Diploma in Database Administration

Database programs offer candidates a chance to pursue a career in the theoretical and practical aspects of database development process. The field of database has grown considerably with the advances in technology and the internet, and many database engineers are involved with implementation of new databases, and staying ahead of market trends.

Why does the course exists – Database technology is one of the most important aspect of computing. Businesses in much of world depend on database technology. For example, customer bank, utility and flight details are stored on databases.

How it fits into the larger programme – Everything revolves on database technology – from transport, finance, retail, education etc.

For whom it was designed – Candidates who complete the Certificate in Information Systems, Diploma in Information Technology, Certificate in Computer Fundamentals or Certificate in Networking.

How it will benefit candidates –The field of database administration is the largest sector and many firms employ qualification holders starting at junior database administrators. The disaster recovery services and software installation divisions are growing, along with the World Wide Web and internet-related industries. The government, universities, and manufacturers of computer products are additional sectors of the economy that have created a demand for skilled database professionals.

Subjects:
- Oracle SQL
- Oracle PL/SQL
- Oracle Database Administration
- Oracle Solaris Network Administration
- Windows SQL Server Administration

SQL - Structured Query Language (SQL) is a specialised language for updating, deleting, and requesting information from databases. SQL is an ANSI and ISO standard, and is the de facto standard database query language. A variety of established database products support SQL, including products from Oracle and Microsoft SQL Server. It is widely used in both industry and academia, often for enormous, complex databases. In a distributed database system, a program often referred to as the database's "back end" runs constantly on a server, interpreting data files on the server as a standard relational database. Programs on client computers allow users to manipulate that data, using tables, columns, rows, and fields. To do this, client programs send SQL statements to the server. The server then processes these statements and returns replies to the client program.

PL/SQL - a procedural language extension to Structured Query Language (SQL). The purpose of PL/SQL is to combine database language and procedural programming language. The basic unit in

PL/SQL is called a block, which is made up of three parts: a declarative part, an executable part, and an exception-building part.

Database Administration - The essential feature of database management is that it provides an INTERNAL representation (model) of the EXTERNAL world of interest. Examples are the representation of a particular date/time/flight/aircraft in airline reservation or of item code/item description/quantity on hand/reorder level/reorder quantity in a stock control system. *Why is it important?* Business in much of world depends on database technology. For example: *Finance:* the UK clearing banks have calculated that if their database systems were removed it would take every person in UK working 24 hours per day, 7 days per week to process all the financial transactions manually. The London stock exchange relies on computer systems for recording buying and selling of stock which happens very quickly and in large quantities. The amount of money involved in these transactions is enormous. *Transport:* All the airlines use online seat reservation systems and have systems for scheduling aircraft, for building and maintaining timetables, for handling the in-flight catering and for mechanical servicing of the planes. Similar systems exist for rail, sea and road transport. They all use database technology extensively. *Utilities:* the major utilities (water, electricity, gas) all have generation/distribution systems based on database technology. *Resources:* The mineral exploration/extraction companies, and governments who regulate them (especially for oil exploration/extraction) have extensive databases which have complex data structures (usually including GIS (Geographical Information System)) components. *Production engineering:* from scheduling workflow through the production lines of machines to stock control and order processing, database technology underpins all activity in this area. *Environment:* protection and control of the environment by government agencies depend heavily on database systems with GIS facilities, together with databases of toxic substances and clean-up recommendations. *Tourism:* hotel systems and local tourist attractions, information and booking facilities rely on database systems, and the major package tour operators have extensive databases for holiday planning and booking, together with financial systems for payment and invoicing. *Leisure:* the entertainment industry uses database systems extensively for theatre, concert and cinema ticket bookings. *Culture:* museums, art galleries, history exhibitions - all utilise database technology (and especially multimedia database technology) for cataloguing their collections and recording access to them. *Education:* courses, materials, and assessment all rely heavily on database technology in all sectors of education. Increasingly the linking of database technology with hypermedia delivery systems allows courseware to be maintained up-to-date and delivered to the consumer. *Healthcare:* healthcare has long relied on database technology to schedule hospital beds or appointments at clinics or doctor's surgery. *Government administration* would be paralysed without database technology; the collection of taxes and the payment of social security benefits depend totally on database technology. *Retail:* the major retail stores utilise database technology in stock control and PoS (Point of Sale) systems. Modern retailers use advanced data mining techniques to determine trends in sales and consumer preference to optimise stock control, retail performance, customer convenience and profit.

Oracle Solaris Network Administration – Solaris is one of the most popular Unix operating systems. At the same time, Oracle is most popular database programs. The effect of the combination of these two programs can not be emphasised enough.

Windows SQL Server Database Administration – The competitor of Oracle Database is Microsoft SQL, hence learning these two programs at the same time make learners identifier the differences between them and is an advantage when look for work or changing jobs.