HINDUSTAN COPPER LIMITED

(A Govt. of India Enterprise)

ACKNOWLEDGEMENT

It is my privilege to work on the project "**Attendance Record**" at Hindustan Copper Limited,Indian Copper Complex, Ghatsila. At the very outset, I am obliged to **HINDUSTAN COPPER LIMITED** for the permission to undertake training program and provides me the basic infrastructure and facilities.

I express my heartfelt gratitude to Mrs Neha Tiwari DM(E)- HR who guided me throughout this project. I would also like to thank Mr RAVI SHANKAR CHOUDHARY Manager (HR&A) for his continuous assistance without which this project would not have been reached at completion.

It is this spirit, of being associated with the System department in particular and HCL in general who inspired me to complete this project successfully. I am deeply grateful to Mr SANJEEV KUMMAR CM(System), my Internal Guide , who provided valuable insights and guidance at every stage of the project.

I also convey my sincere gratitude to my friends and my family for their encouragement and Support extended to me during the course of my project. At the end I would not forget to thank the members of HCL/ICC, MOUBHANDAR who treated me with respect and helped me in the best of their capacity.

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EXECUTIVE SUMMARY

During my internship I gained practical knowledge on how the division of an organization operates and coordinates its activities to ensure smooth functioning of the organization at all levels by ensuring right numbers of people are available at the right time to do the right job. Not only that I have also gained insight into the working culture of the organization and observed how Hindustan Copper Limited handles its employees with value and empowerment to ensure they are motivated to give their best to the organization.

The report starts with an organization profile of Hindustan Copper Limited giving its background, mission, vision, its products and services, the hierarchy and organogram of the organization.

The next section comprises the project, System Management in HCL/ICC. The project encompasses introduction to the oracle, ER model of Attendance Record, Sql Commands followed by Organization Practice at HINDUSTAN COPPER LIMITED which basically conveys how things are done in the System Department.

The project carries out SWOT Analysis that touches upon strengths, weakness, opportunities and threats to the organization.

INDUSTRY PROFILE

The history of Indian copper industry goes back to 1967 with the incorporation of Hindustan Copper Ltd (HCL) and thereafter acquisition of mines from public sector National Minerals Development Corporation (NMDC). But, the real twist in copper story took with the opening up this sector for private sector players in 1992 which saw the involvement of Indo Gulf Corporation (now a part of Hindalco Industries) and Sterlite Industries into copper smelting and refining through concentrate imports from various mineral rich countries. Copper is a special metal for industrial applications owing to its properties such as electrical conductivity, corrosion resistance, ductility, malleability and rigidity. Specific application of copper include power cables and wires, jelly filled cables, building wires, air conditioning and refrigeration tubing, telecom, power, construction, transportation, handicrafts, engineering, consumer durable and defence. Compared with global markets, India has limited copper ore reserve contributing about 0.31 % of world copper reserves. Mining production is just 0.2% of world's production, whereas refined copper production capacity is about 4% of world's production. The size of Indian Copper Industry (consumption of refined copper per annum) is around 6.6 lakh tonnes, which as percentage of world copper market is only 3%. As on 1.4.2020, HCL had access to around two-fifths of the copper ore reserves and resources in India with an average grade 1.01%. Also, as on 1.4.2020, HCL had reserves (proved & probable) of 167.08 million tonnes ore with average grade of 1.32% and total reserves and resource of 570.40 million tonne ore with average grade of 1.01% (based on UNFC system). Total copper resources in India is 12.16 million tonnes of which 2.73 million tonnes constitutes reserves, both in terms of copper metal as on 1.4.2015 as per NMI database (As per Indian Minerals Year Book 2019, 58th Edition, dated October 2020). There are three major players which dominates the copper industry in Indian markets namely Hindustan copper Limited (HCL) in Public sector, M/s Hindalco Industries Ltd and M/s Sterlite Copper a Unit of Vedanta Industries Ltd in Private Sector. Adani Group has recently announced to install 5 MTPA custom smelter plant named as Kutch Copper Limited. Refined copper production in India has declined significantly due to the permanent closure order issued to Sterlite Copper for their Smelter/ refinery plant at Tuticorin by Tamilnadu Government in May, 2018. HCL is the only vertically integrated copper producer in the country which produces refined copper from mined ore, while M/s Hindalco Industries Ltd at Dahej in Gujarat and Sterlite Copper at Tuticorin in Tamil Nadu have set up port based smelting and refining plants. However, there are few installations to produce Electro-won copper but their capacities are still very low and production is inconsistent. There are more than 1000 SMEs, MSMEs and unorganized sector working in the downstream and secondary recycling of copper Industries in India. In the fiscal year 2020-21, the copper ore production in India was 3.27 million tonnes. HCL has plans to increase its mining capacity from its current level ore production to 12.2 million tonne per annum in Phase-I in next 7 to 8 years and will take necessary action for further capacity enhancement to 20.2 million tonne per annum in Phase-II. Metal in concentrate production of HCL in FY 2020-21 was 23,866 tonnes. Refined copper production in India during FY 2020-21 was approx.3.63 lakh tonnes (Vedanta- 1.01 lakh tonnes, HCL- Nil & Hindalco- 2.62 lakh tonnes), as compared to 4.08 lakh tonnes in FY 2019-20.

