Report

ON

SUMMER TRAINING AT

Reliance Patalganga

By

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Government Polytechnic, Pen

Guided By

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CERTIFICATE

This is to certify that Mr. Neha Prakash Palvi,

has successfully completed his summer training

At Reliance Patalganga in the partial fulfilment of the Under Graduate Degree course in Computer Technology, is a bonafied record of project work carried out by him under my supervision.

Mr. K S Kumar   Mr. Sanjay B Shukla
Mentor   HOD - IT
Datacentre Operations

ACKNOWLEDGEMENT

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1. SAFETY TRAINING

1.1 Introduction

A Safety Management System (SMS) is a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures. As per ICAO requirements, service providers are responsible for establishing an SMS, which is accepted and overseen by their State.

1.1 Safety Equipment:

- Safety shoes :

    A steel-toe boot (also known as a safety boot, steel-capped boot or safety shoe) is a durable boot or shoe that has a protective reinforcement in the toe which protects the foot from falling objects or compression, usually combined with a mid-sole plate to protect against punctures from below.

- Safety Helmets:

    A hard hat is a type of helmet predominantly used in workplace environments such as industrial or construction sites to protect the head from injury due to falling objects, impact with other objects, debris, rain, and electric shock. Suspension bands inside the helmet spreads the helmet's weight and the force of any impact over the top of the head.

- Safety gloves:

Safety gloves are hand garments meant for the protection of the wrist, hand, fingers, and thumbs from adverse processes or conditions. These items are virtually limitless in application and find employment in both industrial and commercial marketplaces. Their functionality is determined by the material and design of the glove.

- Safety Googles:

Goggles or safety glasses are forms of protective eyewear that usually enclose or protect the area surrounding the eye in order to prevent particulates, water or chemicals from striking the eyes. They are used in chemistry laboratories andin woodworking. They are often used in snow sports as well, and in swimming. Gogglesare often worn when using power tools such as drills or chainsaws to prevent flying particles from damaging the eyes.

1.2 Zero Tolerance:

A zero-**tolerance** policy is one which imposes strict punishment for infractions of a stated rule, with the intention of eliminating undesirable conduct.

Zero-tolerance policies have been adopted in all around RIL Industries. These policies are usually promoted as preventing smoking, drinking and prohibiting mobile phones. Staff members, workers and other visitors, who possess a banned item or perform any prohibited action for any reason are automatically punished.

Zero Tolerance Rules:

1.) No Smoking, No Drugs, No Alcohol, No Ignition sources.
2.) No Violation of Work Permit Conditions.
3.) No Line Break Without Authorization.
4.) No Entering Confines Space Without Authorization.

2. DATABASE MANAGEMENT SYSTEM

2.1 Introduction

A **database** is an organized collection of data, so that it can be easily accessed and managed. You can organize data into tables, rows, columns, and index it to make it easier to find relevant information. **Database handlers** create a database in such a way that only one set of software program provides access of data to all the users. The **main purpose** of the database is to operate a large amount of information by storing, retrieving, and managing data. There are many **dynamic websites** on the World Wide Web nowadays which are handled through databases. For example, a model that checks the availability of rooms in a hotel. It is an example of a dynamic website that uses a database.

There are many **databases available** like MySQL, Sybase, Oracle, MongoDB, Informix, PostgreSQL, SQL Server, etc. Modern databases are managed by the database management system (DBMS).

DATA

Data is a collection of a distinct small unit of information. It can be used in a variety of forms like text, numbers, media, bytes, etc. it can be stored in pieces of paper or electronic memory, etc.

Word 'Data' is originated from the word 'datum' that means 'single piece of information.' It is plural of the word datum.

In computing, Data is information that can be translated into a form for efficient movement and processing. Data is interchangeable.

DBMS

o Database management system is a software which is used to manage the database. For example: MySQL, Oracle, etc are a very popular commercial database which is used in different applications.

o DBMS provides an interface to perform various operations like database creation, storing data in it, updating data, creating a table in the database and a lot more.

o It provides protection and security to the database. In the case of multiple users, it also maintains data consistency.

