RocIT Sports Inc.

Where opportunity and preparation greet champions

MGIS 425-01
Instructor Palmer/Lin

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I. Executive Summary

We have created an application in Apex Oracle for a fictional wholesale sporting goods operation. This fictitious business, RocIT Sports Inc. is a generic sporting goods wholesaler that needed a browser-based application that could satisfy the needs of a mid-sized wholesale operation that has recently grown out of its ability to operate using a flat database system.

Our application provides operations managers with the ability to clearly monitor business activity including inbound sales, outbound purchases, inventory levels, and view operational related reports. Managers will also have the capability to add new customers, vendors, sales representatives, and available inventory items. Our goal is to ease the flow of information surrounding this sporting goods wholesaler and provide useful analytics in order to assist RocIT Sports Inc. in becoming more efficient and profitable as a company.

II. Detailed Problem Description

RocIT Sports Inc. is a sporting goods wholesale operation that has expressed the need for a managerial application that will be browser-based and provide operational understanding and analytics for upper management to make more efficient business decisions. In recent times RocIT Sports Inc. has experienced increasing sales within the baseball sporting goods category due to their customer service, accurate and timely shipments, and quality products. Management has since felt the pressure to exceed customer expectations as they have simply grown bigger than the capabilities of their current internal flat database system.

RocIT Sports Inc. has requested that our team develop a database to proficiently view, manipulate, and add detailed information regarding customers, vendors, inventory, and open or closed sales. Along with the basic functionality listed, RocIT Sports Inc requires analytic capabilities in order to maintain an understanding of their growing operations. The analytical functionality including reports, queries, and forms to manipulate operation analytics. Finally, RocIT Sports Inc. has requested that his platform be tailored towards operations management and not the everyday employee and sales associate.

A. Requirement Gathering / Specifications:

The business owner and managers have requested the following requirements for the database.

- Keep detailed information on inventory of the wholesale operation including, but not limited to: id, product name, dimensions, cost, vendor, price, gross margin (computed)
    - Products cannot be sold if there is not sufficient inventory
    - Large amounts of stock information should be able to be added at once due to the high-volume nature of the business
- Keep information on all customers that the operation comes into contact with
    - Enter new customer information
    - Update customer information
- Keep information on all vendors that the operation comes into contact with
    - Enter new vendor information
    - Update vendor information
- Keep detailed information on sales: both pending (unpaid, on credit) and paid. Details of interest include sale id, total price, sale line items, credit terms, date/time, date/time of payment due, interest accrued, payment status
- Produce information on gross margin by product and time period
- Produce inventory information and order volume information

B. Project Management Plan

Our team has discussed the following workflow to complete our database application efficiently and accurately within the required timeframe:

I. Plan database entities and required attributes exhaustively
II. Develop Entity Relationship Diagram
III. Create Oracle Apex workspace and authorise all user accounts
IV. Program tables, attributes, relationships, data types into APEX application
V. Develop / tailor sample data and upload
VI. Simultaneously, create forms for entering the required information
VII. Create reports in order from highest priority to lowest priority
    a. Gross margin by product/time period
    b. Inventory and order volume
    c. New Customer, Vendor, Sales Rep Reports, Current sales, Paid and unpaid orders.
VIII. Develop UI / interface / Dashboard / Operations analytic graphics
IX. Stress Test application

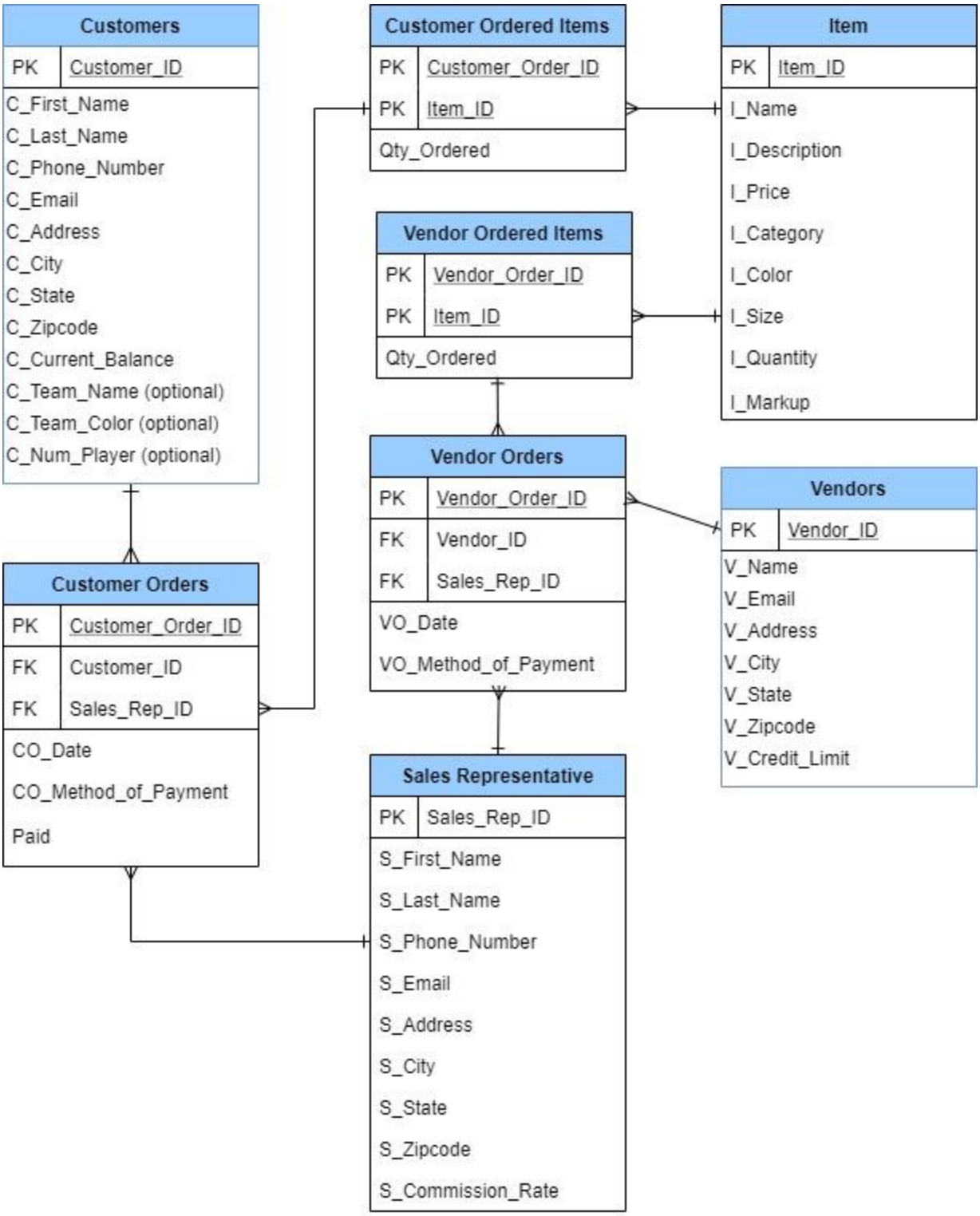
C. Team Roles

Ryan - Team Leader & Project Manager
Stefany - Database planning and Development
Arkia - UI application design
Andrew - Queries and Reports Developer

III. Conceptual and Logical Design

A. Entity Relationship Diagram

There are eight entities needed for our application. The customer table, vendor table, and sales representative tables all contain personal information, respectively, including name, phone number, email, and address information. The sales representative table is our central table when it comes to the different types of orders that we may receive and or place. The Sales_Rep_ID attribute from the sales representative table acts as a link to the customer order table and the vendor order table. When a customer places an order, that order will always have a sales representative attached to the transaction. Conversely, when inventory orders are placed with vendors, a sales representative will also be attached to that type of transaction. The Item table contains all the information about the products RocIT Sports Inc. offers and their availability. Within this table, we will store information such as product name, description, price, category of item, color, size, and quantity on hand. Our customer order items table and vendor order items table operate in a similar fashion as they will respectfully display the item and quantities being sold/purchased during a singular transaction.


Customers
PK Customer_ID
C_First_Name
C_Last_Name
C_Phone_Number
C_Email
C_Address
C_City
C_State
C_Zipcode
C_Current_Balance
C_Team_Name (optional)
C_Team_Color (optional)
C_Num_Player (optional)
Customer Ordered Items
PK Customer_Order_ID
PK Item_ID
Qty_Ordered
Item
PK Item_ID
I_Name
I_Description
I_Price
I_Category
I_Color
I_Size
I_Quantity
I_Markup
Vendor Ordered Items
PK Vendor_Order_ID
PK Item_ID
Qty_Ordered
Vendor Orders
PK Vendor_Order_ID
FK Vendor_ID
FK Sales_Rep_ID
VO_Date
VO_Method_of_Payment
Vendors
PK Vendor_ID
V_Name
V_Email
V_Address
V_City
V_State
V_Zipcode
V_Credit_Limit
Customer Orders
PK Customer_Order_ID
FK Customer_ID
FK Sales_Rep_ID
CO_Date
CO_Method_of_Payment
Paid
Sales Representative
PK Sales_Rep_ID
S_First_Name
S_Last_Name
S_Phone_Number
S_Email
S_Address
S_City
S_State
S_Zipcode
S_Commission_Rate

B. Normalized Table structure and Data Dictionary

(See Appendix section C for Use-Case Narratives)

C. Expected Queries/Reports/Forms

(See Appendix section A for Screenshots)

- Gross Margin (item & overall)
- Order Volume by date
- Outstanding payment orders
- Paid orders
- Inventory report
- Customer information report
- Vendor information report
- Sales reports
- New Customer reports/form
- New Vendor report/form
- New Sales Rep report/form
- Customer Order report/form
- Vendor Order report/form

IV. Implementation

A. Organization of the Program

The application has the following functions:

- Add new customers, vendors, and sales representatives to the database
- Add customer order
- Add placed orders from vendors
- Display report of all customers, vendors, and sales representatives
- Display inventory

B. Explanation of Each Module

Module	**Description**
Login Page	Asks for a username and password to log into the application.
Dashboard	Charts that illustrate the margin by item, the revenue share by item, and the order volume by date.
Homepage	This is the homepage for employees logging into the site. From this page, one is able to choose from reports or forms via buttons. One can then view all of the specific reports and forms from that selected page.
Forms	This has all of the forms that can be used to input new data into the database.
New Entries Forms	This section of the Forms page allows the user to create new entries for the Customer, Vendor, and Sales Representative tables.
Order Forms	This section of the Forms page allows the user to create new orders for customers, and create an order placed from a vendor. (Vendor Orders and Customer Orders Tables)
Reports	This page lists all the reports that can be created.
Reports	In this section of the Reports page, the user can generate reports on the customers, vendors, and the current inventory.
Sales Reports	In this section of the Reports page, the user can create both sales and vendor sales reports. In both of the sales and vendor reports, queries were used to calculate the order totals. These queries can be found in *Appendix A*.
Orders Report	In this section of the Reports page, the user can view reports on customers' outstanding balances, and view orders that were paid in full. The queries used to create these reports can be found in *Appendix A*.

C. Menu Structure

I. Homepage
   A. Dashboard
   B. Forms
      1. New Customer Form
      2. New Vendor Form
      3. New Sales Representative Form
      4. New Vendor Order Form
      5. New Customer Order Form
   C. Reports
      1. Customer Report
      2. Inventory Report
      3. Vendor Report
      4. Sales Report
      5. Vendor Sales Report
      6. Customer Outstanding Balance Report
      7. Paid-In-Full Orders Report

(See Appendix section D for screenshots of the pages & of the navigation menu)

D. Individual Work

- Ryan: Workspace creation, organized team meetings, data construction, presentation materials, application testing.
- Andrew: Created app, coded queries for reports, built reports and dashboard, input data for tables
- Stefany: Created tables in database, created the navigation & formatting within the application, and created some of the forms & reports.
- Arkia: Created forms and reports, and coded query for report, presentation materials.

