

IS 475/675 - HW #7**1. Code**

```

Select      CONVERT(varchar, ord.OrderDate, 101) OrderDate,
            ord.OrderID OrderNumber,
            (cus.LastName + ', ' + SUBSTRING(cus.FirstName,1,1) + '.') CustomerName,
            '(' + SUBSTRING(cus.Phone,1,3) + ') ' + SUBSTRING(cus.Phone,4,3) + '-' + SUBSTRING(cus.Phone,7,4) PhoneNumber
From        tblOrder ord
Inner Join  tblCustomer cus
On          ord.CustomerID = cus.CustomerID
Where       YEAR(ord.OrderDate) = YEAR(GETDATE()) and (MONTH(ord.OrderDate) = 1)
Order By    ord.OrderDate Desc;

```

1. Output

	OrderDate	OrderNumber	CustomerName	PhoneNumber
1	01/29/2016	651222	Martinez, G.	(775) 883-7612
2	01/26/2016	200335	Rodriguez, K.	(819) 382-1828
3	01/26/2016	300221	Rodriguez, K.	(819) 382-1828
4	01/26/2016	567123	Rodriguez, K.	(819) 382-1828
5	01/22/2016	980001	Guili, M.	(619) 562-1334

2. Code

```

Select      CONVERT(varchar, ord.OrderDate, 101) OrderDate,
            ord.OrderID OrderNumber,
            (cus.LastName + ', ' + SUBSTRING(cus.FirstName,1,1) + '.') CustomerName,
            ISNULL(ord.ShipAddress, cus.Address) ShippingAddress,
            ISNULL(ord.ShipZip, cus.Zip) ShippingCode,
            ISNULL(ord.ShipCountry, ISNULL(cus.Country, 'Unknown')) ShippingCountry,
            dbo.FormatPhoneBasedOnCountry(ord.ShipCountry, ord.ShipPhone, cus.Country, cus.Phone) PhoneNumber
From        tblOrder ord
Inner Join  tblCustomer cus
On          ord.CustomerID = cus.CustomerID
Where       YEAR(ord.OrderDate) = YEAR(GETDATE()) and (MONTH(ord.OrderDate) = 1)
Order By    ord.OrderDate Desc;

```

2. Output

	OrderDate	OrderNumber	CustomerName	ShippingAddress	ShippingCode	ShippingCountry	PhoneNumber
1	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612
2	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500
3	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005
4	01/26/2016	567123	Rodriguez, K.	2276 Brentell Street Suite 201	92128	USA	(858) 344-0669
5	01/22/2016	980001	Guili, M.	4457 Meridith St	97128	Unknown	(619) 562-1334

3. Code

```
Select      CONVERT(varchar, ord.OrderDate, 101) OrderDate,
            ord.OrderID OrderNumber,
            (cus.LastName + ', ' + SUBSTRING(cus.FirstName,1,1) + '.') CustomerName,
            ISNULL(ord.ShipAddress, cus.Address) ShippingAddress,
            ISNULL(ord.ShipZip, cus.Zip) ShippingCode,
            ISNULL(ord.ShipCountry, ISNULL(cus.Country, 'Unknown')) ShippingCountry,
            dbo.FormatPhoneBasedOnCountry(ord.ShipCountry, ord.ShipPhone, cus.Country, cus.Phone) PhoneNumber,
            ol.ItemID ItemID,
            ol.Quantity Quantity,
            ol.Price Price,
            (ol.Quantity * ol.Price) ExtendedPrice
From        tblOrder ord
Inner Join  tblCustomer cus
On          ord.CustomerID = cus.CustomerID
Inner Join  tblOrderLine ol
On          ord.OrderID = ol.OrderID
Where       YEAR(ord.OrderDate) = YEAR(GETDATE()) and (MONTH(ord.OrderDate) = 1)
Order By    ord.OrderDate Desc;
```

3. Output

	OrderDate	OrderNumber	CustomerName	ShippingAddress	ShippingCode	ShippingCountry	PhoneNumber	ItemID	Quantity	Price	ExtendedPrice
1	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612	A34665	5	37.95	189.75
2	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612	A34882	16	11.95	191.20
3	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612	B78244	21	17.99	377.79
4	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	A23441	1	29.95	29.95
5	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	A34665	1	34.95	34.95
6	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	B67123	1	39.99	39.99
7	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	B67466	1	43.95	43.95
8	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	A23771	1	145.99	145.99
9	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	A34665	1	35.95	35.95
10	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	A34882	1	10.95	10.95
11	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	B67123	1	39.99	39.99
12	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	B78244	1	19.95	19.95
13	01/26/2016	567123	Rodriguez, K.	2276 Brentell Street Suite 201	92128	USA	(858) 344-0669	C26133	1	395.95	395.95
14	01/22/2016	980001	Guili, M.	4457 Meridith St	97128	Unknown	(619) 562-1334	C29179	3	275.99	827.97
15	01/22/2016	980001	Guili, M.	4457 Meridith St	97128	Unknown	(619) 562-1334	C34122	2	169.95	339.90