RDBMS

RDBMS stands for Relational Database Management System. RDBMS is the basis for SQL, and for all modern database systems such as MS SQL Server, IBM DB2, Oracle, MySQL, and Microsoft Access. The data in RDBMS is stored in database objects called tables. A table is a collection of related data entries and it consists of columns and rows.

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SQL

SQL is a standard database language used to access and manipulate data in databases. SQL stands for Structured Query Language. SQL was developed by IBM Computer Scientists in the 1970s. By executing queries SQL can create, update, delete, and retrieve data in databases like MySQL, Oracle, PostgreSQL, etc. Overall SQL is a query language that communicates with databases.
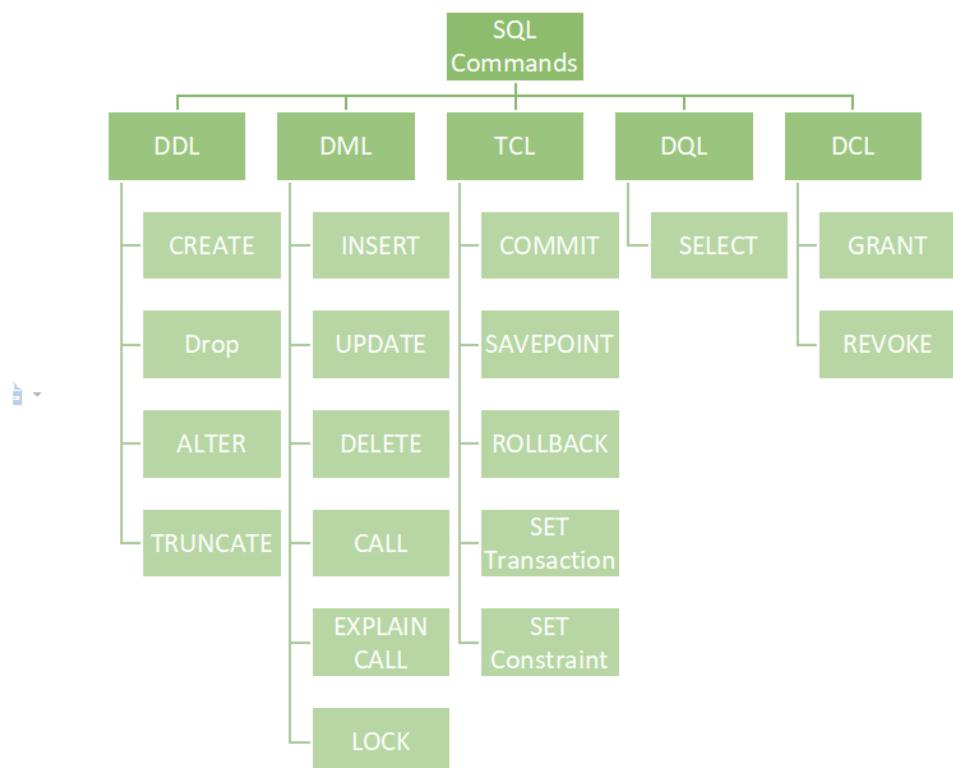
What Can SQL do?

- SQL can execute queries against a database
- SQL can retrieve data from a database
- SQL can insert records in a database
- SQL can update records in a database
- SQL can delete records from a database
- SQL can create new databases
- SQL can create new tables in a database
- SQL can create stored procedures in a database
- SQL can create views in a database
- SQL can set permissions on tables, procedures, and views

2.2 Types of SQL Statements

These SQL commands are mainly categorized into five categories:
1. DDL – Data Definition Language
2. DQL – Data Query Language
3. DML – Data Manipulation Language
4. DCL – Data Control Language
5. TCL – Transaction Control Language

List of DDL commands:

- **CREATE**: This command is used to create the database or its objects (like table, index, function, views, store procedure, and triggers).