E. Program Instructions

- Getting Started/ Logging in
  - Enter Username and Password
  - Click Sign in

- Home Screen Navigation
  - Users will have access to Reports, Forms, and Dashboard by clicking on the respected tab

- Access Reports:
  - Click Reports on home screen
  - Users can toggle between report categories by selecting the different sub-categories
  - Select desired report

- Working Reports (search):
  - Select search criteria via the magnifying drop down
  - Enter search variable and click go

- Manipulate Report Data
  - Click Action drop down and select operation
  - Complete desired inputs
  - Click Apply

- Add New Customer
  - Click Forms
  - Click New Customer Form
  - Fill in all customer information
  - Click Create
  - To view newly created customer, navigate to customer report

- Add New Vendor
  - Click Forms
  - Select New Vendor Form
  - Fill in all Vendor Information
  - Click Create
  - To view newly created customer, navigate to vendor report

- Add New Sales Representative
  - Click Forms
  - Select New Sales Representative Form
  - Fill in all sales representative information
  - Click Create

- Placing Customer Orders
    - Click Forms
    - Select New Customer Order Form
    - Insert Customer ID
    - Select Order Date
    - Choose Method of Payment
    - Insert Sales Representative ID
    - Click Create
    - To view new Customer order, navigate back to the Sales Report

- Placing Vendor Orders
    - Click Forms
    - Select New Vendor Order Form
    - Insert Vendor ID
    - Insert Sales Rep ID
    - Select Order Date
    - Note Method
    - Click Create

- To View Sales Analytics
    - Select Dashboard from the main function bar.

F. Problems Encountered

Initial workspace creation: In the early stages of our project we struggled to first create a workspace due to errors and scheduled maintenance on the Oracle platform. Then we experienced minor friction when authorizing and providing access to all team members to begin working on the application. This provided a minor setback, but due to appropriate time management and scheduling, our ability to provide a completed product in time was not affected.

Data uploading: our team utilized outside sources for random data generation, specifically Mockaroo.com. This decision saved the group time on data generation but created issues when attempting to upload the data to its specific table. Thus, as a team we were forced to go back and clean/augment the data in order for it to be accepted into the APEX platform and our specific tables.

Chart formatting: During the development of our dashboard and construction of the various inlaid charts, our lead programmers struggled with changing the auto-generated labels into a more understandable and efficient format. Through the use of Youtube and experimentation we were able to correct this problem.

G. Project Limitations

Payment Processing/Term Allocation: Due to time constraints our application does not have the physical capability to accept and apply payments to orders or establish payment terms per client i.e. net15, net30, net60. With more time that would be the first implementation launched through an update/upgrade in order to expand the capabilities to close more sales.

Customer Creditworthiness: Currently the application has no way of monitoring or establishing credit ratings to customers. This will be important for RocIT Sports Inc. as they continue to grow their customer base and branch into offering credit limits and payment terms for creditworthy customers.

H. Future Improvements

- Building off of our current managerial application and diversifying our database into a sales-driven, customer relations management application for salesforce usage.
- Expansion on payment methods and payment term options along with overall payment processing.
- Payment Processing capabilities
- Creditworthiness reviews/reports for both customers and vendors.
- Voided or returned orders report.
- Potential mobile interface/application to allow the sales team to operate remotely.

V. Conclusion

A. Summary

Overall, the project went well and as a team, we are proud of the product we have developed for RocIT Sports Inc. This platform still has limitations and room for potential improvements that can advance the application into providing deeper, more intuitive analytics for business managers. If we were able to launch regular updates and offer package upgrades, we believe that our browser-based application could become a fully functional commercial application. Considering the length of time allotted to develop such an intricate application, as a team we feel that we have gained valuable experience and deepened our understanding of Apex and project development.

Our team has displayed the ability to take a real-time problem and develop a solution that could serve on the forefront of wholesale operations, regardless of the product. The combination of our skills and expertise is displayed through the complexity and detail-oriented construction of our database. We also believe that these same skills and expertise are what helped our team overcome obstacles and challenges when necessary.

B. Lessons Learned

- **Team Communication is vital:** Early on, our team developed strong rapport, which greatly aided in the individual progress our team was able to make through the transition into an online platform for the remaining semester.
- **Logic is more important than coding:** Having a detailed understanding of the concepts that you are trying to employ through your application has proven to be more valuable than the physical code written into the program. Through multiple conversations as a team, we were able to augment our initial process ideas and turn them into valuable report-based analytics.
- **ERD is the backbone of a database:** Our team quickly realized that in order to develop and provide a successful product we had to begin with solidifying a strong and well thought out entity relationship diagram. Someone once said, " A good database design will get you through poor programming better than good programming will get you through poor database design."
- **APEX database/application development:** Individually and as a team, we were able to walk away from this experience with a deeper understanding of the Oracle APEX application and the various capabilities this platform has to offer when developing an application for a specific purpose.

Appendix

A. SQL Script Listings

1. Sales Report

```sql
SELECT o.CUSTOMER_ORDER_ID AS "ORDER ID", o.CO_DATE AS "DATE",
o.CUSTOMER_ID AS "Customer ID", o.CO_MOP AS "Method of Payment",
o.SALES_REP_ID AS "SALES REP ID", Sum(Total) AS "ORDER TOTAL"
FROM (SELECT c.CUSTOMER_ORDER_ID, ROUND(SUM(i.I_PRICE * c.QTY_ORDERED * (1 + i.I_MARKUP/100)),2) AS Total
      FROM CUSTOMER_ORDERED_ITEMS c
      INNER JOIN ITEM i ON i.ITEM_ID = c.ITEM_ID
      GROUP BY c.CUSTOMER_ORDER_ID, c.ITEM_ID) derivedRevenue
INNER JOIN CUSTOMER_ORDERS o ON o.CUSTOMER_ORDER_ID = derivedRevenue.CUSTOMER_ORDER_ID
GROUP BY o.CUSTOMER_ORDER_ID, o.CO_DATE, o.CUSTOMER_ID, o.CO_MOP, o.SALES_REP_ID
ORDER BY o.CUSTOMER_ORDER_ID;
```

2. Vendor Sales Report

```sql
SELECT s.VENDOR_ORDER_ID AS "ORDER ID", s.VO_DATE AS "DATE",
s.VENDOR_ID AS "VENDOR ID", s.VO_MOP AS "Method of Payment",
s.SALES_REP_ID AS "SALES REP ID", Sum(Total) AS "ORDER TOTAL"
FROM (SELECT v.VENDOR_ORDER_ID, SUM(i.I_PRICE * v.QTY_ORDERED) AS Total
      FROM VENDOR_ORDERED_ITEMS v
      INNER JOIN ITEM i ON i.ITEM_ID = v.ITEM_ID
      GROUP BY v.VENDOR_ORDER_ID, v.ITEM_ID) calculatedRevenue
INNER JOIN VENDOR_ORDERS s ON s.VENDOR_ORDER_ID = calculatedRevenue.VENDOR_ORDER_ID
GROUP BY s.VENDOR_ORDER_ID, s.VO_DATE, s.VENDOR_ID, s.VO_MOP, s.SALES_REP_ID
ORDER BY s.VENDOR_ORDER_ID;
```

3. Dashboard Queries

a. Margin by Item

```sql
select item_id, (i_markup/100) AS "Markup"
from item
order by i_markup;
```

b. Revenue Share by Item

```sql
SELECT i.item_id, SUM(i.i_price * (1 + i.i_markup/100) * c.qty_ordered) AS "Revenue"
FROM item i
INNER JOIN customer_ordered_items c ON c.item_id = i.item_id
GROUP BY i.item_id;
```

c. Order Volume by Date

```sql
SELECT TO_CHAR(c.co_date, 'MM/DD/YYYY') AS "Date", SUM(i.qty_ordered) AS "Volume"
FROM customer_orders c
INNER JOIN customer_ordered_items i ON i.customer_order_id = c.customer_order_id
GROUP BY c.co_date
ORDER BY c.co_date;
```

4. Gross Margin Query

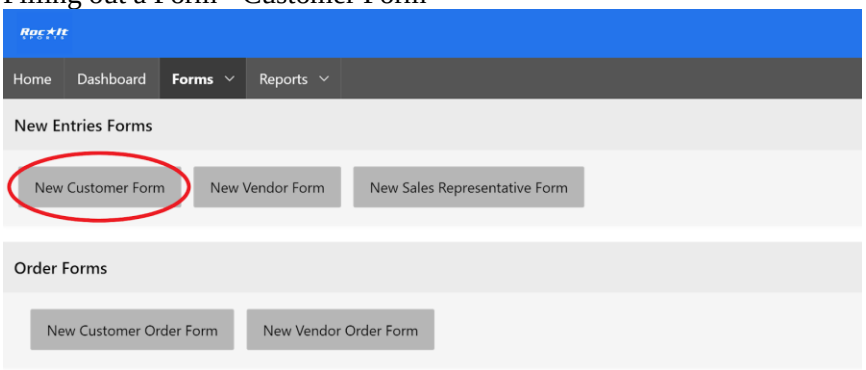
```
DECLARE
    CURSOR r_cursor IS
        SELECT o.CUSTOMER_ORDER_ID AS "ORDER ID", o.CO_DATE AS "DATE",
        o.CUSTOMER_ID AS "Customer ID", o.CO_MOP AS "Method of Payment",
        o.SALES_REP_ID AS "SALES REP ID", Sum(Total) AS "ORDERTOTAL"
        FROM (SELECT c.CUSTOMER_ORDER_ID,
              ROUND(SUM(i.I_PRICE * c.QTY_ORDERED * (1 + i.I_MARKUP/100)),2) AS Total
        FROM CUSTOMER_ORDERED_ITEMS c
        INNER JOIN ITEM i ON i.ITEM_ID = c.ITEM_ID
        GROUP BY c.CUSTOMER_ORDER_ID, c.ITEM_ID) derivedRevenue
        INNER JOIN CUSTOMER_ORDERS o ON o.CUSTOMER_ORDER_ID = derivedRevenue.CUSTOMER_ORDER_ID
        GROUP BY o.CUSTOMER_ORDER_ID, o.CO_DATE, o.CUSTOMER_ID, o.CO_MOP, o.SALES_REP_ID
        ORDER BY o.CUSTOMER_ORDER_ID;

    CURSOR e_cursor IS
        SELECT s.VENDOR_ORDER_ID AS "ORDER ID", s.VO_DATE AS "DATE",
        s.VENDOR_ID AS "VENDOR ID", s.VO_MOP AS "Method of Payment",
        s.SALES_REP_ID AS "SALES REP ID", Sum(Total) AS "ORDERTOTAL"
        FROM (SELECT v.VENDOR_ORDER_ID, SUM(i.I_PRICE * v.QTY_ORDERED) AS Total
        FROM VENDOR_ORDERED_ITEMS v
        INNER JOIN ITEM i ON i.ITEM_ID = v.ITEM_ID
        GROUP BY v.VENDOR_ORDER_ID, v.ITEM_ID) calculatedRevenue
        INNER JOIN VENDOR_ORDERS s ON s.VENDOR_ORDER_ID = calculatedRevenue.VENDOR_ORDER_ID
        GROUP BY s.VENDOR_ORDER_ID, s.VO_DATE, s.VENDOR_ID, s.VO_MOP, s.SALES_REP_ID
        ORDER BY s.VENDOR_ORDER_ID;

    cogs ITEM.I_PRICE%TYPE := 0;
    revenue ITEM.I_PRICE%TYPE := 0;
    g_margin ITEM.I_PRICE%TYPE := 0;

BEGIN
    FOR record in r_cursor LOOP
        revenue := revenue + record.ordertotal;
    END LOOP;
    DBMS_OUTPUT.PUT_LINE('Total Revenue: $' || revenue);
    FOR record in e_cursor LOOP
        cogs := cogs + record.ordertotal;
    END LOOP;
    DBMS_OUTPUT.PUT_LINE('Total COGS: $' || COGS);
    g_margin := revenue - cogs;
    DBMS_OUTPUT.PUT_LINE('Gross Margin: $' || COGS || ', ' ||
                         ROUND(g_margin/revenue*100,2) || '% of sales');
END;
```