4. Code

```
Select      CONVERT(varchar, ord.OrderDate, 101) OrderDate,
            ord.OrderID OrderNumber,
            (cus.LastName + ', ' + SUBSTRING(cus.FirstName,1,1) + '.') CustomerName,
            ISNULL(ord.ShipAddress, cus.Address) ShippingAddress,
            ISNULL(ord.ShipZip, cus.Zip) ShippingCode,
            ISNULL(ord.ShipCountry, ISNULL(cus.Country, 'Unknown')) ShippingCountry,
            dbo.FormatPhoneBasedOnCountry(ord.ShipCountry, ord.ShipPhone, cus.Country, cus.Phone) PhoneNumber,
            ol.ItemID ItemID,
            ite.Description Description,
            ol.Quantity Quantity,
            ol.Price Price,
            (ol.Quantity * ol.Price) ExtendedPrice
From        tblOrder ord
Inner Join  tblCustomer cus
On          ord.CustomerID = cus.CustomerID
Inner Join  tblOrderLine ol
On          ord.OrderID = ol.OrderID
Inner Join  tblItem ite
On          ol.ItemID = ite.ItemID
Where      YEAR(ord.OrderDate) = YEAR(GETDATE()) and (MONTH(ord.OrderDate) = 1)
Order By   ord.OrderDate Desc;
```

4. Output

	OrderDate	OrderNumber	CustomerName	ShippingAddress	ShippingCode	ShippingCountry	PhoneNumber	ItemID	Description	Quantity	Price	ExtendedPrice
1	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612	A34665	Boggle Deluxe 5x5	5	37.95	189.75
2	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612	A34882	Perudo	16	11.95	191.20
3	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612	B78244	Code Names	21	17.99	377.79
4	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	A23441	New York City Monopoly Game Collector's Edition	1	29.95	29.95
5	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	A34665	Boggle Deluxe 5x5	1	34.95	34.95
6	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	B67123	Tiny Epic Galaxies	1	39.99	39.99
7	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	1	43.95	43.95
8	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	A23771	Mysterium	1	145.99	145.99
9	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	A34665	Boggle Deluxe 5x5	1	35.95	35.95
10	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	A34882	Perudo	1	10.95	10.95
11	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	B67123	Tiny Epic Galaxies	1	39.99	39.99
12	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	B78244	Code Names	1	19.95	19.95
13	01/26/2016	567123	Rodriguez, K.	2276 Brentell Street Suite 201	92128	USA	(858) 344-0669	C26133	Knowledge Management: Create a Learning Organiza...	1	395.95	395.95
14	01/22/2016	980001	Guili, M.	4457 Meridith St	97128	Unknown	(619) 562-1334	C29179	Managing Change: The Game for an Executive Retreat	3	275.99	827.97
15	01/22/2016	980001	Guili, M.	4457 Meridith St	97128	Unknown	(619) 562-1334	C34122	A Game of Strategy, Negotiation and Excitement for ...	2	169.95	339.90

5. Code

```
Select      CONVERT(varchar, ord.OrderDate, 101) OrderDate,
            ord.OrderID OrderNumber,
            (cus.LastName + ', ' + SUBSTRING(cus.FirstName,1,1) + '.') CustomerName,
            ISNULL(ord.ShipAddress, cus.Address) ShippingAddress,
            ISNULL(ord.ShipZip, cus.Zip) ShippingCode,
            ISNULL(ord.ShipCountry, ISNULL(cus.Country, 'Unknown')) ShippingCountry,
            dbo.FormatPhoneBasedOnCountry(ord.ShipCountry, ord.ShipPhone, cus.Country, cus.Phone) PhoneNumber,
            ol.ItemID ItemID,
            ite.Description Description,
            it.CategoryDescription,
            ol.Quantity Quantitiy,
            ol.Price Price,
            (ol.Quantity * ol.Price) ExtendedPrice
From        tblOrder ord
Inner Join  tblCustomer cus
On          ord.CustomerID = cus.CustomerID
Inner Join  tblOrderLine ol
On          ord.OrderID = ol.OrderID
Inner Join  tblItem ite
On          ol.ItemID = ite.ItemID
Inner Join  tblItemType it
On          ite.TypeID = it.TypeID
Where      YEAR(ord.OrderDate) = YEAR(GETDATE()) and (MONTH(ord.OrderDate) = 1)
Order By   ord.OrderDate Desc;
```

