Some SQL functions

CONCAT, CAST functions

- **CONCAT**
  - Merge columns in your table output: Show staff and their date of birth into one column.

```
SELECT CONCAT(StaffName, ' was born on ', DateOfBirth)
AS 'Staff date of birth'
  FROM Staff;
```

Staff date of birth
Buffy Winters was born on 1987-09-15
Teddy Bear was born on 1983-12-03
John Smith was born on 1972-09-20
Jane Doe was born on 1969-01-25
Jacek Jones was born on 1984-10-19
Mohammad Awrangjeb was born on 1977-11-21
Rupam Deb was born on 1980-10-21
Md Polash was born on 1981-11-25
Teddy Bear was born on 1983-12-03
Fred Smith was born on 1956-06-30

- **CAST**
  - Convert the data type: Change budget from DOUBLE to DECIMAL(9,2). Also, rename the budget column as ‘Annual Budget’ and show the output in descending order of the ‘Annual Budget’.

```
SELECT DepartmentName, CAST(Budget AS DECIMAL(9,2)) AS
'Annual Budget'
FROM DEPARTMENT
ORDER BY 'Annual Budget' DESC;
```

DepartmentName	Annual Budget
Sales	5005000.00
Marketing	509000.00
Finance	650000.00
Accounting	360000.00
Human Resource	550000.00

CONCAT, CAST functions

- **CONCAT & CAST**
  - Display staff names and their annual salary. Sort the output in ascending order of their salary and append a dollar sign ($) at the beginning of everyone's salary.

```
SELECT StaffName, CONCAT('$', CAST(Salary AS CHAR(12))) AS 'Annual Salary'
From Staff
ORDER BY Salary;
```

StaffName	Annual Salary
John Smith	$25000.00
Fred Smith	$25125.02
Buffy Winters	$27000.00
Jacek Jones	$35000.00
Mohammad Awrangjeb	$35000.00
Md Polash	$38000.00
Jane Doe	$55000.00
Rupam Deb	$55000.00
Teddy Bear	$87125.02
Teddy Bear	$87125.02

AVG, MAX, MIN

- **AVG**
  - Find the average budget of all departments.

```
SELECT AVG(Budget)
FROM department;
```

AVG(Budget)
1414800

  - Alternative solution:

```
SELECT CONCAT('$',CAST((AVG(Budget)) AS CHAR(10))) AS 'Average department budget'
FROM department;
```

Average department budget
$1414800

- **MAX**
  - Find the maximum budget of all departments.

```
SELECT MAX(Budget) AS 'Maximum Department budget'
FROM department;
```

Maximum Department budget
5005000

  - Find alternative solution using the LIMIT command.

```
SELECT Budget AS 'Maximum Department budget'
FROM department
ORDER BY Budget DESC
LIMIT 0,1;
```

Maximum Department budget
5005000

- **MIN**
  - Do the same as above for the minimum budget using the MIN function

COUNT, SUM, MAX, MIN

- **COUNT**
  - Find number of departments whose budget is less than $1m.

```
SELECT COUNT(*) AS 'Number of departments with budget < $1m'
FROM department
WHERE Budget < 1000000;
```

Number of department with budget < $1m
4

  - Find the number of staff.

```
SELECT COUNT(*) AS 'Number of staff'
FROM staff;
```

Number of staff
10

- **SUM**
  - Find total budget of all departments

```
SELECT SUM(Budget) AS 'Total budget $'
FROM department;
```

Total budget $
7074000

    - Alternative solution:

```
SELECT CONCAT('$', CAST(SUM(Budget) AS CHAR(10))) AS 'Total budget'
FROM department;
```

Total budget
$7074000

Thank you