

```
-- CREATING A DATABASE --
```

```
CREATE DATABASE HertfordshireCounty  
;
```

```
-- USING A DATABASE --
```

```
USE HertfordshireCounty  
;
```

```
CREATE TABLE Residents (  
    ResidentID INT PRIMARY KEY,  
    FirstName NVARCHAR(50),  
    LastName NVARCHAR(50),  
    Age INT,  
    AddressID INT  
);
```

```
CREATE TABLE Properties (  
    PropertyID INT PRIMARY KEY,  
    AddressID INT,  
    Street NVARCHAR(100),  
    City NVARCHAR(50),  
    PostalCode NVARCHAR(10),  
    Latitude DECIMAL(9, 6),  
    Longitude DECIMAL(9, 6)  
);
```

```
CREATE TABLE Jobs (  
    JobID INT PRIMARY KEY,  
    ResidentID INT,  
    JobTitle NVARCHAR(50),  
    Company NVARCHAR(50),  
    Salary DECIMAL(18, 2)  
);
```

```
CREATE TABLE Schools (  
    SchoolID INT PRIMARY KEY,  
    SchoolName NVARCHAR(100),  
    AddressID INT,  
    Latitude DECIMAL(9, 6),  
    Longitude DECIMAL(9, 6)  
);
```

```
-- INSERTING DATA --
```

```
INSERT INTO Residents VALUES  
(1, 'Adeola', 'Oluwaseun', 35, 101),  
(2, 'Li', 'Wei', 28, 102),  
(3, 'Priya', 'Singh', 45, 103),  
(4, 'Aisha', 'Khan', 32, 104),  
(5, 'John', 'Smith', 40, 105),  
(6, 'Chinedu', 'Nwosu', 29, 106),  
(7, 'Wang', 'Jie', 38, 107),
```

```
(8, 'Anil', 'Patel', 50, 108),
(9, 'Fatima', 'Ahmed', 33, 109),
(10, 'James', 'Brown', 25, 110);
```

INSERT INTO Properties VALUES

```
(101, 101, '123 Elm St', 'Watford', 'WD17 1AA', 51.655395, -0.396682),
(102, 102, '456 Oak St', 'St Albans', 'AL1 2AB', 51.75159, -0.33604),
(103, 103, '789 Pine St', 'Hertford', 'SG14 1HZ', 51.79679, -0.07847),
(104, 104, '101 Maple St', 'Hemel Hempstead', 'HP1 1HW', 51.75232, -0.47204),
(105, 105, '202 Birch St', 'Hatfield', 'AL10 9AB', 51.76266, -0.22463),
(106, 106, '303 Cedar St', 'Stevenage', 'SG1 1XZ', 51.90345, -0.20189),
(107, 107, '404 Spruce St', 'Welwyn Garden City', 'AL8 6YX', 51.80352, -0.20685),
(108, 108, '505 Fir St', 'Cheshunt', 'EN8 9XY', 51.70109, -0.03452),
(109, 109, '606 Palm St', 'Bishop's Stortford', 'CM23 3XY', 51.87151, 0.16519),
(110, 110, '707 Willow St', 'Hoddesdon', 'EN11 8JY', 51.75912, -0.01133);
```

INSERT INTO Jobs VALUES

```
(1, 1, 'Software Engineer', 'TechCorp', 55000),
(2, 2, 'Data Analyst', 'DataCorp', 48000),
(3, 3, 'Project Manager', 'BuildCorp', 75000),
(4, 4, 'HR Manager', 'PeopleCorp', 62000),
(5, 5, 'Marketing Specialist', 'MarketCorp', 50000),
(6, 6, 'Sales Associate', 'SellCorp', 40000),
(7, 7, 'Product Manager', 'ProdCorp', 68000),
(8, 8, 'Consultant', 'ConsultCorp', 72000),
(9, 9, 'Research Scientist', 'ResearchCorp', 77000),
(10, 10, 'Financial Analyst', 'FinanceCorp', 54000);
```