5. Output

	OrderDate	OrderNumber	CustomerName	ShippingAddress	ShippingCode	ShippingCountry	PhoneNumber	ItemID	Description	CategoryDescription	Quantity	Price	ExtendedPrice
1	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612	A34665	Boggle Deluxe 5x5	Classic Board Games	5	37.95	189.75
2	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612	A34882	Perudo	Classic Board Games	16	11.95	191.20
3	01/29/2016	651222	Martinez, G.	223 North Pinetree Drive	89511	Unknown	(775) 883-7612	B78244	Code Names	Mystery and Thrillers	21	17.99	377.79
4	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	A23441	New York City Monopoly Game Collector's Edition	Classic Board Games	1	29.95	29.95
5	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	A34665	Boggle Deluxe 5x5	Classic Board Games	1	34.95	34.95
6	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	B67123	Tiny Epic Galaxies	Science Fiction and Fantasy	1	39.99	39.99
7	01/26/2016	200335	Rodriguez, K.	Arch 162 Stamford Brook	W6 0SE	UK	441817417500	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	Office and Team Building	1	43.95	43.95
8	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	A23771	Mysterium	Science Fiction and Fantasy	1	145.99	145.99
9	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	A34665	Boggle Deluxe 5x5	Classic Board Games	1	35.95	35.95
10	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	A34882	Perudo	Classic Board Games	1	10.95	10.95
11	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	B67123	Tiny Epic Galaxies	Science Fiction and Fantasy	1	39.99	39.99
12	01/26/2016	300221	Rodriguez, K.	251 Western Avenue Suite 1a	8776	USA	(210) 900-3005	B78244	Code Names	Mystery and Thrillers	1	19.95	19.95
13	01/26/2016	567123	Rodriguez, K.	2276 Brentell Street Suite 201	92128	USA	(858) 344-0669	C26133	Knowledge Management: Create a Learning Organiza...	Office and Team Building	1	395.95	395.95
14	01/22/2016	980001	Guil, M.	4457 Meridith St	97128	Unknown	(619) 562-1334	C29179	Managing Change: The Game for an Executive Retreat	Office and Team Building	3	275.99	827.97
15	01/22/2016	980001	Guil, M.	4457 Meridith St	97128	Unknown	(619) 562-1334	C34122	A Game of Strategy, Negotiation and Excitement for ...	Office and Team Building	2	169.95	339.90

6. Code

```

Select      ol.ItemID 'Item ID',
            ite.Description 'Item Desc',
            SUM(ol.Quantity) 'Total Qty Sold',
            COUNT(ol.OrderID) 'Count of Orders',
            MIN(ol.Price) 'Minimum Price',
            MAX(ol.Price) 'Maximum Price',
            AVG(ol.Price) 'Average Price'

From        tblOrderLine ol
Inner Join   tblItem ite
On          ol.ItemID = ite.ItemID
Group By    ol.ItemID, ite.Description
Order By    ol.ItemID;
```

6. Output

	Item ID	Item Desc	Total Qty Sold	Count of Orders	Minimum Price	Maximum Price	Average Price
1	A23441	New York City Monopoly Game Collector's Edition	64	3	29.95	29.95	29.95
2	A23771	Mysterium	33	4	122.99	145.99	135.24
3	A34665	Boggle Deluxe 5x5	147	6	23.95	37.95	33.625
4	A34882	Perudo	102	4	7.95	11.95	10.20
5	B67123	Tiny Epic Galaxies	53	5	14.95	389.99	103.974
6	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	26	4	40.95	43.95	42.70
7	B78244	Code Names	40	3	17.99	19.95	18.9633
8	C26133	Knowledge Management: Create a Learning Organiza...	21	4	380.00	398.95	392.7125
9	C29179	Managing Change: The Game for an Executive Retreat	16	4	259.95	280.00	268.9725
10	C34122	A Game of Strategy, Negotiation and Excitement for ...	19	4	167.95	269.95	201.9625

7. Code

```
Select      ite.ItemID 'Item ID',
            ite.Description 'Item Desc',
            ISNULL(SUM(ol.Quantity), 0) 'Total Qty Sold',
            COUNT(ol.OrderID) 'Count of Orders',
            ISNULL(MIN(ol.Price), 0) 'Minimum Price',
            ISNULL(MAX(ol.Price), 0) 'Maximum Price',
            ISNULL(AVG(ol.Price), 0) 'Average Price'

From        tblItem ite
Left Outer Join  tblOrderLine ol
On          ite.ItemID = ol.ItemID
Group By    ite.ItemID, ite.Description
Order By    ite.ItemID;
```


7. Output

	Item ID	Item Desc	Total Qty Sold	Count of Orders	Minimum Price	Maximum Price	Average Price
1	A23441	New York City Monopoly Game Collector's Edition	64	3	29.95	29.95	29.95
2	A23771	Mysterium	33	4	122.99	145.99	135.24
3	A34665	Boggle Deluxe 5x5	147	6	23.95	37.95	33.625
4	A34882	Perudo	102	4	7.95	11.95	10.20
5	A45111	How to Host a Murder - An Affair to Dismember	0	0	0.00	0.00	0.00
6	B67123	Tiny Epic Galaxies	53	5	14.95	389.99	103.974
7	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	26	4	40.95	43.95	42.70
8	B78244	Code Names	40	3	17.99	19.95	18.9633
9	B78500	Pandemic Legacy	0	0	0.00	0.00	0.00
10	C26133	Knowledge Management: Create a Learning Organiza...	21	4	380.00	398.95	392.7125
11	C29179	Managing Change: The Game for an Executive Retreat	16	4	259.95	280.00	268.9725
12	C34122	A Game of Strategy, Negotiation and Excitement for ...	19	4	167.95	269.95	201.9625

8. Code

```

Select      ite.ItemID ItemID,
            ite.Description Description,
            ISNULL(CONVERT(varchar, ich.LastCostDate, 107), 'No Date Recorded') 'Last Cost Date',
            ISNULL(ich.LastCost, 0) 'Last Cost Paid'

From        tblItem ite
Left Outer Join  tblItemCostHistory ich
On           ite.ItemID = ich.ItemID
Order By     ite.ItemID Asc, ich.LastCostDate Desc;
```