    Syntax

    CREATE TABLE *table_name* (

column1	*datatype,*
column2	*datatype,*
column3	*datatype,*
	....

    );

- **DROP**: This command is used to delete objects from the database.

    Syntax

    DROP TABLE *table_name*;

- **ALTER:** This is used to alter the structure of the database.

    Syntax

    ALTER TABLE *table_name*
    ADD *column_name datatype;*

- **TRUNCATE:** This is used to remove all records from a table, including all spaces allocated for the records are removed.

    Syntax

    TRUNCATE TABLE *table_name;*

- **RENAME:** This is used to rename an object existing in the database.

    Syntax

    ALTER TABLE table_name

    RENAME TO new_table_name;

List of DQL:

- **SELECT:** It is used to retrieve data from the database.

    Syntax :

    SELECT * FROM *table_name*;

List of DML commands:

- **INSERT**: It is used to insert data into a table.

    Syntax

    INSERT INTO *table_name* (*column1*, *column2*, *column3*,   *...*)
    VALUES (*value1*, *value2*, *value3*, *...*);

- **<u>UPDATE</u>:** It is used to update existing data within a table.

  Syntax

  > UPDATE *table_name*
  > SET *column1 = value1*, *column2 = value2*,   ...
  > WHERE *condition*;

- **<u>DELETE</u>**: It is used to delete records from a database table.

  Syntax

  > DELETE FROM *table_name* WHERE *condition*;

List of DCL commands:

- **<u>GRANT:</u>** This command gives users access privileges to the database.
- **<u>REVOKE:</u>** This command withdraws the user's access privileges given by using the GRANT command.

List of TCL commands:

- **<u>COMMIT</u>:** Commits a Transaction.
  - **Syntax:**
    - *COMMIT;*

- **<u>ROLLBACK</u>:** Rollbacks a transaction in case of any error occurs.
  - **Syntax:**
    - *ROLLBACK;*

- **<u>SAVEPOINT</u>:** Sets a save point within a transaction.
  - **Syntax:**
    - *SAVEPOINT SAVEPOINT_NAME;*

2.3 Normalization IN DBMS

Normalization is the process of minimizing redundancy from a relation or set of relations. Redundancy in relation may cause insertion, deletion, and update anomalies. So, it helps to minimize the redundancy in relations. Normal forms are used to eliminate or reduce redundancy in database tables.

Types of Normalization:
1) 1NF (First Normal Form)
2) 2NF (Second Normal Form)
3) 3NF (Third Normal Form)
4) BCNF (Boyce-Codd Normal Form)
5) 4NF (Fourth Normal Form)
6) 5NF (Fifth Normal Form)
7) 6NF (Sixth Normal Form)

Detailing about the most common types i.e., the first 4:

First Normal Form: If a relation contains composite or multi-valued attribute, it violates first normal form or a relation is in first normal form if it does not contain any composite or multi-valued attribute. A relation is in first normal form if every attribute in that relation is singled valued attribute.

Second Normal Form: To be in second normal form, a relation must be in first normal form and relation must not contain any partial dependency. A relation is in 2NF if it has No Partial Dependency, i.e., no non-prime attribute (attributes which are not part of any candidate key) is dependent on any proper subset of any candidate key of the table.

Third Normal Form: A relation is in third normal form, if there is no transitive dependency for non-prime attributes as well as it is in second normal form.

A relation is in 3NF if at least one of the following condition holds in every non-trivial function dependency X -> Y

1. X is a Super Key
2. Y is a prime attribute (each element of Y is part of some Candidate key).

Boyce-Codd Normal Form: A relation R is in BCNF if R is in Third Normal Form and for every FD, LHS is super key. A relation is in BCNF if in every non-trivial functional dependency X –> Y, X is a super key.

3. BACKUP

What is a backup

A backup is an image of that database at the time of the full backup.