INSERT INTO Schools VALUES

```
(1, 'Watford Grammar School', 101, 51.65452, -0.39553),
(2, 'St Albans High School', 102, 51.75194, -0.33615),
(3, 'Hertford East School', 103, 51.79653, -0.07782),
(4, 'Hemel Hempstead School', 104, 51.75196, -0.47115),
(5, 'Hatfield Academy', 105, 51.76234, -0.22401),
(6, 'Stevenage Primary', 106, 51.90329, -0.20095),
(7, 'Welwyn Garden School', 107, 51.80344, -0.20621),
(8, 'Cheshunt Learning Centre', 108, 51.70058, -0.03391),
(9, 'Bishop's Stortford College', 109, 51.87126, 0.16597),
(10, 'Hoddesdon School', 110, 51.75877, -0.01077);
```

-- SELECT STATEMENT --

```
SELECT * FROM Residents
;
```

-- SELECT DISTINCT --

```
SELECT DISTINCT City FROM Properties
;
```

-- WHERE CLAUSE --

```
SELECT * FROM Residents WHERE Age > 30
;
```

-- Comparison operators --

```
SELECT * FROM Jobs WHERE Salary >= 50000
;
```

-- LOGICAL OPERATORS AND, OR, NOT --

```
SELECT * FROM Residents
WHERE Age > 25 AND AddressID = 101
;
```

```
SELECT * FROM Jobs
WHERE JobTitle = 'Software Engineer' OR Salary > 50000
;
```

```
SELECT * FROM Properties
WHERE NOT City = 'Watford'
;
```

-- LIKE Statement --

```
SELECT * FROM Residents
WHERE LastName LIKE 'S%'
;
```

-- GROUP BY and ORDER BY --

```
SELECT City, COUNT(*) AS NumProperties
FROM Properties GROUP BY City
;
```

```
SELECT * FROM Jobs
ORDER BY Salary DESC
;
```

-- HAVING CLAUSE --

```
SELECT City, COUNT(*) AS NumProperties
FROM Properties
GROUP BY City
HAVING COUNT(*) > 1
;
```

-- LIMIT and AS --

```
SELECT TOP 2 * FROM Residents
;
```

```
SELECT FirstName AS GivenName, LastName AS Surname
FROM Residents
;
```

-- JOINS --

```
SELECT R.FirstName, R.LastName, P.City FROM Residents R
JOIN Properties P ON R.AddressID = P.AddressID
;
```

```
SELECT R.FirstName, R.LastName, P.Street, J.JobTitle, S.SchoolName
FROM Residents R
JOIN Properties P ON R.AddressID = P.AddressID
JOIN Jobs J ON R.ResidentID = J.ResidentID
JOIN Schools S ON P.AddressID = S.AddressID
;
```

-- UNIONS --

```
SELECT FirstName, LastName
FROM Residents
UNION
SELECT JobTitle, Company
FROM Jobs
;
```

-- String Functions --

```
SELECT LEN(FirstName) AS NameLength
FROM Residents
;
```

```
SELECT UPPER(LastName)
FROM Residents
;
```

```
SELECT LOWER(LastName)
FROM Residents
;
```

```
SELECT LTRIM(RTRIM(FirstName))
FROM Residents
;
```

```
SELECT LEFT(FirstName, 3)
FROM Residents
;
```

```
SELECT RIGHT(LastName, 3)
FROM Residents;
```

```
SELECT SUBSTRING(FirstName, 1, 3)
FROM Residents
;
```

```
SELECT REPLACE(FirstName, 'o', 'a')
FROM Residents
;
```

```
SELECT CHARINDEX('S', LastName)
```

```

FROM Residents
;

SELECT CONCAT(FirstName, ' ', LastName) AS FullName
FROM Residents
;

-- CASE Statements --

SELECT FirstName,
CASE
    WHEN Age < 18 THEN 'Minor'
    WHEN Age BETWEEN 18 AND 64 THEN 'Adult'
    ELSE 'Senior'
END AS AgeGroup
FROM Residents
;

-- SUBQUERY --

SELECT FirstName, LastName
FROM Residents
WHERE ResidentID IN
(SELECT ResidentID FROM Jobs WHERE Salary > 50000)
;

-- WINDOW FUNCTIONS --

SELECT FirstName, LastName, Salary,
    RANK() OVER (ORDER BY Salary DESC) AS SalaryRank
FROM Jobs J
JOIN Residents R ON J.ResidentID = R.ResidentID
;

-- CREATE VIEW --

CREATE VIEW ResidentJobPropertyView AS
SELECT R.FirstName, R.LastName, R.Age, P.City, P.Street, P.Latitude, P.Longitude,
J.JobTitle, J.Company, J.Salary, S.SchoolName
FROM Residents R
JOIN Properties P ON R.AddressID = P.AddressID
JOIN Jobs J ON R.ResidentID = J.ResidentID
JOIN Schools S ON P.AddressID = S.AddressID
;

SELECT *
FROM ResidentJobPropertyView
;