8. Output

	ItemID	Description	Last Cost Date	Last Cost Paid
1	A23441	New York City Monopoly Game Collector's Edition	Feb 02, 2016	12.50
2	A23441	New York City Monopoly Game Collector's Edition	Jan 05, 2016	10.35
3	A23441	New York City Monopoly Game Collector's Edition	Jul 07, 2015	11.15
4	A23441	New York City Monopoly Game Collector's Edition	Sep 23, 2014	10.88
5	A23441	New York City Monopoly Game Collector's Edition	May 12, 2013	10.50
6	A23441	New York City Monopoly Game Collector's Edition	Jan 06, 2013	10.25
7	A23771	Mysterium	Jul 23, 2013	8.50
8	A34665	Boggle Deluxe 5x5	Dec 28, 2015	14.35
9	A34665	Boggle Deluxe 5x5	Jul 15, 2015	14.50
10	A34665	Boggle Deluxe 5x5	Jan 12, 2015	15.00
11	A34882	Perudo	Feb 05, 2016	12.50
12	A34882	Perudo	Feb 19, 2014	6.50
13	A45111	How to Host a Murder - An Affair to Dismember	No Date Recorded	0.00
14	B67123	Tiny Epic Galaxies	Feb 02, 2016	21.80
15	B67123	Tiny Epic Galaxies	Jan 10, 2016	14.50
16	B67123	Tiny Epic Galaxies	Oct 21, 2015	18.80
17	B67123	Tiny Epic Galaxies	Aug 08, 2015	14.50
18	B67466	Diplomacy: Game of Negotiation, Cunning and Dec...	Sep 12, 2015	31.00
19	B67466	Diplomacy: Game of Negotiation, Cunning and Dec...	Jun 28, 2015	28.90
20	B67466	Diplomacy: Game of Negotiation, Cunning and Dec...	Jul 07, 2014	22.50
21	B78244	Code Names	Jul 15, 2015	14.50
22	B78500	Pandemic Legacy	Feb 10, 2016	22.35
23	B78500	Pandemic Legacy	Nov 25, 2015	21.00
24	B78500	Pandemic Legacy	Jul 15, 2015	18.00
25	B78500	Pandemic Legacy	Mar 21, 2015	18.95
26	C26133	Knowledge Management: Create a Learning Organi...	Feb 15, 2016	212.25
27	C26133	Knowledge Management: Create a Learning Organi...	Sep 18, 2015	215.00
28	C26133	Knowledge Management: Create a Learning Organi...	Jul 23, 2015	225.00
29	C26133	Knowledge Management: Create a Learning Organi...	Jul 13, 2014	200.00
30	C29179	Managing Change: The Game for an Executive Ret...	Jan 17, 2016	158.85
31	C29179	Managing Change: The Game for an Executive Ret...	Aug 07, 2015	160.00
32	C34122	A Game of Strategy, Negotiation and Excitement for...	Feb 02, 2016	58.50
33	C34122	A Game of Strategy, Negotiation and Excitement for...	Feb 06, 2015	51.00
34	C34122	A Game of Strategy, Negotiation and Excitement for...	Feb 06, 2014	48.00
35	C34122	A Game of Strategy, Negotiation and Excitement for...	Feb 06, 2013	45.00

9. Code

```

Select      ite.ItemID ItemID,
            ite.Description Description,
            ISNULL(CONVERT(varchar, ich.LastCostDate, 107), 'No Date Recorded') 'Last Cost Date',
            ISNULL(ich.LastCost, 0) 'Last Cost Paid'

From        tblItem ite
Left Outer Join  tblItemCostHistory ich
On          ite.ItemID = ich.ItemID
Where       ich.LastCostDate = (Select      MAX(LastCostDate)
                                From        tblItemCostHistory ichInner
                                Where       ich.ItemID = ichInner.ItemID)
                                Or LastCostDate IS NULL

Order By    ite.ItemID Asc, ich.LastCostDate Desc;

```

9. Output

	ItemID	Description	Last Cost Date	Last Cost Paid
1	A23441	New York City Monopoly Game Collector's Edition	Feb 02, 2016	12.50
2	A23771	Mysterium	Jul 23, 2013	8.50
3	A34665	Boggle Deluxe 5x5	Dec 28, 2015	14.35
4	A34882	Perudo	Feb 05, 2016	12.50
5	A45111	How to Host a Murder - An Affair to Dismember	No Date Recorded	0.00
6	B67123	Tiny Epic Galaxies	Feb 02, 2016	21.80
7	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	Sep 12, 2015	31.00
8	B78244	Code Names	Jul 15, 2015	14.50
9	B78500	Pandemic Legacy	Feb 10, 2016	22.35
10	C26133	Knowledge Management: Create a Learning Organiza...	Feb 15, 2016	212.25
11	C29179	Managing Change: The Game for an Executive Retreat	Jan 17, 2016	158.85
12	C34122	A Game of Strategy, Negotiation and Excitement for ...	Feb 02, 2016	58.50