5. Customer Outstanding Balances By Order

```
SELECT u.c_first_name || ' ' ||u.c_last_name AS "Name",
c.customer_order_id AS "ORDER_ID",
SUM(i.i_price * (1+i.i_markup/100) * o.qty_ordered) AS "Outstanding"
FROM customer_orders c
INNER JOIN customer_ordered_items o ON o.customer_order_id = c.customer_order_id
INNER JOIN item i ON i.item_id = o.item_id
INNER JOIN customers u ON u.customer_id = c.customer_id
WHERE c.PAID = 0
GROUP BY u.c_first_name, u.c_last_name, c.customer_order_id;
```

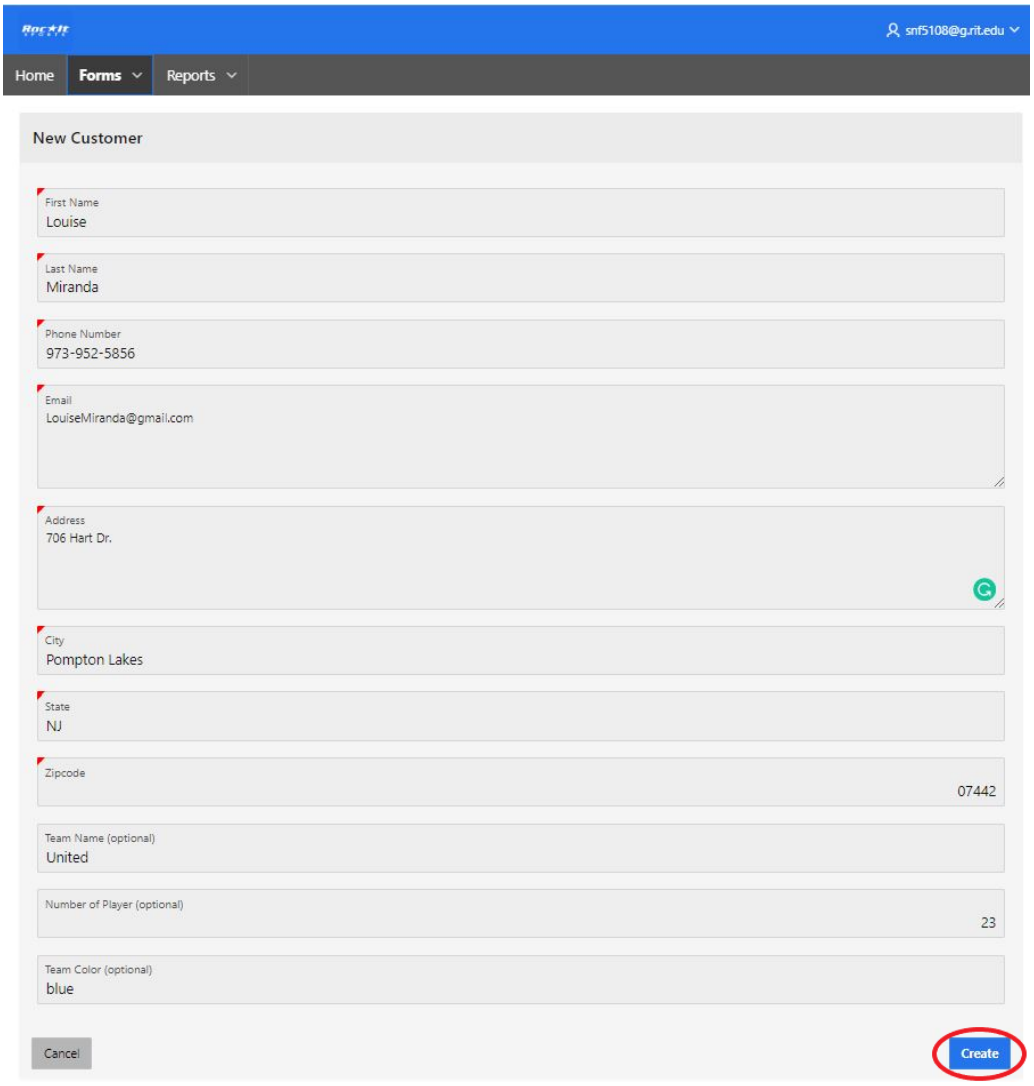
B. Sample / Example Input & Output Screenshots

- Filling out a Form - Customer Form



Fill out Form & Press Create

INPUT in Form:



Data entered into the Customer Table. A Customer ID is automatically assigned to the new customer.

OUTPUT in database table:

CUSTOMERS

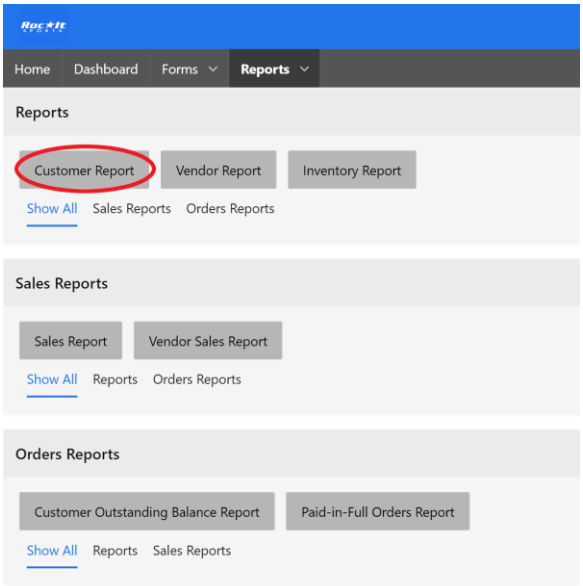
Data | Indexes | Model | Constraints | Grants | Statistics | UI Defaults | Triggers | Dependencies | SQL | REST | Sample Queries

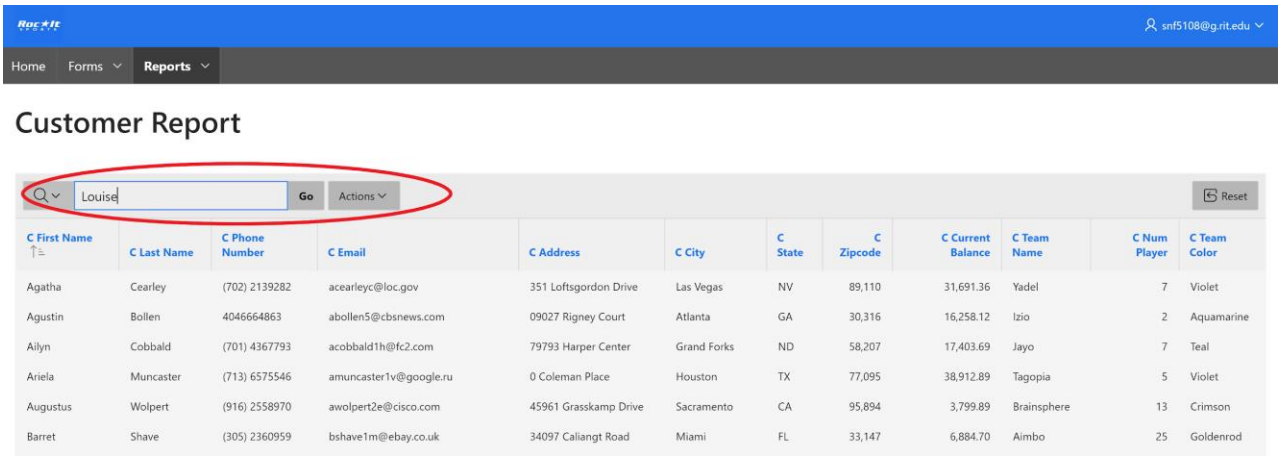
Count Rows | Insert Row | Load Data

CUSTOMER_ID	C_FIRST_NAME	C_LAST_NAME	C_PHONE_NUMBER	C_EMAIL	C_ADDRESS	C_CITY	C_STATE	C_ZIPCODE	C_CURRENT_BALANCE	C_TEAM_NAME	C_NUM_PLAYER	C_TEAM_COLOR
160	Melodie	Edinborough	(754) 1574911	medinborough2r@businessweek.com	3 5th Park	Fort Lauderdale	FL	33336	25744.2	Bubbletube	18	Puce
161	Louise	Miranda	973-952-5856	LouiseMiranda@gmail.com	706 Hart Dr.	Pompton Lakes	NJ	7442	-	United	23	blue
61	Jehanna	Neles	8182706719	jneles0@tmall.com	6 Westridge Circle	Los Angeles	CA	90065	37269.63	Twitterbeat	22	Fuscia
62	Vanessa	Alford	4699911371	valford2@bloomberg.com	8 Carioca Street	Garland	TX	75044	15472.91	Pixonyx	23	Orange
63	Becki	Brecher	9188386165	bbrecher3@wufoo.com	61471 Grasskamp Way	Tulsa	OK	74116	21276.79	Livepath	22	Pink
64	Jacquetta	Deval	9166831610	jdeval4@issuu.com	5383 Sage Circle	Sacramento	CA	95838	29376.94	Roodel	13	Indigo
65	Agustin	Bollen	4046664863	abollen5@cbsnews.com	09027 Rigney Court	Atlanta	GA	30316	16258.12	Izio	2	Aquamarine
66	Yvor	Flaubert	2677130973	yflaubert6@istockphoto.com	0 Stuart Place	Philadelphia	PA	19136	31947.38	Katz	29	Red
67	Bekki	Nafziger	5856324268	bnafziger7@seattletimes.com	21857 Toban Junction	Rochester	NY	14639	34488.15	Quimm	5	Fuscia
68	Raine	Sandwith	7065138280	rsandwith8@storify.com	85214 Monument Circle	Athens	GA	30605	31241.7	Devpulse	19	Purple
50	Tomaso	Sadlier	(203) 4264163	tsadlier9@hexun.com	4916 Eggendart Point	Waterbury	CT	6726	46422.09	Twimm	26	Orange
51	Bertie	Dormon	(865) 1685808	bdormona@indiegogo.com	7 Old Shore Trail	Knoxville	TN	37931	37994.82	Jayo	11	Puce
52	Tomkin	Stroton	(336) 8410326	tstrotonb@so-net.ne.jp	29667 Myrtle Drive	High Point	NC	27264	15861.34	Podcat	25	Teal
53	Agatha	Cearley	(702) 2139282	acearleyc@loc.gov	351 Loftsgordon Drive	Las Vegas	NV	89110	31691.36	Yadel	7	Violet
54	Penn	Hayden	(315) 6819005	phaydend@hatena.ne.jp	0015 Anthes Road	Syracuse	NY	13224	10031.53	Topiclounge	13	Red

