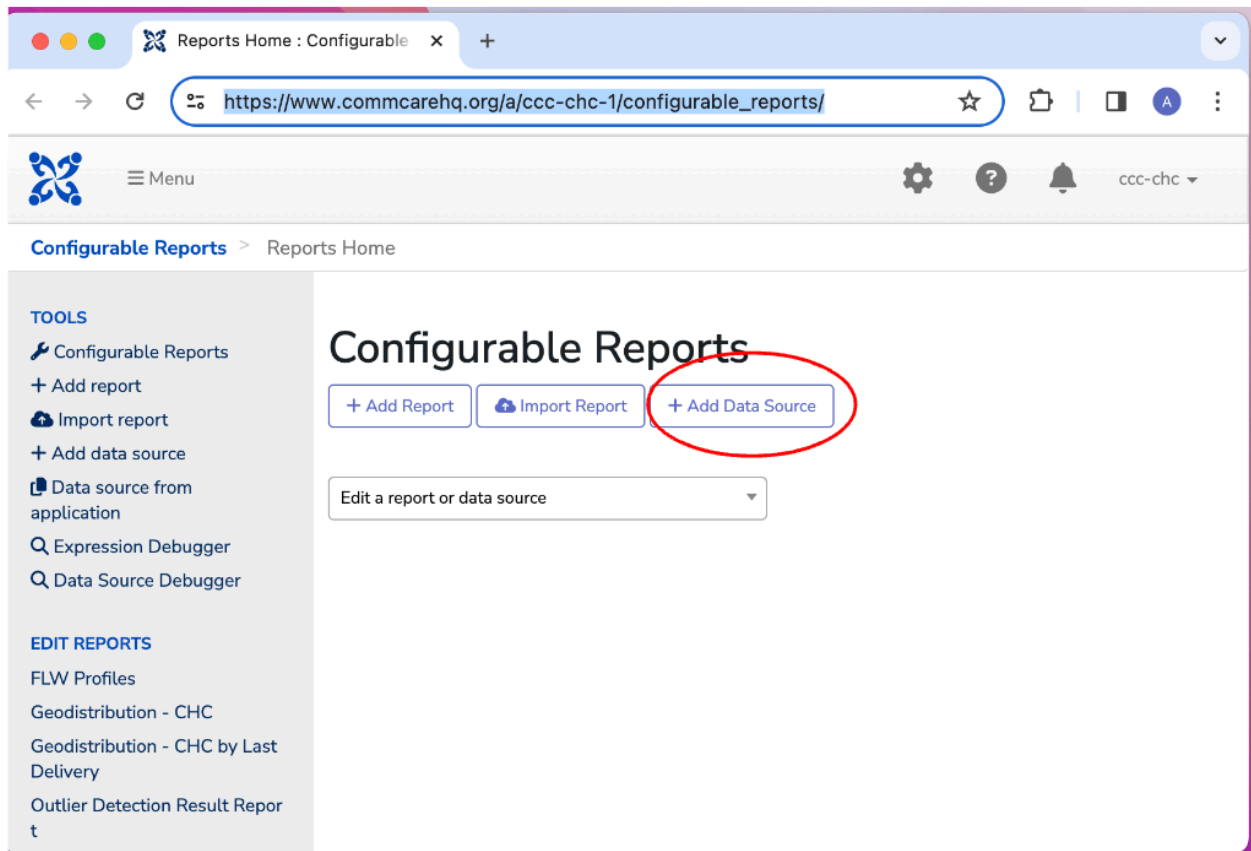Navigate to the configurable reports page. The URL should have the following format: https://www.commcarehq.org/a/YOUR_PROJECT_DOMAIN_NAME/configurable_reports/. Replace *YOUR_PROJECT_DOMAIN_NAME* in the URL with the domain name where you are building the report.

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
```

```json
    },
    "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
  },
  {
```