10. Code

```
Select      ite.ItemID ItemID,
            ite.Description Description,
            ISNULL(CONVERT(varchar, ich.LastCostDate, 107), 'No Date Recorded') 'Last Cost Date',
            (Select COUNT(ItemID)
             From   tblItemCostHistory ichInner
             Where  ich.ItemID = ichInner.ItemID) 'Count of Purchases',
            ISNULL(ich.LastCost, 0) 'Last Cost Paid',
            ISNULL(ROUND((Select AVG(LastCost)
                          From   tblItemCostHistory ichInner
                          Where  ich.ItemID = ichInner.ItemID), 2), 0) 'Average Last Cost'

From        tblItem ite
Left Outer Join  tblItemCostHistory ich
On           ite.ItemID = ich.ItemID
Where       ich.LastCostDate = (Select MAX(LastCostDate)
                                From   tblItemCostHistory ichInner
                                Where  ich.ItemID = ichInner.ItemID)
                                Or LastCostDate IS NULL

Group By    ite.ItemID, ite.Description, ich.LastCostDate, ich.ItemID, ich.LastCost
Order By    ite.ItemID Asc, ich.LastCostDate Desc;
```

10. Output

	ItemID	Description	Last Cost Date	Count of Purchases	Last Cost Paid	Average Last Cost
1	A23441	New York City Monopoly Game Collector's Edition	Feb 02, 2016	6	12.50	10.94
2	A23771	Mysterium	Jul 23, 2013	1	8.50	8.50
3	A34665	Boggle Deluxe 5x5	Dec 28, 2015	3	14.35	14.62
4	A34882	Perudo	Feb 05, 2016	2	12.50	9.50
5	A45111	How to Host a Murder - An Affair to Dismember	No Date Recorded	0	0.00	0.00
6	B67123	Tiny Epic Galaxies	Feb 02, 2016	4	21.80	17.40
7	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.	Sep 12, 2015	3	31.00	27.47
8	B78244	Code Names	Jul 15, 2015	1	14.50	14.50
9	B78500	Pandemic Legacy	Feb 10, 2016	4	22.35	20.08
10	C26133	Knowledge Management: Create a Learning Organiza...	Feb 15, 2016	4	212.25	213.06
11	C29179	Managing Change: The Game for an Executive Retreat	Jan 17, 2016	2	158.85	159.43
12	C34122	A Game of Strategy, Negotiation and Excitement for ...	Feb 02, 2016	4	58.50	50.63

11. Code

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Select      ol.OrderID,
            ol.ItemID,
            ol.Price,
            ol.Quantity,
            ISNULL((Select      SUM(QtyShipped)
                          From    tblShipLine slInner
                          Where    sl.OrderID = slInner.OrderID And sl.ItemID = slInner.ItemID), 0) TotalQtyShipped,
            ol.Quantity - ISNULL((Select      SUM(QtyShipped)
                          From    tblShipLine slInner
                          Where    sl.OrderID = slInner.OrderID And sl.ItemID = slInner.ItemID), 0) LeftToShip

From        tblOrderLine ol
Left Outer Join  tblShipLine sl
On           ol.OrderID = sl.OrderID And ol.ItemID = sl.ItemID
Group By     ol.OrderID, ol.ItemID, ol.Price, ol.Quantity, sl.OrderID, sl.ItemID
Order By     ol.OrderID, ol.ItemID;
```

11. Output

	OrderID	ItemID	Price	Quantity	TotalQtyShipped	LeftToShip
1	123000	A23441	29.95	8	8	0
2	123000	A34665	37.95	30	32	-2
3	123000	B67123	389.99	5	5	0
4	200335	A23441	29.95	1	6	-5
5	200335	A34665	34.95	1	0	1
6	200335	B67123	39.99	1	0	1
7	200335	B67466	43.95	1	1	0
8	223344	A23441	29.95	55	28	27
9	223344	A23771	122.99	15	45	-30
10	223344	A34665	23.95	100	110	-10
11	223344	A34882	7.95	35	35	0
12	223344	B67123	34.95	25	25	0
13	223344	B67466	40.95	15	0	15
14	300221	A23771	145.99	1	1	0
15	300221	A34665	35.95	1	1	0
16	300221	A34882	10.95	1	1	0
17	300221	B67123	39.99	1	1	0
18	300221	B78244	19.95	1	1	0
19	400001	C26133	395.95	1	0	1
20	445511	C34122	269.95	3	3	0
21	450137	A23771	135.99	16	0	16
22	450137	A34665	31.00	10	10	0
23	450137	A34882	9.95	50	15	35
24	450137	B67123	14.95	21	29	-8
25	450137	B67466	41.95	9	9	0

26	450137	C26133	398.95	4	0	4
27	450137	C34122	167.95	6	0	6
28	567123	C26133	395.95	1	0	1
29	651222	A34665	37.95	5	5	0
30	651222	A34882	11.95	16	68	-52
31	651222	B78244	17.99	21	21	0
32	671100	C29179	259.95	1	1	0
33	781206	B67466	43.95	1	4	-3
34	781206	C29179	280.00	2	0	2
35	892211	C26133	380.00	15	0	15
36	892211	C29179	259.95	10	10	0
37	892211	C34122	200.00	8	5	3
38	980001	C29179	275.99	3	3	0
39	980001	C34122	169.95	2	2	0
40	983983	A23771	135.99	1	0	1
41	983983	B78244	18.95	18	0	18

12. Code