Previous row(s) 31 - 45 of 100 Next

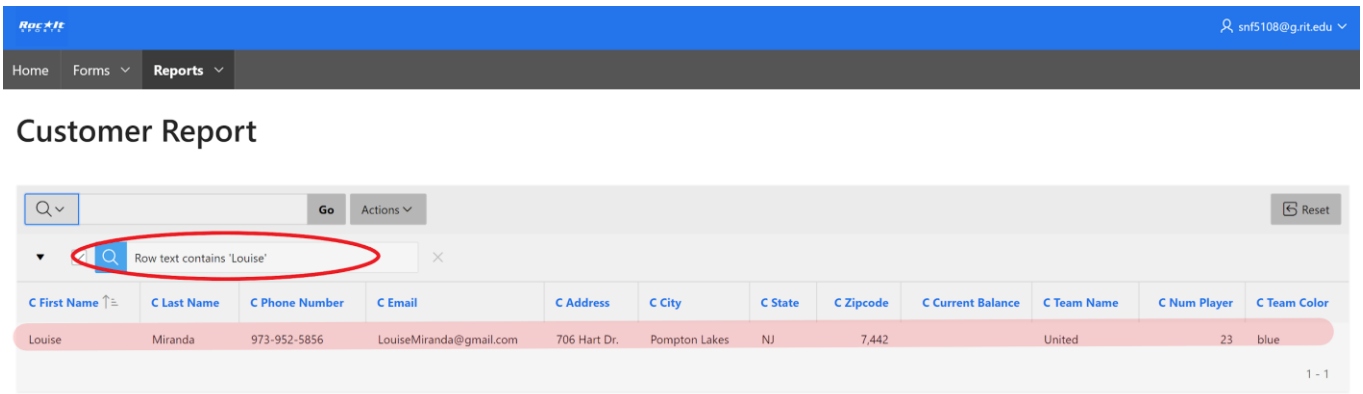
Users can also search the Customer Report in the application to see the output from the form input:





C First Name	C Last Name	C Phone Number	C Email	C Address	C City	C State	C Zipcode	C Current Balance	C Team Name	C Num Player	C Team Color
Agatha	Cearley	(702) 2139282	acearleyc@loc.gov	351 Loftsgordon Drive	Las Vegas	NV	89,110	31,691.36	Yadel	7	Violet
Agustin	Bollen	4046664863	abollen5@cbsnews.com	09027 Rigney Court	Atlanta	GA	30,316	16,258.12	Izio	2	Aquamarine
Ailyn	Cobbald	(701) 4367793	acobbald1h@fc2.com	79793 Harper Center	Grand Forks	ND	58,207	17,403.69	Jayo	7	Teal
Ariela	Muncaster	(713) 6575546	amuncaster1v@google.ru	0 Coleman Place	Houston	TX	77,095	38,912.89	Tagopia	5	Violet
Augustus	Wolpert	(916) 2558970	awolpert2e@cisco.com	45961 Grasskamp Drive	Sacramento	CA	95,894	3,799.89	Brainsphere	13	Crimson
Barret	Shave	(305) 2360959	bshave1m@ebay.co.uk	34097 Caliangt Road	Miami	FL	33,147	6,884.70	Aimbo	25	Goldenrod

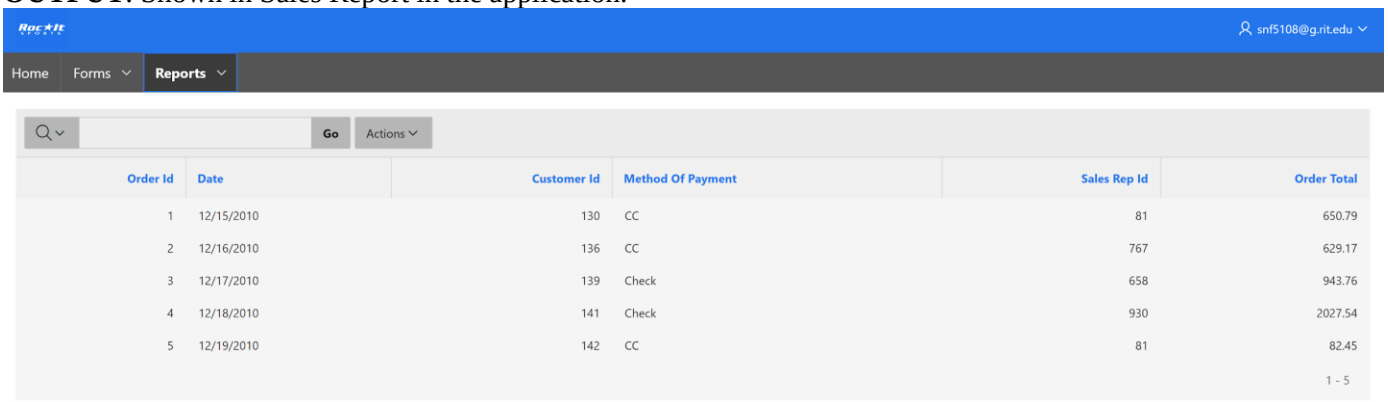
OUTPUT shown in Customer Report:



C First Name	C Last Name	C Phone Number	C Email	C Address	C City	C State	C Zipcode	C Current Balance	C Team Name	C Num Player	C Team Color
Louise	Miranda	973-952-5856	LouiseMiranda@gmail.com	706 Hart Dr.	Pompton Lakes	NJ	7,442		United	23	blue

1 - 1

INPUT: Sales Report Query (shown in Appendix A)
OUTPUT: Shown in Sales Report in the application:



Order Id	Date	Customer Id	Method Of Payment	Sales Rep Id	Order Total
1	12/15/2010	130	CC	81	650.79
2	12/16/2010	136	CC	767	629.17
3	12/17/2010	139	Check	658	943.76
4	12/18/2010	141	Check	930	2027.54
5	12/19/2010	142	CC	81	82.45

1 - 5

Specifically, the query outputs the "Order Total" Column but computing the required calculation:

Order Total
650.79
629.17
943.76
2027.54
82.45
1 - 5

C. Use Case Narratives:

1. **Sales Representatives Table**

Field Name	Description	
Sales_Rep_ID (PK)	Primary Key for Sales Rep Table	NUMBER(6,0)
S_Email	Sales Rep's Email	VARCHAR2(50)
S_First_Name	First Name for Sales Rep	VARCHAR2(4000)
S_Last_Name	Last Name for Sales Rep	VARCHAR2(4000)
S_Phone_Number	Sales Rep's Phone Number	VARCHAR2(50) - so can include parenthesis
S_Commission_Rate	Commission Rate for each Sales Rep	VARCHAR2(50)
S_Address	Sales Rep's Address	VARCHAR2(4000)
S_City	Sales Rep's City	VARCHAR2(50)
S_Zip_Code	Sales Rep's Zip Code	NUMBER(5,0)
S_State	State Sales Rep lives in	VARCHAR(15)

2. **Customers Table**

Field Name	Description	Data Type
Customer_ID (PK)	Primary key for Customer.	NUMBER(6,0)
	For Customer_ID: Uses a Default so an ID is automatically created for every data / row entry	"DBROCITSPORTS"."ISEQ$$_96681720".nextval
C_ First_Name	First name of the customer.	VARCHAR2(50)
C_Last_Name	Last name of the customer.	VARCHAR2(50)
C_Address	Customer's address.	VARCHAR2(100)
C_Phone Number	Customer's phone number.	VARCHAR2(50) - so can include parenthesis
C_Email	Customer's email.	VARCHAR2(4000)
C_Current Balance	The amount of money the customer owes.	NUMBER(8,2)
C_City	Customer's city.	VARCHAR2(50)
C_State	Customer's state.	VARCHAR2(2)
C_Zip_Code	Customer's zip code.	NUMBER(5,0)
C_Team_Name (optional field)	Team name that customer represents.	VARCHAR2(50)
C_Team_Color (optional field)	The color of the team that the customer represents.	VARCHAR2(50)
C_Num_Players (optional field)	Number of players on the team that the customers represent.	NUMBER(2,0)

3. **Customer Orders Table**

C_Orders	Description	Data Type
Customer_Order_ID (PK)	Primary key of the order id	NUMBER(5,0)
CO_Date	The date the customer placed the order.	DATE
Customer_ID (FK)	Customer's ID.	NUMBER(10,0)
CO_MOP	Method of payment used in the order	VARCHAR2(4000)
Sales_Rep_ID (FK)	Sales Rep ID	NUMBER(7,0)
PAID	Has order been paid for	NUMBER (1,0)

4. **Customer Ordered Items Table**

Field Table	Description	Data Type
Customer_Order_ID (PK)	Primary Key for Customer's Ordered Item	NUMBER(7,0)
Item_ID (FK)	Line item ordered	VARCHAR2(50)
Quantity_Ordered	Number of the item ordered	NUMBER(7,0)

5. **Vendor Table**

Field Name	Description	Datatype
Vendor_ID (PK)	Primary Key for Vendor Table	NUMBER(3,0)
V_Name	Name of Vendor	VARCHAR2(4000)
V_Address	Vendor's Address	VARCHAR2(4000)
V_City	Vendor's City	VARCHAR2(4000)
V_State	Vendor's State	VARCHAR2(2)
V_Zipcode	Vendor's Zip Code	NUMBER(5,0)
V_Credit_Limit	Credit Limit	NUMBER(5,0)

6. **Vendor Orders Table**

Field Table	Description	
Vendor_Order_ID (PK)	Primary key of the order	NUMBER(8,0)
VO_Date	Date of the order	DATA
Vendor_ID (FK)	Foreign Key representing Vendor ID	NUMBER(8,0)
Sales_Rep_ID (FK)	Foreign Key representing Sales Rep ID	NUMBER(8,0)
VO_MOP	Method of payment used in the order	VARCHAR2(4000)

7. **Vendor Ordered Items Table**

Field Table	Description	Datatype
Vendor_Order_ID (PK)	Primary Key for Vendor Order Item	NUMBER(8,0)
Item_ID (FK)	Line item ordered	VARCHAR2(50)
Quantity_Ordered	Number of the item ordered	NUMBER(8,0)

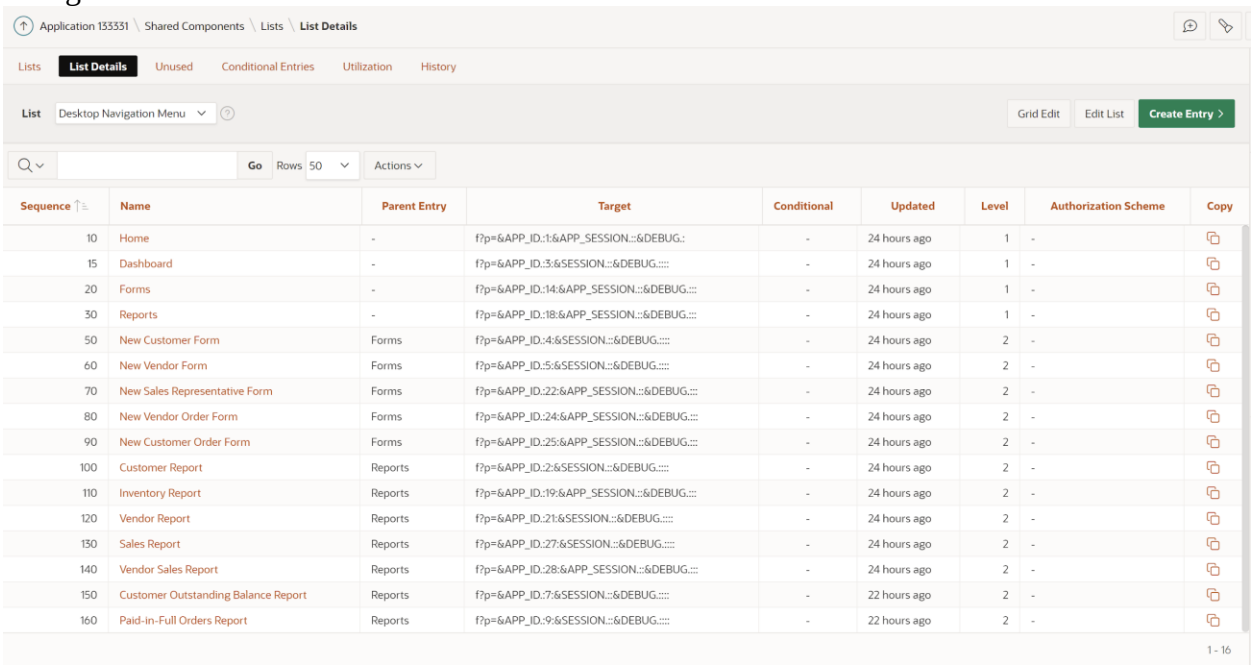
8. **Item Table**

Field Name	Description	Data Type
Item_ID (PK)	Primary key for items	VARCHAR2(4000)
I_Name	Name of the item	VARCHAR2(1000)
I_Description	Description of the item attributes	VARCHAR(4000)
I_Price	Price of the item	NUMBER(6,2)
I_Category	A group that the item belongs to	VARCHAR2(50)
I_Color	The color of the item	VARCHAR2(50)
I_Size	The size of the item.	VARCHAR2(100)