When you back up a database, you copy it to a backup device such as a disk. Later, you can use the backup files to restore the database to its original state.

It's important that you have a good backup strategy to meet the business needs. The planning of the backup strategy starts with a recovery strategy.

Why backup

Typically, you back up a database to restore its original state just before a disaster such as:

- Hardware failure
- Database corruption
- User-errors

Also, you can use a backup to copy a database from one server to another. For example, you make a backup of a database on the production server and restore it on the test server.

Where to store the backups

Ideally, you should store the backup on a separate device that is not the same as the SQL Server.

Hence, you should never store the backup on the same server of SQL Server. The reason is that if the server is crashed, you will lose both data and its backup.

3.1 Types of Backup:

1. Full Backup

A full backup is a technique for backup where all documents and envelopes chosen for backup are upheld up. At the point when backup is run later, full rundown of documents will be upheld up once more. The upside of this backup is that recuperation is snappy and simple on grounds that total rundown of documents is put away unfailingly.
The drawback is that every backup run requires some serious energy in light of fact that whole rundown of documents is replicated once more. Contrasted with developing or separating backups, full backups take up great deal of extra room.

2. Incremental Backup

Developing backup is backup of all progressions made since last backup. With expanding backup, full back up happens first and following backup runs progressions produced using last backup. The outcome is quick backup, and afterward full backup for every backup run. Extra room use is extremely low contrasted with full backup and distinction with backup is little. Reestablishing is slower than full backup and differential backup.

3. Differential Backup

Differential backup is backup of all progressions made since last full backup. With differential backup, full backup is done first and resulting backup runs progressions produced using last full backup. The outcome is an exceptionally quick backup, and afterward full backup for every backup run. Extra room utilization is low contrasted with full backup, yet again with expanding backup. Reclamation's are slower than full backups, yet are typically quicker, with expanding backups later.

1.   Automated Product Handling System

Introduction to APHS:

More than 120 automation systems installed worldwide, Salmoiraghi may certainly be considered as the absolute market leader.
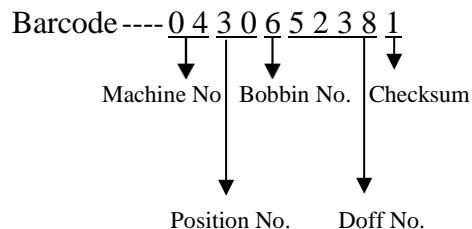
Our Automated Handling System featuring high efficiency and excellent cost performance ratio incorporate highly innovative solutions developed along the years (many of which are protected by international patents).

We offer a wide range of field-proven solutions for handling and computerized tracking of yarn bobbins all the way from the winding machines to packings.

Overview of APHS :

The end product POY (Partially Oriented Yarn) from the manufacturing division is winded on a single unit called as a Bobbin, at the rate of 3000 frequency. On each Doff (bobbins carrying unit) eight bobbins are assembled using automated shuttle. The shuttle has a scanning machine that scan the barcode of each Doff and assembles accordingly.

For Example

Barcode ---- 0 4 3 0 6 5 2 3 8 1

Machine No   Bobbin No.   Checksum

Position No.   Doff No.

This Doff travels through three major station :