```
Select      ol.OrderID,
            (cus.LastName + ', ' + cus.FirstName) CustomerName,
            ol.ItemID,
            ol.Price,
            ol.Quantity,
            ISNULL((Select SUM(QtyShipped)
                    From   tblShipLine slInner
                    Where sl.OrderID = slInner.OrderID And sl.ItemID = slInner.ItemID), 0) TotalQtyShipped,
            ol.Quantity - ISNULL((Select SUM(QtyShipped)
                    From   tblShipLine slInner
                    Where   sl.OrderID = slInner.OrderID And sl.ItemID = slInner.ItemID), 0) LeftToShip

From      tblOrderLine ol
Left Outer Join  tblShipLine sl
On           ol.OrderID = sl.OrderID And ol.ItemID = sl.ItemID
Inner Join    tblOrder ord
On           ol.OrderID = ord.OrderID
Inner Join    tblCustomer cus
On           ord.CustomerID = cus.CustomerID
Group By      ol.OrderID, cus.LastName, cus.FirstName, ol.ItemID, ol.Price, ol.Quantity, sl.OrderID, sl.ItemID
Order By      ol.OrderID, ol.ItemID;
```


12. Output

	OrderID	CustomerName	ItemID	Price	Quantity	TotalQtyShipped	LeftToShip
1	123000	Barrington, Margaret	A23441	29.95	8	8	0
2	123000	Barrington, Margaret	A34665	37.95	30	32	-2
3	123000	Barrington, Margaret	B67123	389.99	5	5	0
4	200335	Rodriguez, Karen	A23441	29.95	1	6	-5
5	200335	Rodriguez, Karen	A34665	34.95	1	0	1
6	200335	Rodriguez, Karen	B67123	39.99	1	0	1
7	200335	Rodriguez, Karen	B67466	43.95	1	1	0
8	223344	Candriller, Kathy	A23441	29.95	55	28	27
9	223344	Candriller, Kathy	A23771	122.99	15	45	-30
10	223344	Candriller, Kathy	A34665	23.95	100	110	-10
11	223344	Candriller, Kathy	A34882	7.95	35	35	0
12	223344	Candriller, Kathy	B67123	34.95	25	25	0
13	223344	Candriller, Kathy	B67466	40.95	15	0	15
14	300221	Rodriguez, Karen	A23771	145.99	1	1	0
15	300221	Rodriguez, Karen	A34665	35.95	1	1	0
16	300221	Rodriguez, Karen	A34882	10.95	1	1	0
17	300221	Rodriguez, Karen	B67123	39.99	1	1	0
18	300221	Rodriguez, Karen	B78244	19.95	1	1	0
19	400001	Jones, Martin	C26133	395.95	1	0	1
20	445511	Jones, Martin	C34122	269.95	3	3	0
21	450137	Rodriguez, Karen	A23771	135.99	16	0	16
22	450137	Rodriguez, Karen	A34665	31.00	10	10	0
23	450137	Rodriguez, Karen	A34882	9.95	50	15	35
24	450137	Rodriguez, Karen	B67123	14.95	21	29	-8
25	450137	Rodriguez, Karen	B67466	41.95	9	9	0

26	450137	Rodriguez, Karen	C26133	398.95	4	0	4
27	450137	Rodriguez, Karen	C34122	167.95	6	0	6
28	567123	Rodriguez, Karen	C26133	395.95	1	0	1
29	651222	Martinez, Guadalu...	A34665	37.95	5	5	0
30	651222	Martinez, Guadalu...	A34882	11.95	16	68	-52
31	651222	Martinez, Guadalu...	B78244	17.99	21	21	0
32	671100	Jones, Martin	C29179	259.95	1	1	0
33	781206	Argiento, Bud	B67466	43.95	1	4	-3
34	781206	Argiento, Bud	C29179	280.00	2	0	2
35	892211	Dao, Phong	C26133	380.00	15	0	15
36	892211	Dao, Phong	C29179	259.95	10	10	0
37	892211	Dao, Phong	C34122	200.00	8	5	3
38	980001	Guili, Mary Anne	C29179	275.99	3	3	0
39	980001	Guili, Mary Anne	C34122	169.95	2	2	0
40	983983	Jones, Martin	A23771	135.99	1	0	1
41	983983	Jones, Martin	B78244	18.95	18	0	18

13. Code

```
Select      ol.OrderID,
            (cus.LastName + ', ' + cus.FirstName) CustomerName,
            ol.ItemID,
            ite.Description,
            it.CategoryDescription,
            ite.ListPrice,
            ol.Price,
            ol.Quantity,
            ISNULL((Select SUM(QtyShipped)
                      From   tblShipLine slInner
                      Where sl.OrderID = slInner.OrderID And sl.ItemID = slInner.ItemID), 0) TotalQtyShipped,
            ol.Quantity - ISNULL((Select SUM(QtyShipped)
                      From   tblShipLine slInner
                      Where   sl.OrderID = slInner.OrderID And sl.ItemID = slInner.ItemID), 0) LeftToShip