I_Quantity	The number of the item on-hand in inventory	NUMBER(5,0)
I_Markup	Product markup amount	NUMBER(5,0)

D. Menu Structure

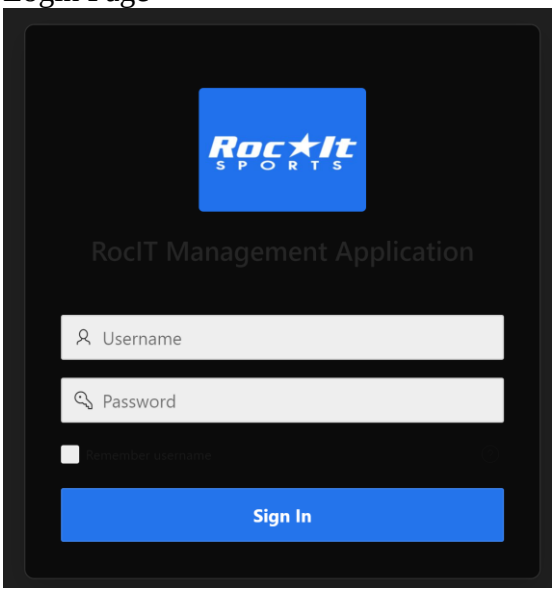
- Navigation Menu - Parent list



Sequence	Name	Parent Entry	Target	Conditional	Updated	Level	Authorization Scheme	Copy
10	Home	-	f?p=&APP_ID.:1:&APP_SESSION.::&DEBUG.:	-	24 hours ago	1	-	
15	Dashboard	-	f?p=&APP_ID.:3:&SESSION.::&DEBUG.::::	-	24 hours ago	1	-	
20	Forms	-	f?p=&APP_ID.:14:&APP_SESSION.::&DEBUG.:::	-	24 hours ago	1	-	
30	Reports	-	f?p=&APP_ID.:18:&APP_SESSION.::&DEBUG.:::	-	24 hours ago	1	-	
50	New Customer Form	Forms	f?p=&APP_ID.:4:&SESSION.::&DEBUG.::::	-	24 hours ago	2	-	
60	New Vendor Form	Forms	f?p=&APP_ID.:5:&SESSION.::&DEBUG.::::	-	24 hours ago	2	-	
70	New Sales Representative Form	Forms	f?p=&APP_ID.:22:&APP_SESSION.::&DEBUG.:::	-	24 hours ago	2	-	
80	New Vendor Order Form	Forms	f?p=&APP_ID.:24:&APP_SESSION.::&DEBUG.:::	-	24 hours ago	2	-	
90	New Customer Order Form	Forms	f?p=&APP_ID.:25:&APP_SESSION.::&DEBUG.:::	-	24 hours ago	2	-	
100	Customer Report	Reports	f?p=&APP_ID.:2:&SESSION.::&DEBUG.::::	-	24 hours ago	2	-	
110	Inventory Report	Reports	f?p=&APP_ID.:19:&APP_SESSION.::&DEBUG.:::	-	24 hours ago	2	-	
120	Vendor Report	Reports	f?p=&APP_ID.:21:&SESSION.::&DEBUG.::::	-	24 hours ago	2	-	
130	Sales Report	Reports	f?p=&APP_ID.:27:&SESSION.::&DEBUG.::::	-	24 hours ago	2	-	
140	Vendor Sales Report	Reports	f?p=&APP_ID.:28:&APP_SESSION.::&DEBUG.:::	-	24 hours ago	2	-	
150	Customer Outstanding Balance Report	Reports	f?p=&APP_ID.:7:&SESSION.::&DEBUG.::::	-	22 hours ago	2	-	
160	Paid-in-Full Orders Report	Reports	f?p=&APP_ID.:9:&SESSION.::&DEBUG.::::	-	22 hours ago	2	-	

1 - 16

- Login Page



SQL For Logo:

Inline

```
span.t-Login-logo {
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url(#APP_IMAGES#Capture.JPG);
  background-size: cover;
  width: 150px;
  height: 110px;
}
```
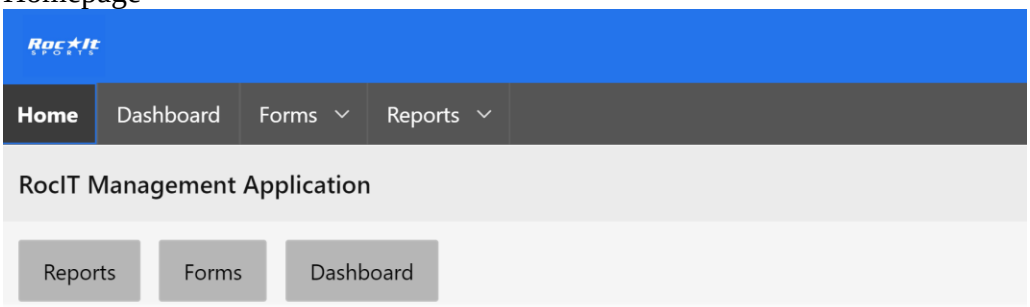
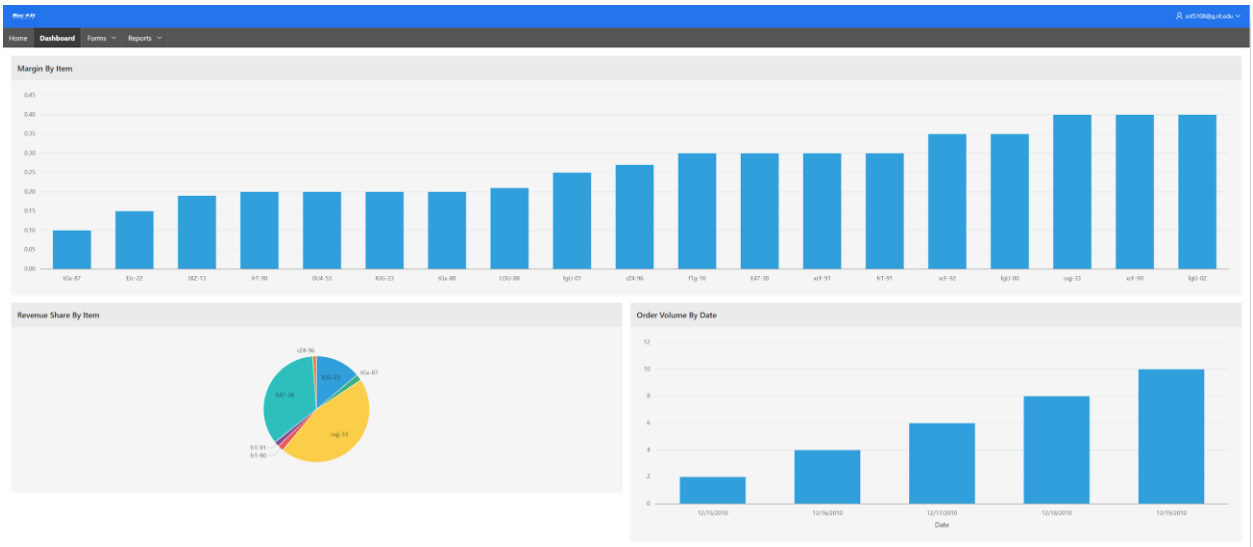
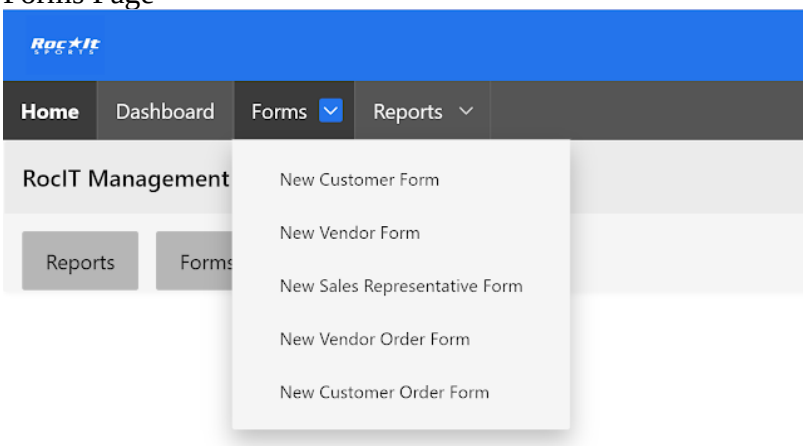