```

FirstName	LastName	Nationality	Age	City	Street	Latitude	Longitude	JobTitle	Company	Salary	School Name
Adeola	Oluwaseun	Nigerian	35	Watford	123 Elm St	51.655395	-0.396682	Software Engineer	TechCorp	£55,000.00	Watford Grammar School
Li	Wei	Chinese	28	St Albans	456 Oak St	51.75159	-0.33604	Data Analyst	DataCorp	£48,000.00	St Albans High School
Priya	Singh	Indian	45	Hertford	789 Pine St	51.79679	-0.07847	Project Manager	BuildCorp	£75,000.00	Hertford East School
Aisha	Khan	Pakistani	32	Hemel Hempstead	101 Maple St	51.75232	-0.47204	HR Manager	PeopleCorp	£62,000.00	Hemel Hempstead School
John	Smith	British	40	Hatfield	202 Birch St	51.76266	-0.22463	Marketing Specialist	MarketCorp	£50,000.00	Hatfield Academy
Chinedu	Nwosu	Nigerian	29	Stevenage	303 Cedar St	51.90345	-0.20189	Sales Associate	SellCorp	£40,000.00	Stevenage Primary
Wang	Jie	Chinese	38	Welwyn Garden City	404 Spruce St	51.80352	-0.20685	Product Manager	ProdCorp	£68,000.00	Welwyn Garden School
Anil	Patel	Indian	50	Cheshunt	505 Fir St	51.70109	-0.03452	Consultant	ConsultCorp	£72,000.00	Cheshunt Learning Centre
Fatima	Ahmed	Pakistani	33	Bishop's Stortford	606 Palm St	51.87151	0.16519	Research Scientist	ResearchCorp	£77,000.00	Bishop's Stortford College
James	Brown	British	25	Hoddesdon	707 Willow St	51.75912	-0.01133	Financial Analyst	FinanceCorp	£54,000.00	Hoddesdon School

Row Labels	Sum of Age
Anil	50
Indian	50
Priya	45
Indian	45
John	40
British	40
Wang	38
Chinese	38
Adeola	35
Nigerian	35
Fatima	33
Pakistani	33
Aisha	32
Pakistani	32
Chinedu	29
Nigerian	29
Li	28
Chinese	28
James	25
British	25
Grand Total	355

Row Labels	Sum of Salary
Sales Associate	£40,000.00
Data Analyst	£48,000.00
Marketing Spec	£50,000.00
Financial Analys	£54,000.00
Software Engin	£55,000.00
HR Manager	£62,000.00
Product Manag	£68,000.00
Consultant	£72,000.00
Project Manage	£75,000.00
Research Scient	£77,000.00
Grand Total	£601,000.00

Row Labels	Sum of Salary
British	£104,000.00
Chinese	£116,000.00
Indian	£147,000.00
Nigerian	£95,000.00
Pakistani	£139,000.00
Grand Total	£601,000.00

Row Labels	Count of Full Name
British	2
Chinese	2
Indian	2
Nigerian	2
Pakistani	2
Grand Total	10

# Diverse Demographics and Economic Insights of Hertfordshire *(sample data)*

National...