From        tblOrderLine ol
Left Outer Join  tblShipLine sl
On          ol.OrderID = sl.OrderID And ol.ItemID = sl.ItemID
Inner Join    tblOrder ord
On          ol.OrderID = ord.OrderID
Inner Join    tblCustomer cus
On          ord.CustomerID = cus.CustomerID
Inner Join    tblItem ite
On          ol.ItemID = ite.ItemID
Inner Join    tblItemType it
On          ite.TypeID = it.TypeID
Group By     ol.OrderID, cus.LastName, cus.FirstName, ol.ItemID, ite.Description, it.CategoryDescription,
            ite.ListPrice, ol.Price, ol.Quantity, sl.OrderID, sl.ItemID
Order By     ol.OrderID, ol.ItemID;
```

13. Output

	OrderID	CustomerName	ItemID	Description	CategoryDescription	ListPrice	Price	Quantity	TotalQtyShipped	LeftToShip
1	123000	Barrington, Margaret	A23441	New York City Monopoly Game Collector's Edition	Classic Board Games	29.95	29.95	8	8	0
2	123000	Barrington, Margaret	A34665	Boggle Deluxe 5x5	Classic Board Games	34.95	37.95	30	32	-2
3	123000	Barrington, Margaret	B67123	Tiny Epic Galaxies	Science Fiction and Fantasy	39.99	389.99	5	5	0
4	200335	Rodriguez, Karen	A23441	New York City Monopoly Game Collector's Edition	Classic Board Games	29.95	29.95	1	6	-5
5	200335	Rodriguez, Karen	A34665	Boggle Deluxe 5x5	Classic Board Games	34.95	34.95	1	0	1
6	200335	Rodriguez, Karen	B67123	Tiny Epic Galaxies	Science Fiction and Fantasy	39.99	39.99	1	0	1
7	200335	Rodriguez, Karen	B67466	Diplomacy: Game of Negotiation, Cunning and Dec...	Office and Team Building	43.95	43.95	1	1	0
8	223344	Candriller, Kathy	A23441	New York City Monopoly Game Collector's Edition	Classic Board Games	29.95	29.95	55	28	27
9	223344	Candriller, Kathy	A23771	Mysterium	Science Fiction and Fantasy	132.99	122.99	15	45	-30
10	223344	Candriller, Kathy	A34665	Boggle Deluxe 5x5	Classic Board Games	34.95	23.95	100	110	-10
11	223344	Candriller, Kathy	A34882	Perudo	Classic Board Games	10.95	7.95	35	35	0
12	223344	Candriller, Kathy	B67123	Tiny Epic Galaxies	Science Fiction and Fantasy	39.99	34.95	25	25	0
13	223344	Candriller, Kathy	B67466	Diplomacy: Game of Negotiation, Cunning and Dec...	Office and Team Building	43.95	40.95	15	0	15
14	300221	Rodriguez, Karen	A23771	Mysterium	Science Fiction and Fantasy	132.99	145.99	1	1	0
15	300221	Rodriguez, Karen	A34665	Boggle Deluxe 5x5	Classic Board Games	34.95	35.95	1	1	0
16	300221	Rodriguez, Karen	A34882	Perudo	Classic Board Games	10.95	10.95	1	1	0
17	300221	Rodriguez, Karen	B67123	Tiny Epic Galaxies	Science Fiction and Fantasy	39.99	39.99	1	1	0
18	300221	Rodriguez, Karen	B78244	Code Names	Mystery and Thrillers	19.95	19.95	1	1	0
19	400001	Jones, Martin	C26133	Knowledge Management: Create a Learning Organi...	Office and Team Building	395.95	395.95	1	0	1
20	445511	Jones, Martin	C34122	A Game of Strategy, Negotiation and Excitement for...	Office and Team Building	169.95	269.95	3	3	0
21	450137	Rodriguez, Karen	A23771	Mysterium	Science Fiction and Fantasy	132.99	135.99	16	0	16
22	450137	Rodriguez, Karen	A34665	Boggle Deluxe 5x5	Classic Board Games	34.95	31.00	10	10	0
23	450137	Rodriguez, Karen	A34882	Perudo	Classic Board Games	10.95	9.95	50	15	35
24	450137	Rodriguez, Karen	B67123	Tiny Epic Galaxies	Science Fiction and Fantasy	39.99	14.95	21	29	-8
25	450137	Rodriguez, Karen	B67466	Diplomacy: Game of Negotiation, Cunning and Dec...	Office and Team Building	43.95	41.95	9	9	0

26	450137	Rodriguez, Karen	C26133	Knowledge Management: Create a Learning Organi...	Office and Team Building	395.95	398.95	4	0	4
27	450137	Rodriguez, Karen	C34122	A Game of Strategy, Negotiation and Excitement for...	Office and Team Building	169.95	167.95	6	0	6
28	567123	Rodriguez, Karen	C26133	Knowledge Management: Create a Learning Organi...	Office and Team Building	395.95	395.95	1	0	1
29	651222	Martinez, Guadalu...	A34665	Boggle Deluxe 5x5	Classic Board Games	34.95	37.95	5	5	0
30	651222	Martinez, Guadalu...	A34882	Perudo	Classic Board Games	10.95	11.95	16	68	-52
31	651222	Martinez, Guadalu...	B78244	Code Names	Mystery and Thrillers	19.95	17.99	21	21	0
32	671100	Jones, Martin	C29179	Managing Change: The Game for an Executive Ret...	Office and Team Building	259.95	259.95	1	1	0
33	781206	Argiento, Bud	B67466	Diplomacy: Game of Negotiation, Cunning and Dec...	Office and Team Building	43.95	43.95	1	4	-3
34	781206	Argiento, Bud	C29179	Managing Change: The Game for an Executive Ret...	Office and Team Building	259.95	280.00	2	0	2
35	892211	Dao, Phong	C26133	Knowledge Management: Create a Learning Organi...	Office and Team Building	395.95	380.00	15	0	15
36	892211	Dao, Phong	C29179	Managing Change: The Game for an Executive Ret...	Office and Team Building	259.95	259.95	10	10	0
37	892211	Dao, Phong	C34122	A Game of Strategy, Negotiation and Excitement for...	Office and Team Building	169.95	200.00	8	5	3
38	980001	Guili, Mary Anne	C29179	Managing Change: The Game for an Executive Ret...	Office and Team Building	259.95	275.99	3	3	0
39	980001	Guili, Mary Anne	C34122	A Game of Strategy, Negotiation and Excitement for...	Office and Team Building	169.95	169.95	2	2	0
40	983983	Jones, Martin	A23771	Mysterium	Science Fiction and Fantasy	132.99	135.99	1	0	1
41	983983	Jones, Martin	B78244	Code Names	Mystery and Thrillers	19.95	18.95	18	0	18

14. Code

