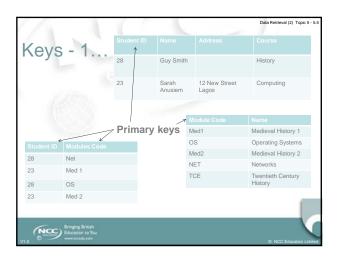
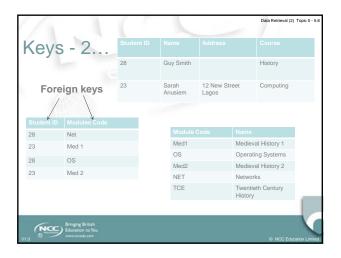


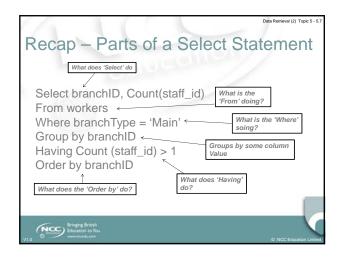
Scope and Coverage This topic will cover: Referential integrity in relational databases Types of joins Retrieving data using joins Retrieving data using sub-queries

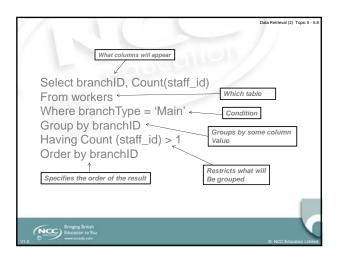
Learning Outcomes By the end of this topic students will be able to: Outline the concept of referential integrity and say why it is important in a relational database Understand how to retrieve data from one or more tables using join Understand how to retrieve data from one or more tables using sub-queries

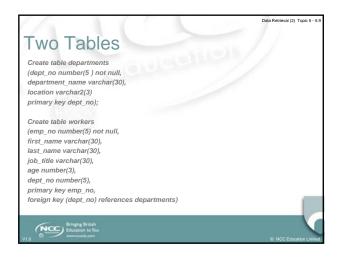










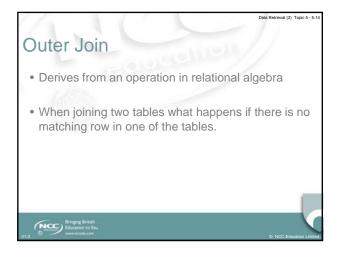


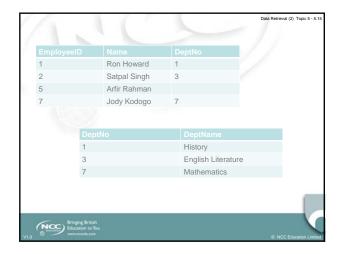
Joining Tables in an SQL Query Select d.department_name, w.first_name, w.last_name, w.job_title from departments d, workers w where d.dept_no = w.dept_no; What does this query do?

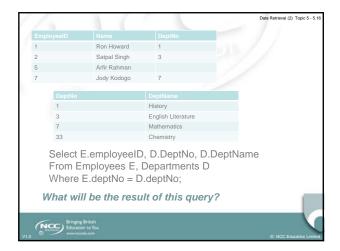
The Join Operation Used to retrieve data from more than one table Simple join Multi-table join Outer-join

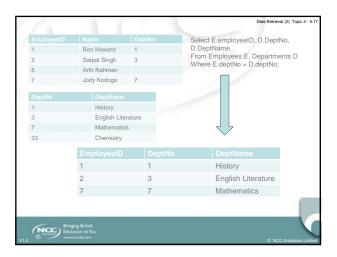
Simple Join on Two Tables Select d.department_name, d.location, w.first_name, w.last_name, w.job_title from departments d, workers w where d.dept_no = w.dept_no and d.location = 'Cairo'; • Use the attribute that connects the tables in the database. In this case 'dept_no'.

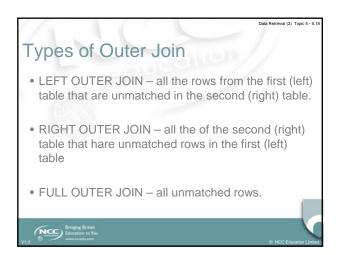
Joining more than two Tables Select d.department_name, d.location, w.first_name, w.last_name, w.job_title, j.salary from departments d, workers w, jobs where d.dept_no = w.dept_no and w.job_title = j.job_title; • Retrieves the salary from a separate table jobs which is linked via job_title





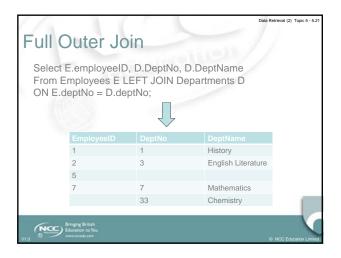


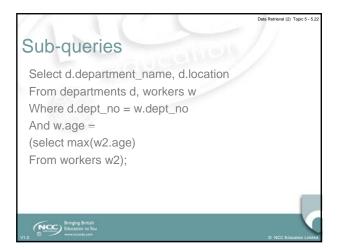












Correlated Sub-query SELECT p.product_name FROM product p WHERE p.product_id = (SELECT o.product_id FROM order_items o WHERE o.product_id = p.product_id); • This will select product_names from products where all the products exist on a table called older_items.