- Homepage

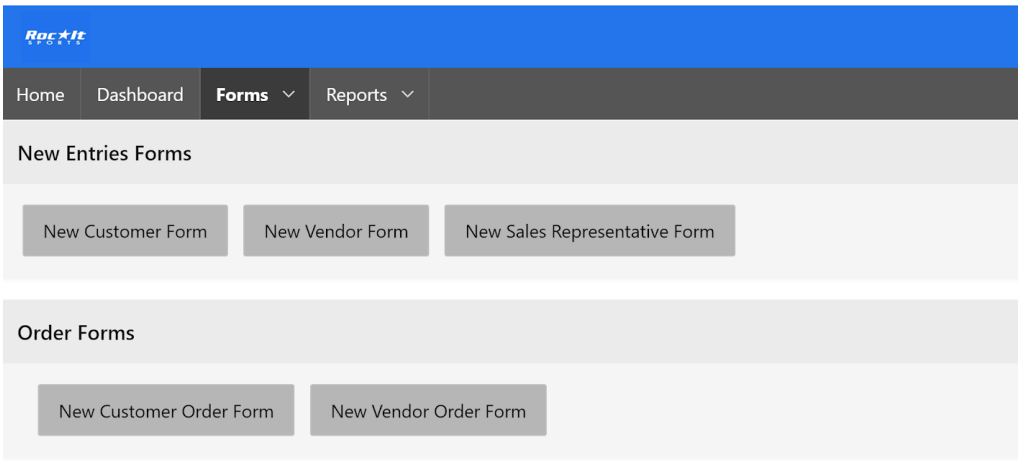


- Dashboard

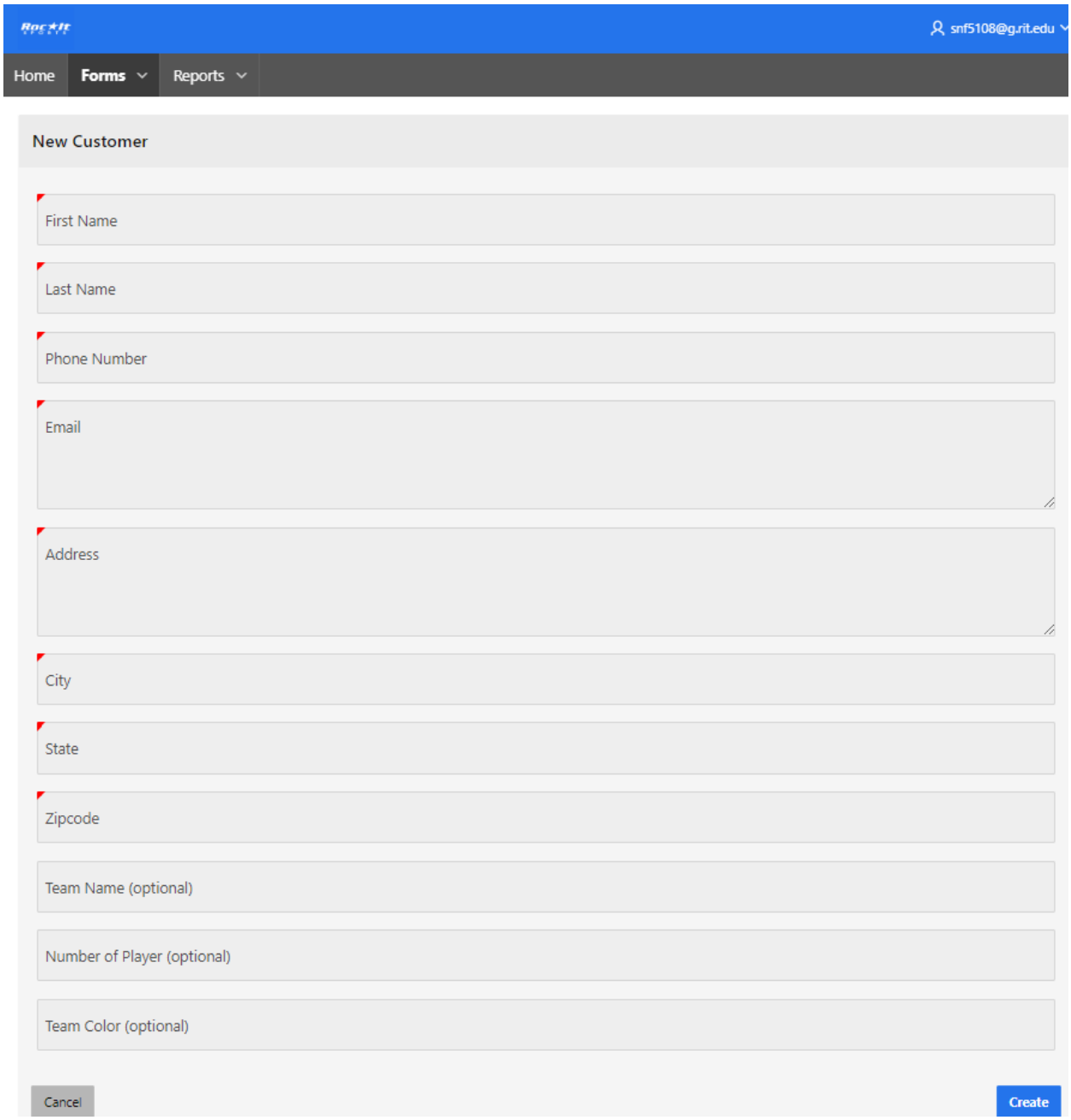


- Forms Page

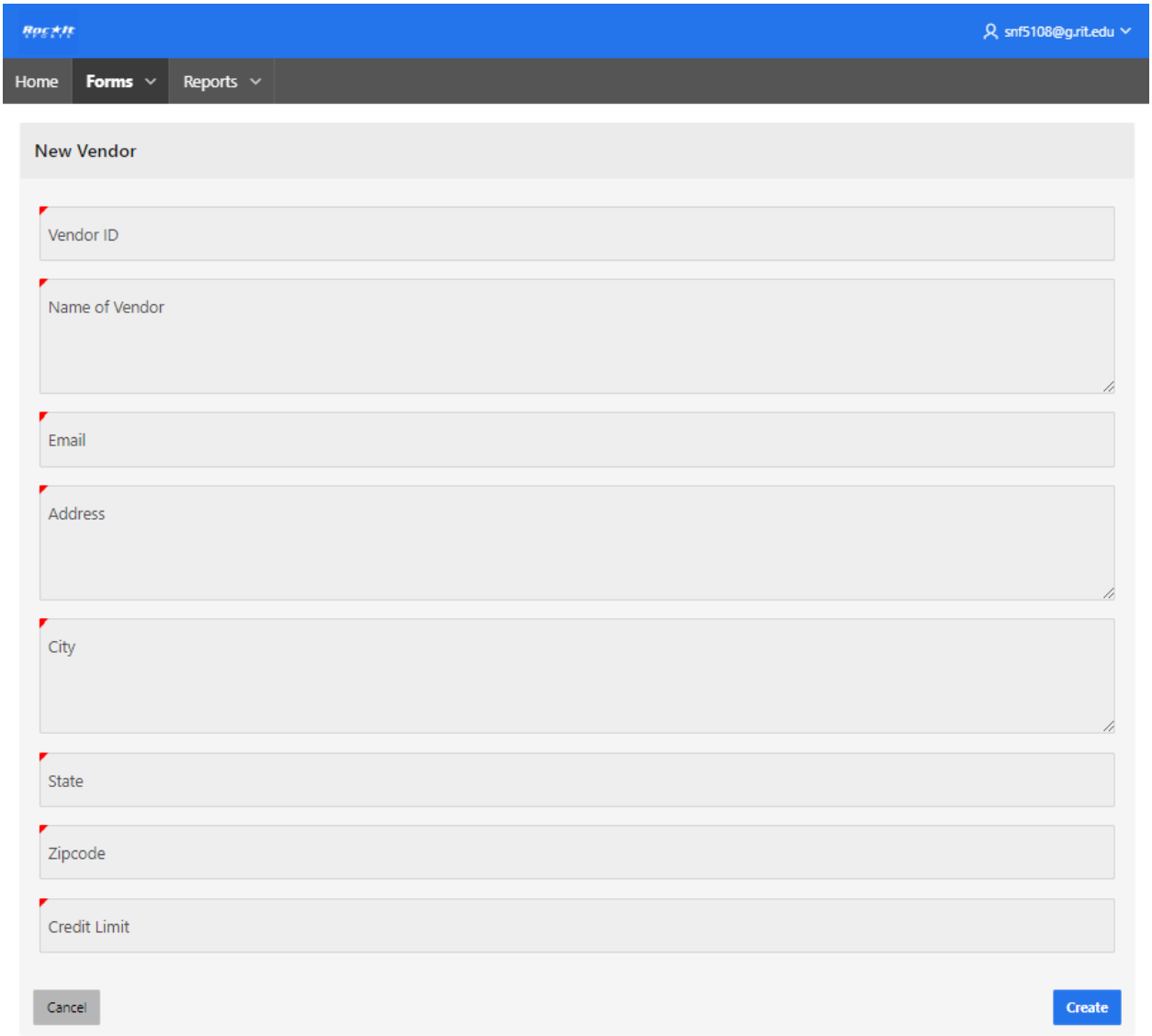

Home
Dashboard
Forms
Reports
RocIT Management
Reports
Forms
New Customer Form
New Vendor Form
New Sales Representative Form
New Vendor Order Form
New Customer Order Form


Home
Dashboard
Forms
Reports
New Entries Forms
New Customer Form
New Vendor Form
New Sales Representative Form
Order Forms
New Customer Order Form
New Vendor Order Form