British

Chinese

Indian

Nigerian

Pakistani

City

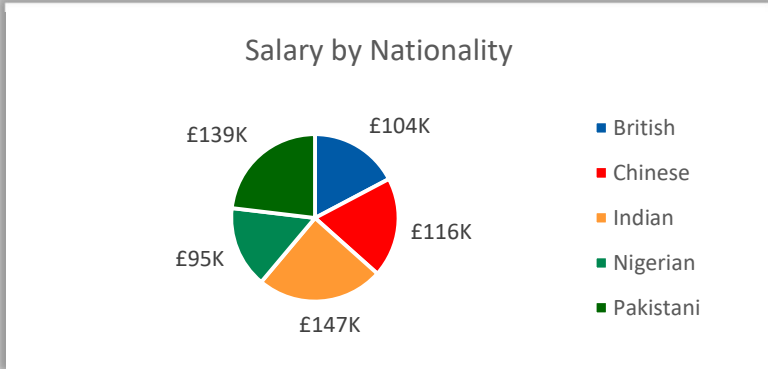
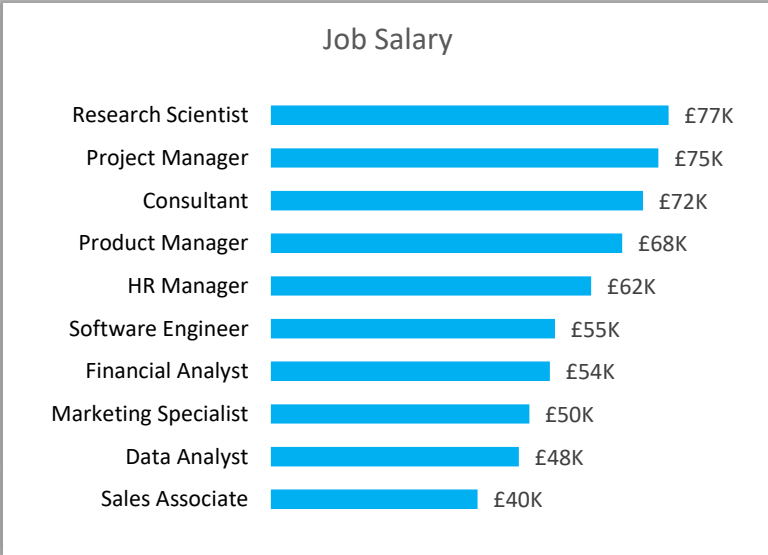
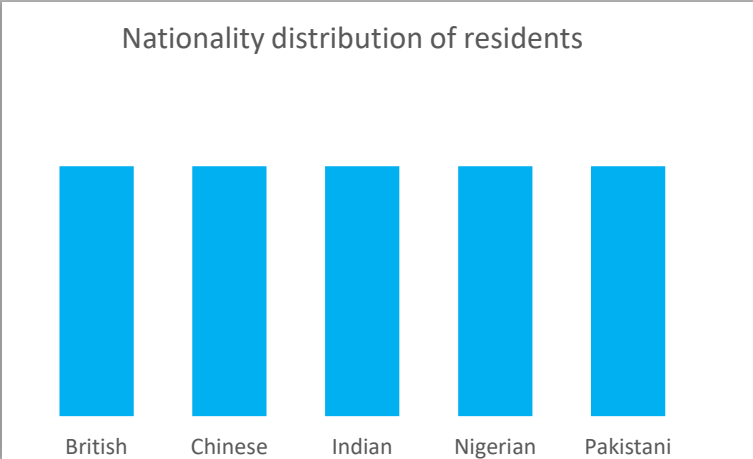
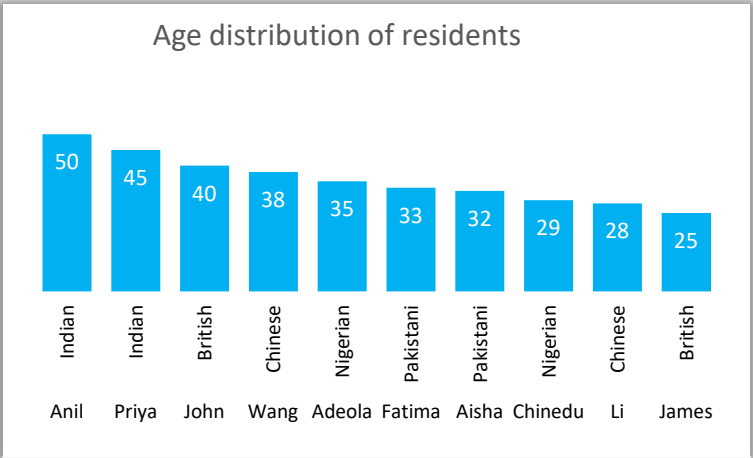
Bishop's St...

Cheshunt

Hatfield

Hemel He...

Hertford





# Diverse Demographics and Economic Insights of Hertfordshire

(sample data)

City

All

Nationality

All