```
Select      ol.OrderID,
            (cus.LastName + ', ' + cus.FirstName) CustomerName,
            ol.ItemID,
            ite.Description,
            it.CategoryDescription,
            ite.ListPrice,
            ol.Price,
            ol.Quantity,
            ISNULL((Select      SUM(QtyShipped)
                          From      tblShipLine slInner
                          Where      sl.OrderID = slInner.OrderID And sl.ItemID = slInner.ItemID), 0) TotalQtyShipped,
            ol.Quantity - ISNULL((Select      SUM(QtyShipped)
                          From      tblShipLine slInner
                          Where      sl.OrderID = slInner.OrderID And sl.ItemID = slInner.ItemID), 0) LeftToShip

From      tblOrderLine ol
Left Outer Join  tblShipLine sl
On      ol.OrderID = sl.OrderID And ol.ItemID = sl.ItemID
Inner Join  tblOrder ord
On      ol.OrderID = ord.OrderID
Inner Join  tblCustomer cus
On      ord.CustomerID = cus.CustomerID
Inner Join  tblItem ite
On      ol.ItemID = ite.ItemID
Inner Join  tblItemType it
On      ite.TypeID = it.TypeID
Group By   ol.OrderID, cus.LastName, cus.FirstName, ol.ItemID, ite.Description, it.CategoryDescription,
            ite.ListPrice, ol.Price, ol.Quantity, sl.OrderID, sl.ItemID

Having      (ol.Quantity - ISNULL((Select      SUM(QtyShipped)
                          From      tblShipLine slInner
                          Where      sl.OrderID = slInner.OrderID And sl.ItemID = slInner.ItemID), 0)) < 0

Order By   ol.OrderID, ol.ItemID;
```

14. Output

	OrderID	CustomerName	ItemID	Description	CategoryDescription	ListPrice	Price	Quantity	TotalQtyShipped	LeftToShip
1	123000	Barrington, Margaret	A34665	Boggle Deluxe 5x5	Classic Board Games	34.95	37.95	30	32	-2
2	200335	Rodriguez, Karen	A23441	New York City Monopoly Game Collector's Edition	Classic Board Games	29.95	29.95	1	6	-5
3	223344	Candriller, Kathy	A23771	Mysterium	Science Fiction and Fantasy	132.99	122.99	15	45	-30
4	223344	Candriller, Kathy	A34665	Boggle Deluxe 5x5	Classic Board Games	34.95	23.95	100	110	-10
5	450137	Rodriguez, Karen	B67123	Tiny Epic Galaxies	Science Fiction and Fantasy	39.99	14.95	21	29	-8
6	651222	Martinez, Guadalupe	A34882	Perudo	Classic Board Games	10.95	11.95	16	68	-52
7	781206	Argiento, Bud	B67466	Diplomacy: Game of Negotiation, Cunning and Dec...	Office and Team Building	43.95	43.95	1	4	-3

15. Code

```

Select      (cus.LastName + ', ' + cus.FirstName) CustomerName,
            sl.OrderID,
            sl.ItemID,
            ite.Description
From        tblCustomer cus
Inner Join  tblOrder ord
On          cus.CustomerID = ord.CustomerID
Inner Join  tblOrderLine ol
On          ord.OrderID = ol.OrderID
Inner Join  tblShipLine sl
On          ol.OrderID = sl.OrderID And ol.ItemID = sl.ItemID
Inner Join  tblItem ite
On          ol.ItemID = ite.ItemID
Where       UPPER(sl.MethodShipped) = 'FEDEX'
Order By   cus.LastName;
```

15. Output

	CustomerName	OrderID	ItemID	Description
1	Candriller, Kathy	223344	A34882	Perudo
2	Guili, Mary Anne	980001	C34122	A Game of Strategy, Negotiation and Excitement for ...
3	Guili, Mary Anne	980001	C29179	Managing Change: The Game for an Executive Retreat
4	Jones, Martin	445511	C34122	A Game of Strategy, Negotiation and Excitement for ...
5	Martinez, Guadalupe	651222	A34882	Perudo
6	Rodriguez, Karen	450137	A34665	Boggle Deluxe 5x5
7	Rodriguez, Karen	450137	B67466	Diplomacy: Game of Negotiation, Cunning and Deceit.