```json
      "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"
```

```json
      ],
      "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
```

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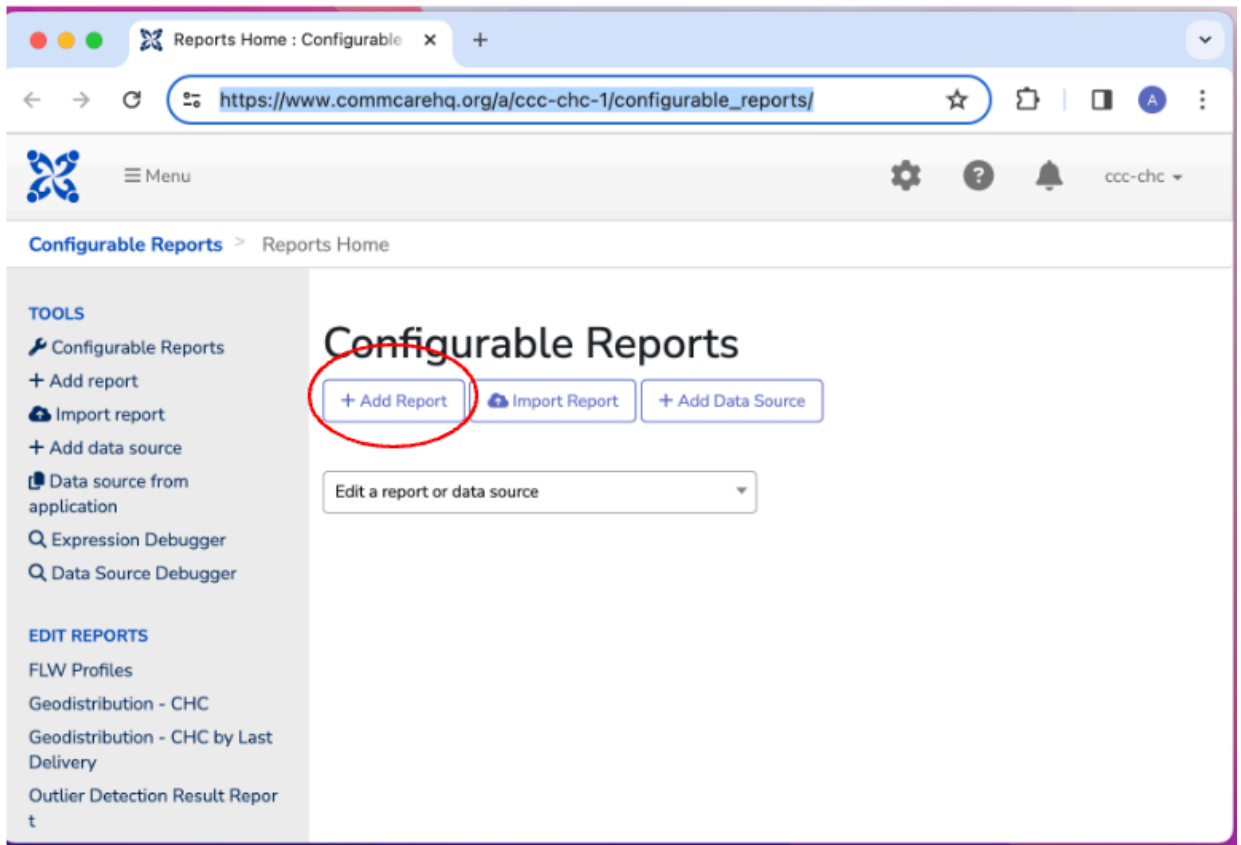
```
      "property_path": [
        "p_value"
      ],
      "datatype": null
    },
    "is_nullable": true,
    "is_primary_key": false,
    "create_index": false,
    "transform": {},
    "comment": null
  },
  {
    "type": "expression",
    "column_id": "questionid",
    "display_name": "questionid",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

```json
      "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
    },
    {
      "type": "expression",
      "column_id": "date_range",
      "display_name": "date_range",
      "datatype": "string",
      "expression": {
        "type": "property_path",
        "property_path": [
```

```
        "date_range"
      ],
      "datatype": null
    },
    "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
    Aggregattion 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": {}
    },
    {
      "field": "date_range",
      "slug": "date_range",
      "display": "Date range",
      "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": true,
        "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": true,
          "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": "date_range",
      "column_id": "column_6",
      "type": "field",
      "display": "Date Range",
      "transform": {
        "type": "custom",
        "custom_type": "short_decimal_display"
      },
      "sortable": true,
      "width": null,
      "css_class": null,
      "calculate_total": false,
      "description": null,
      "visible": true
    },
    {
      "format": "default",
      "aggregation": "simple",
      "field": "last_modified_date",
      "column_id": "column_7",
      "type": "field",
      "display": "Modified Date",
      "transform": {
        "type": "custom",
        "custom_type": "short_decimal_display"
      },
      "sortable": true,
      "width": null,
      "css_class": null,
      "calculate_total": false,
      "description": null,
      "visible": true
    }
  ]
```

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

3. Click the "Save" button.

4. 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.

Viewing the report

1. 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.

2. We can do the following with the generated report:
   a. **Export**: We can also export the report to an Excel file.

b. **Save** the filters settings: We can save the filters of the report and utilize the same filters later on as needed
c. **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](#)