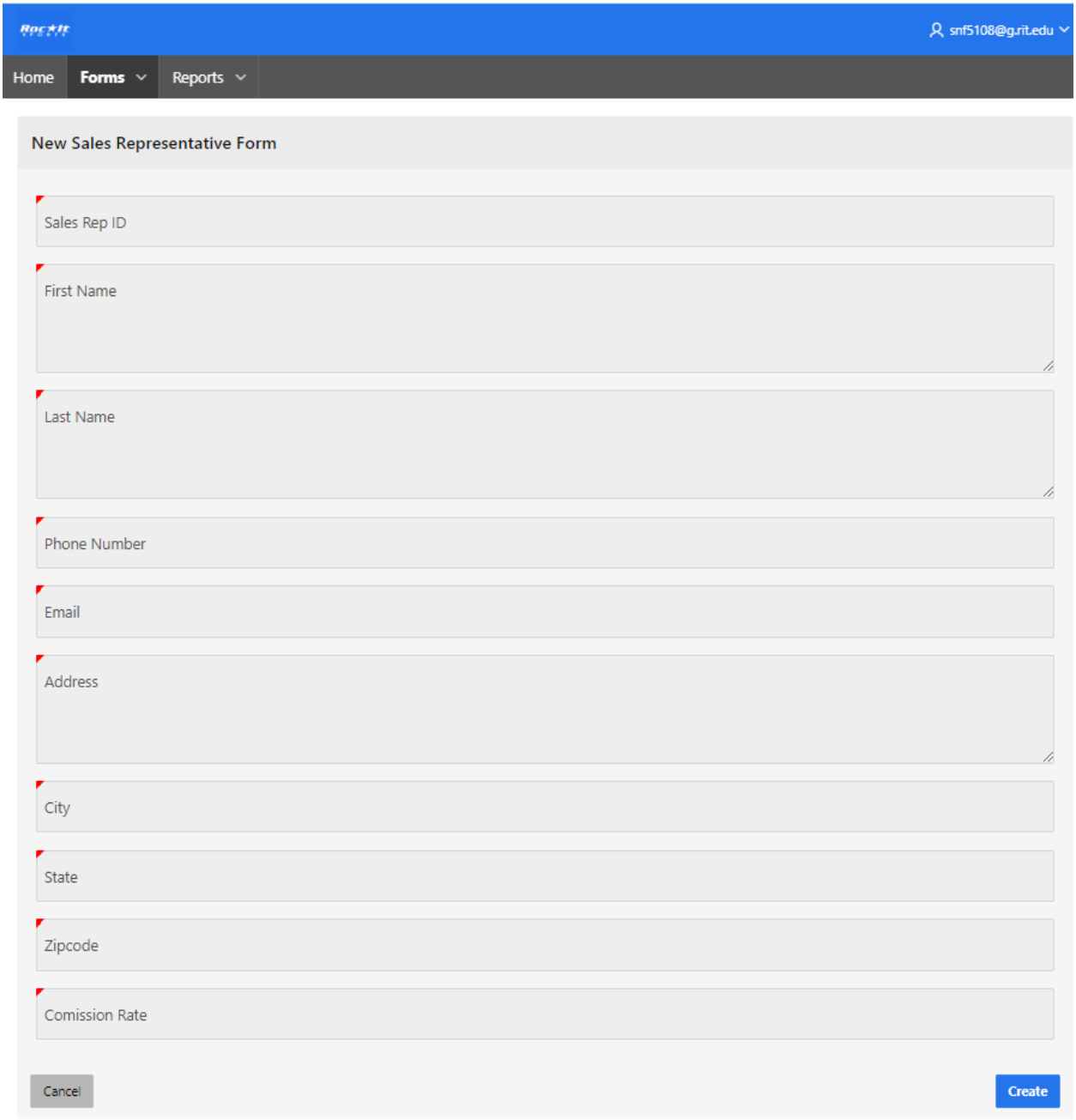
- New Customer Form



- New Vendor Form



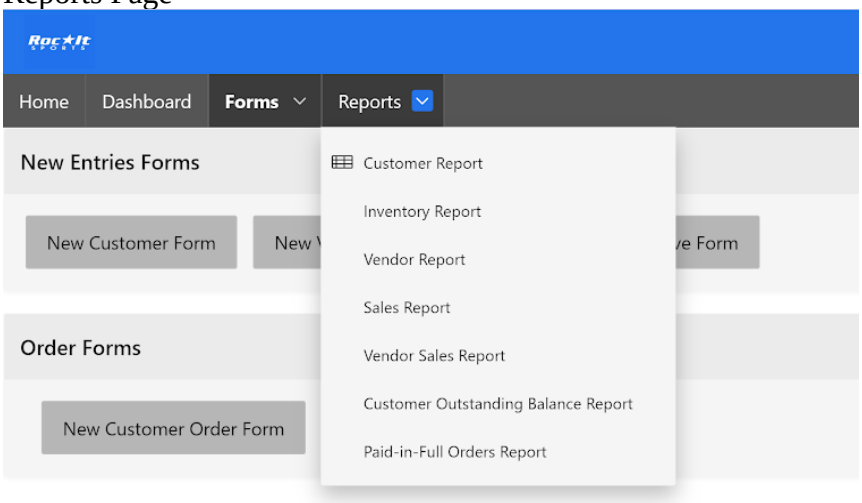
- New Sales Representative Form

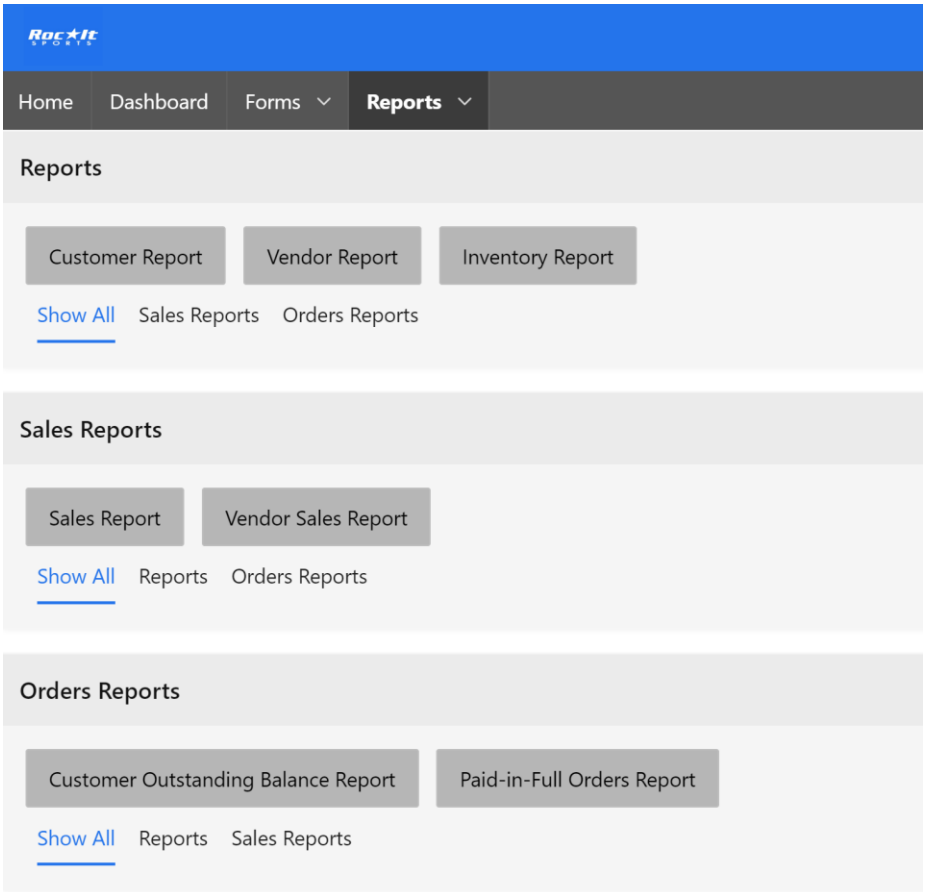


- New Vendor Order Form

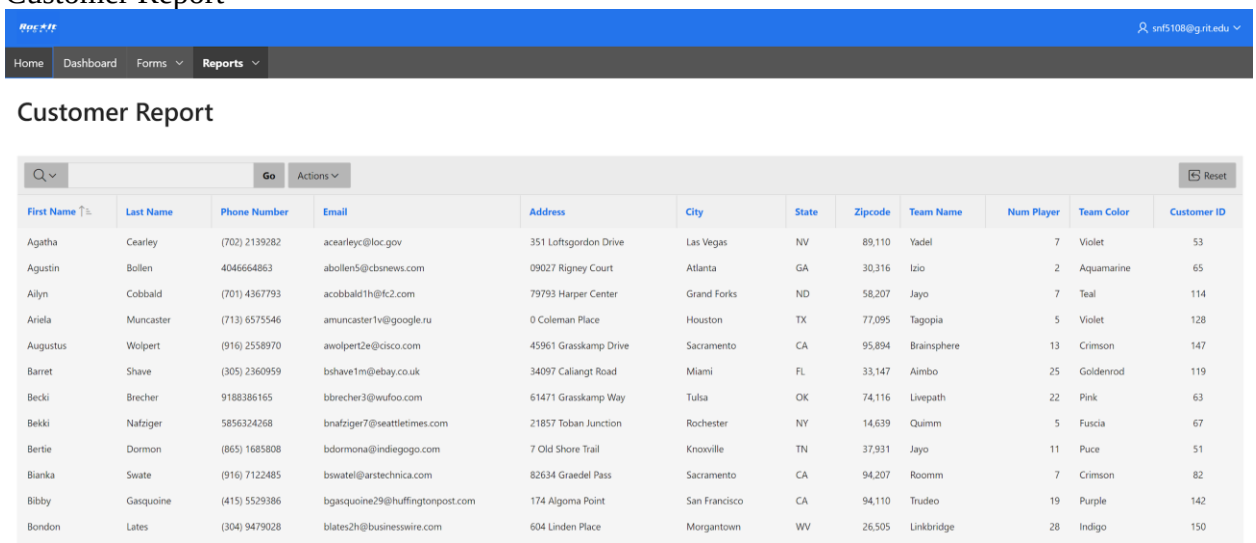
- New Customer Order Form

- Reports Page





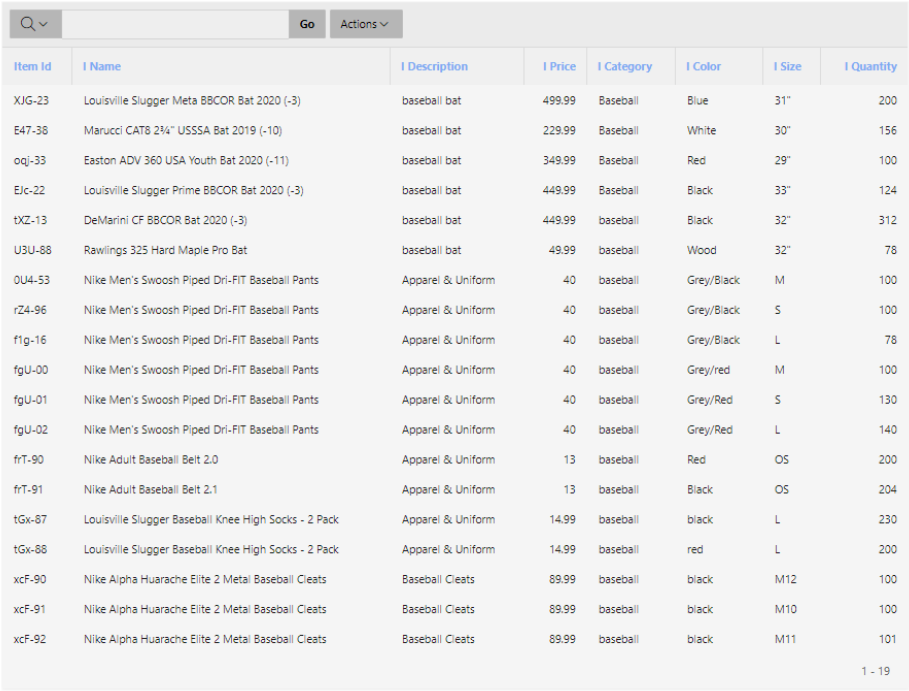
- Customer Report



First Name	Last Name	Phone Number	Email	Address	City	State	Zipcode	Team Name	Num Player	Team Color	Customer ID
Agatha	Cearley	(702) 2139282	acearleyc@loc.gov	351 Loftsgordon Drive	Las Vegas	NV	89,110	Yadel	7	Violet	53
Agustin	Bollen	4046664863	abollen5@cbsnews.com	09027 Rigney Court	Atlanta	GA	30,316	Izio	2	Aquamarine	65
Ailyn	Cobbald	(701) 4367793	acobbald1h@fc2.com	79793 Harper Center	Grand Forks	ND	58,207	Jayo	7	Teal	114
Ariela	Muncaster	(713) 6575546	amuncaster1v@google.ru	0 Coleman Place	Houston	TX	77,095	Tagopia	5	Violet	128
Augustus	Wolpert	(916) 2558970	awolpert2e@cisco.com	45961 Grasskamp Drive	Sacramento	CA	95,894	Brainsphere	13	Crimson	147
Barret	Shave	(305) 2360959	bshave1m@ebay.co.uk	34097 Caliangt Road	Miami	FL	33,147	Aimbo	25	Goldenrod	119
Becki	Brecher	9188386165	bbrecher3@wufoo.com	61471 Grasskamp Way	Tulsa	OK	74,116	Livepath	22	Pink	63
Bekki	Nafziger	5856324268	bnafziger7@seattletimes.com	21857 Toban Junction	Rochester	NY	14,639	Quimm	5	Fuscia	67
Bertie	Dormon	(865) 1685808	bdormona@indiegogo.com	7 Old Shore Trail	Knoxville	TN	37,931	Jayo	11	Puce	51
Bianka	Swate	(916) 7122485	bswatel@arstechnica.com	82634 Graedel Pass	Sacramento	CA	94,207	Roomm	7	Crimson	82
Bibby	Gasquoine	(415) 5529386	bgasquoine29@huffingtonpost.com	174 Algoma Point	San Francisco	CA	94,110	Trudeo	19	Purple	142
Bondon	Lates	(304) 9479028	blates2h@businesswire.com	604 Linden Place	Morgantown	WV	26,505	Linkbridge	28	Indigo	150