1. Physical Testing Station :

   Test performed are as follows :
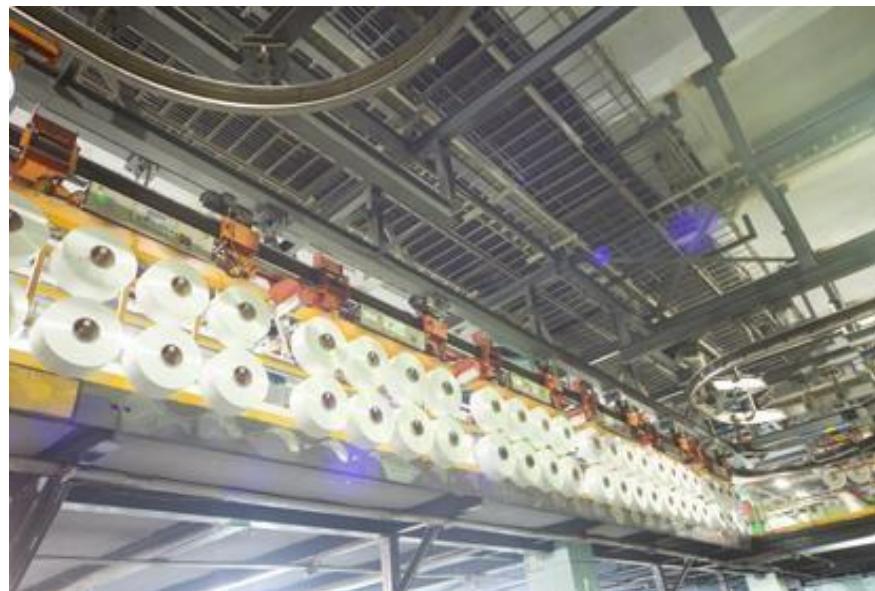
   - Cross Section
   - Denier
   - Draw Tension
   - Tenacity Elongation
   - Entanglement

2. Pre-visual Inspection Station :

   Mirrors are installed on the both ends of doff through which all sides of bobbins are examined by the examiner and faults are identified.

3. Visual Inspection Stations :

   Final weight and grade of the bobbins are determined and accordingly bobbins are accepted or rejected.

The storage area of bobbins is called as CAROUSELS. It has 9 Bobbin Storage Towers with the capacity of 27000 bobbins. Each tower has 3 layers- UPPER, MIDDLE, LOWER.

SALMOIRAGHI LOADER loads bobbins from the Doff to the assigned towers.

AUTOMATION FOR MAN-MADE FIBRE PLANTS
The Salmoiraghi DOFFER RANGE

As per the order by the particular agency, the bobbins are unloaded by the Salmoiraghi Unloader.

As per the company's requirements, Salmoiraghi system is programmed to pack the bobbins in the order of 3*3 or 4*4 manner.

These Packed bobbins are then transported to the Dispatch Department.

5. Project

6. Windows OS Installation:

HP ILO Configuring Hardware RAID

INTRODUCTION

RAID (Redundant array of independent/Inexpensive Disk) is the optimum way of providing hard disk redundancy for your server against disk failure. Sometime one don't want to install OS directly on single disk, instead system architects prefer OS to be spawned across numerous disks configured in RAID

STEPS OF ACTION

- Power ON the system and from ILO press F10 to select INTELLIGENT PROVISIONING
- This will open a wizard where it will load the Intelligent provisioning
- Now you are provided with different options, where we have to select relevant options of our choice (RAID configuration in our scenario)
- This will present a page where we can see our existing Physical disks (Assigned and Unassigned) and logical arrays (if Treated any)
- The Controller presents us with our RAID options. Because of the number of disks, only RAID O and RAID 1 are available.
- Click Create Logical Drive
- Verify your configuration and finish it

Windows Server 2019 installation steps

After creating a bootable USB or DVD medium, insert it and start your Computer. VirtualBox, KVM and VMware users only need to attach the ISO file during VM creation and follow the installation steps shown.

- On the first screen, select installation language, Time and keyboard layout the click "Next".

- Start the installation by clicking on "Install Now".

- Select the Windows Server 2019 edition to install and click Next.

- Read the License terms and agree to them to start the installation by checking the box "I accept the license terms".

- if this is the first installation of Windows Server 2019 on the server, select (Custom: Install Windows only).

- Select a partition to install Windows Server, you can optionally create new one from available or use total available size by clicking "Next".

- The installation should start, wait for it to finish.

- The installation should start, wait for it to finish.

- Click Finish to complete the installation. To login with the Administrator user, use Ctrl + Alt + Del key combination.

- Provide your Administrator Password and hit Enter.