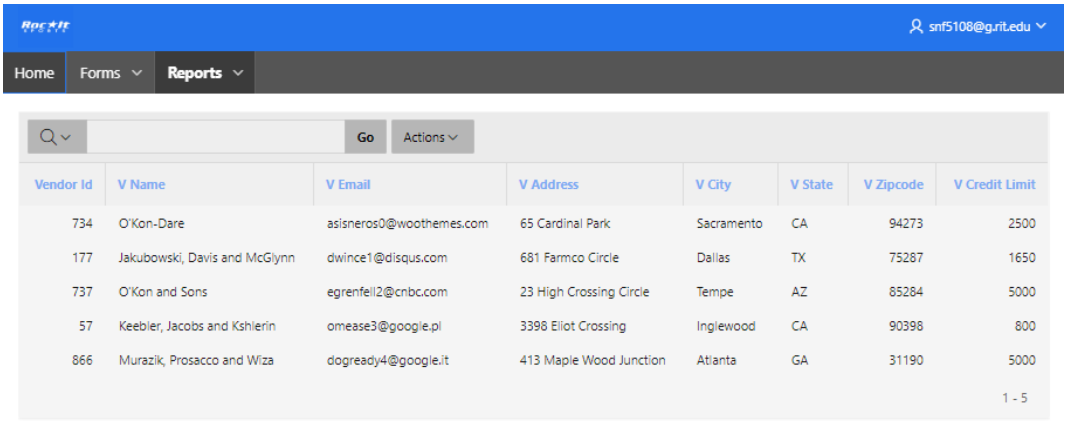
- Inventory Report

Inventory Report



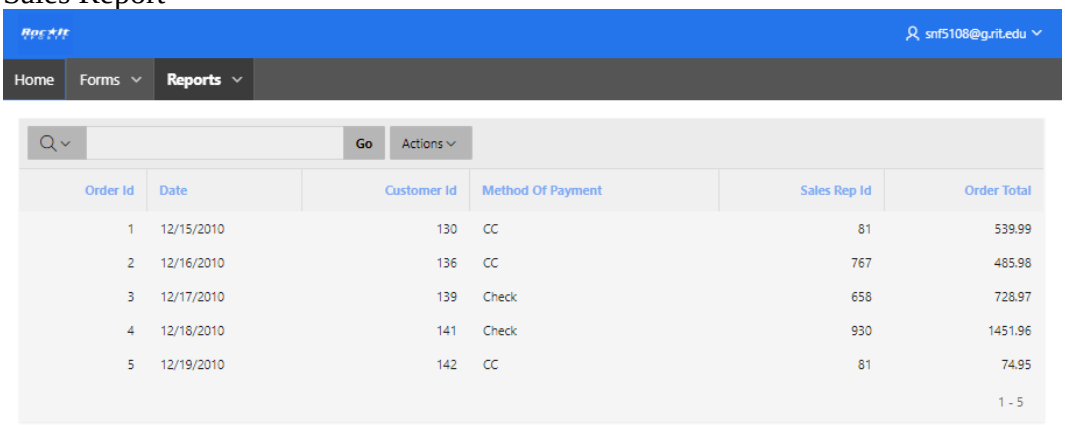
Item Id	I Name	I Description	I Price	I Category	I Color	I Size	I Quantity
XJG-23	Louisville Slugger Meta BBCOR Bat 2020 (-3)	baseball bat	499.99	Baseball	Blue	31"	200
E47-38	Marucci CAT8 2¾" USSSA Bat 2019 (-10)	baseball bat	229.99	Baseball	White	30"	156
oqj-33	Easton ADV 360 USA Youth Bat 2020 (-11)	baseball bat	349.99	Baseball	Red	29"	100
EJc-22	Louisville Slugger Prime BBCOR Bat 2020 (-3)	baseball bat	449.99	Baseball	Black	33"	124
tXZ-13	DeMarini CF BBCOR Bat 2020 (-3)	baseball bat	449.99	baseball	Black	32"	312
U3U-88	Rawlings 325 Hard Maple Pro Bat	baseball bat	49.99	baseball	Wood	32"	78
0U4-53	Nike Men's Swoosh Piped Dri-FIT Baseball Pants	Apparel & Uniform	40	baseball	Grey/Black	M	100
rZ4-96	Nike Men's Swoosh Piped Dri-FIT Baseball Pants	Apparel & Uniform	40	baseball	Grey/Black	S	100
f1g-16	Nike Men's Swoosh Piped Dri-FIT Baseball Pants	Apparel & Uniform	40	baseball	Grey/Black	L	78
fgU-00	Nike Men's Swoosh Piped Dri-FIT Baseball Pants	Apparel & Uniform	40	baseball	Grey/red	M	100
fgU-01	Nike Men's Swoosh Piped Dri-FIT Baseball Pants	Apparel & Uniform	40	baseball	Grey/Red	S	130
fgU-02	Nike Men's Swoosh Piped Dri-FIT Baseball Pants	Apparel & Uniform	40	baseball	Grey/Red	L	140
frT-90	Nike Adult Baseball Belt 2.0	Apparel & Uniform	13	baseball	Red	OS	200
frT-91	Nike Adult Baseball Belt 2.1	Apparel & Uniform	13	baseball	Black	OS	204
tGx-87	Louisville Slugger Baseball Knee High Socks - 2 Pack	Apparel & Uniform	14.99	baseball	black	L	230
tGx-88	Louisville Slugger Baseball Knee High Socks - 2 Pack	Apparel & Uniform	14.99	baseball	red	L	200
xcF-90	Nike Alpha Huarache Elite 2 Metal Baseball Cleats	Baseball Cleats	89.99	baseball	black	M12	100
xcF-91	Nike Alpha Huarache Elite 2 Metal Baseball Cleats	Baseball Cleats	89.99	baseball	black	M10	100
xcF-92	Nike Alpha Huarache Elite 2 Metal Baseball Cleats	Baseball Cleats	89.99	baseball	black	M11	101

- Vendor Report



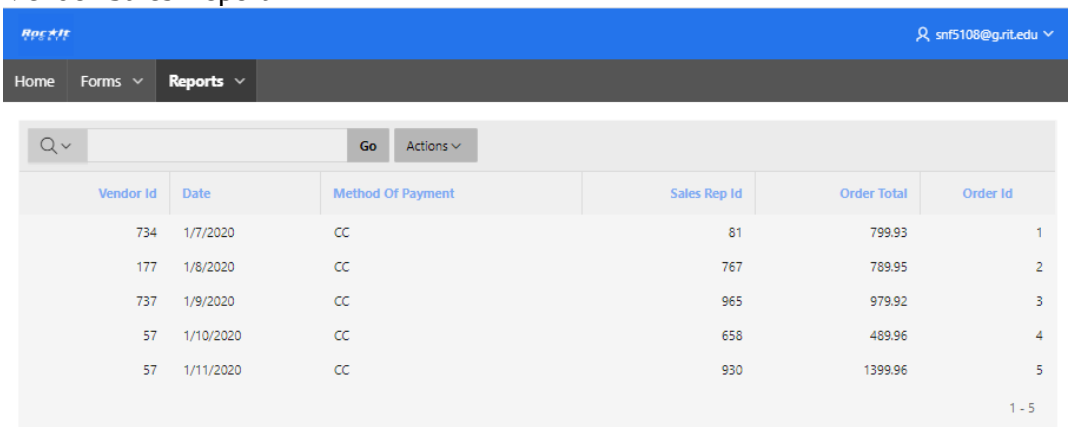
Vendor Id	V Name	V Email	V Address	V City	V State	V Zipcode	V Credit Limit
734	O'Kon-Dare	asisneros0@woothemes.com	65 Cardinal Park	Sacramento	CA	94273	2500
177	Jakubowski, Davis and McGlynn	dwince1@disqus.com	681 Farmco Circle	Dallas	TX	75287	1650
737	O'Kon and Sons	egrenfell2@cnbc.com	23 High Crossing Circle	Tempe	AZ	85284	5000
57	Keebler, Jacobs and Kshlerin	omease3@google.pl	3398 Eliot Crossing	Inglewood	CA	90398	800
866	Murazik, Prosacco and Wiza	dogready4@google.it	413 Maple Wood Junction	Atlanta	GA	31190	5000

- Sales Report



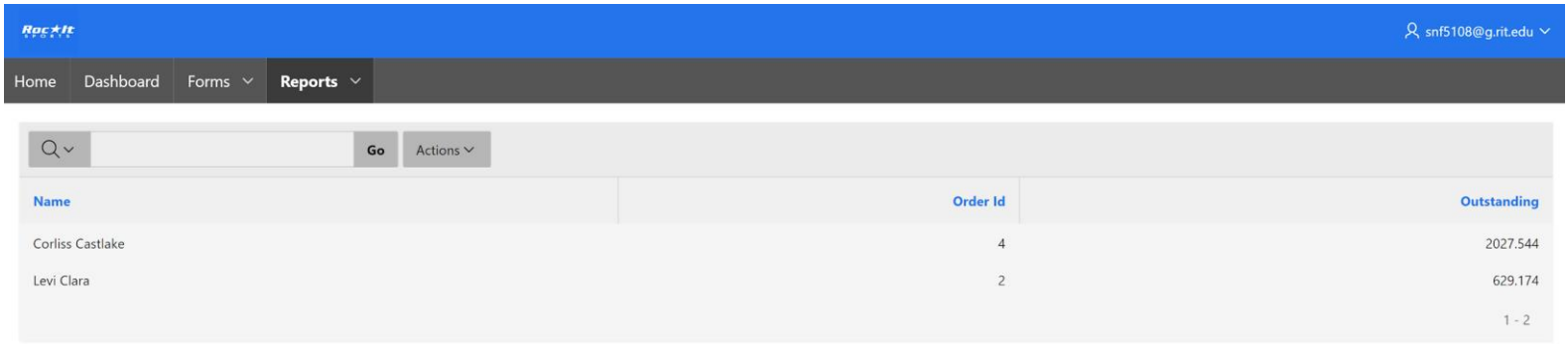
Order Id	Date	Customer Id	Method Of Payment	Sales Rep Id	Order Total
1	12/15/2010	130	CC	81	539.99
2	12/16/2010	136	CC	767	485.98
3	12/17/2010	139	Check	658	728.97
4	12/18/2010	141	Check	930	1451.96
5	12/19/2010	142	CC	81	74.95

- Vendor Sales Report



Vendor Id	Date	Method Of Payment	Sales Rep Id	Order Total	Order Id
734	1/7/2020	CC	81	799.93	1
177	1/8/2020	CC	767	789.95	2
737	1/9/2020	CC	965	979.92	3
57	1/10/2020	CC	658	489.96	4
57	1/11/2020	CC	930	1399.96	5

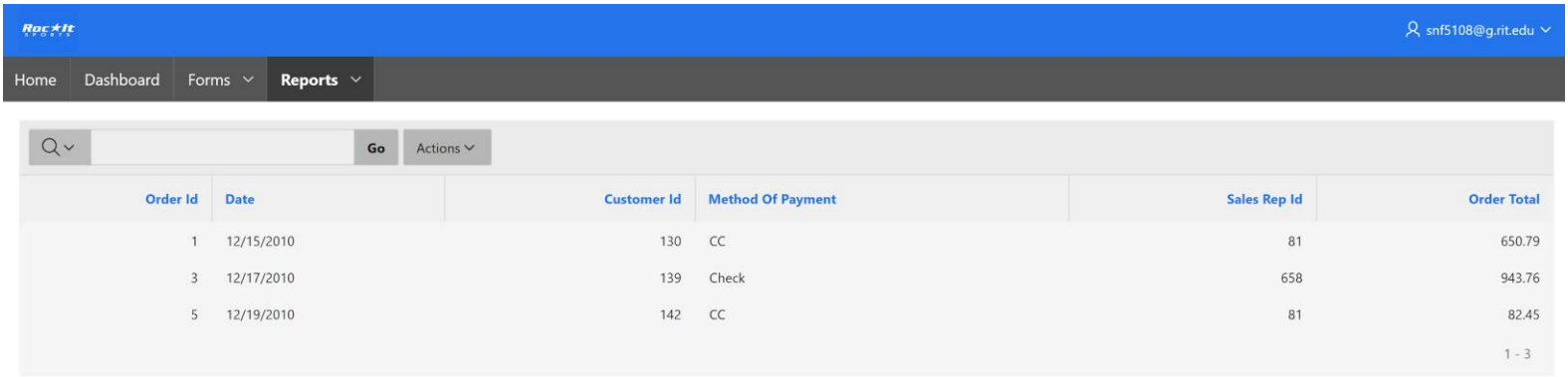
- Customer Outstanding Balance Report



Name	Order Id	Outstanding
Corliss Castlake	4	2027.544
Levi Clara	2	629.174

1 - 2

- Paid-in-Full Orders Report



Order Id	Date	Customer Id	Method Of Payment	Sales Rep Id	Order Total
1	12/15/2010	130	CC	81	650.79
3	12/17/2010	139	Check	658	943.76
5	12/19/2010	142	CC	81	82.45

1 - 3