COPPER INSIGHTS

Some of the earliest uses of copper we know of dates back to the cave men who used axes and other weapons made of copper. All the way from the Egyptian pyramids to Mohenjo Daro, archaeologists have discovered copper used to make statues and even plumbing system. What surprised them the fact the plumbing was found to be still serviceable in our time.

Ancient belief system found to be based on scientific facts have proven the drinking water in copper vessels due to the metal's anti-fouling properties, considered to be a 'pure' metal was for storing food.

Did you know that some of the fastest microprocessor in the world is made partly from copper?

Can you believe a major part of the connectors and instrument parts used in space crafts and rocket Use copper?

HISTORY

The name copper is derived from the Greek word ‘chalkos’. It is also related to the Greek mythology as it is said that it was associated with the goddess Venus. The origination of this oldest known metal, copper is not exactly known to the human race but it is estimated that it was discovered in around 900BC in the Middle East. A copper locket has been found in Iraq that is around 8500 BC old. Smelting, one of the processes that is used to refine copper, dates back to around 4500 BC and the smelting sites were located in the areas of present day Israel, Egypt and Jordan at that time. This metal was also used to make weapons, hammers and axes. The people in Egypt discovered that by adding tin to copper, the casting of the metal becomes easier and the metal was getting popular in the east mainly in China and India. China started the process of hydrometallurgy in which a metal is separated from its alloys. Indian people made various other crafts by using alloys of copper like icons and lamps. The importance of this very useful metal was identified and it was so extensively used that the respective era of history is named as The Bronze Age (2500 BC-600 BC). The inventions of new technologies in the east were adopted by the whole world. It was found that copper is a corrosion free substances and then it marked the invention of a new use of copper in plumbing system and protecting wooden ships from algae. Ships of Christopher Columbus too use to have this copper guarding. With time, more and more new uses and new techniques to extract copper were invented. Copper coins have also played an important role in the history as a medium of currency. The earliest instance found of copper being used as a currency was in the form of lumps in the 6th century BC by the people of Italy. The shapes of copper lumps were moulded to coins with the invention of new copper alloys. Rulers like Julius Caesar and Octavian’s use to have their own coins having their own symbols. This shows that copper has ever been a prominent contributor to all of the various aspects of history, culture, technology and medicine and is still used extensively

Copper Producing Countries:

Copper is extracted from its ore that is mineral from such as sulphides and carbonates. Although copper ore is found throughout the world, the major countries that produce ore are:-

- Chile
- Peru
- China
- Democratic Republic of Congo
- United States of America
- Australia
- Russia
- Zambia
- Mexico
- Kazakhstan
- Canada
- Poland
- Zaire Indonesia

- Australia
- Argentina
- Brazil
- Korea
- Iran
- Laos
- Mongolia
- Saudi Arabia
- Sweden

The ore mines are located both on land as well as in the deep sea and according to the United States Geological Survey, 2020, the Global Copper Reserves are estimated at 870 million tones and the annual demand is 28 million tons. In 2020, the total global Smelter production of copper stood at approximately 24.5 million metric tons. From 2000 to 2020, refinery production of Copper increased by 9.7 million metric tons. The following are the ten leading ore refining countries, which account for maximum percentage of the total refined copper production, are:-

- Chile
- Peru
- China
- Democratic Republic of Congo
- United States of America
- Australia
- Russia

Indian Copper Market

India does not provide a big market for copper. Due to shortage of copper mines and a low percentage of productivity of copper in the mines, India suffers a loss in the level of production and it has to completely depend on the copper ore imports. Also, not many companies are indulged in the refining and extraction of copper from its alloys and ores. India produces copper from the imported copper ore that accounts to around 3.52 lakh tons of production. This production level contributed to a mere 4% share in the total copper production in the world. Indian market is divided into two parts i.e. primary and secondary. Primary segment comprises of the producers that convert copper ore into refined copper. Three companies namely Hindustan Copper Ltd, Birla Copper and Sterlite Industries constitute this primary segment. Secondary segment comprises the producers that manufacture value added products made from copper like wires, foil etc. The domestic consumption demand of copper is around 118000 tons in the country which is bound to increase as the country readies to progressively step up production of electrical vehicles (EVs), a major copper use area will open up. EVs will require five times more copper than vehicles made with internal combustion engine (ICE). A good amount of red metal will be used in making batteries for EVs, cables and charging stations. Then as India pursues the

target of achieving non-fossil fuel based energy resources constituting around 40% of cumulative electric power installed capacity, a major demand avenue for copper will open up. In the Indian basket of sustainable clean energy, solar power will have pride of place since this tropical country has the potential to draw a vast amount of electricity from the blazing sun. The National Institute of Solar Energy estimates India's solar power potential at 748 gW. But the immediate target of prime minister's solar mission is to achieve a solar capacity of 100 gW. The country seen as the fourth most attractive renewable energy market in the world is placed fifth in global solar power pecking order. But what does solar energy hold for copper use? A lot since creation of 1 mw of solar cell capacity will need 6 tonnes of copper. Similarly, in renewable wind energy, considerable amount of copper is used in the generator, cabling and transformer of a turbine. India has always been an importer of copper ore to satisfy the domestic consumption demand. The countries from where the ore is imported into India as per March 22 are:

- China
- United States
- Saudi Arabia
- United Arab Emirates
- Iraq

Market Influencing Factor:-

- Price fluctuations of copper in London Metal Exchange
- Production level of copper in the world
- Growth prospects of the major copper consuming countries of the world of the various sectors in the market.

Major Trading Centre's of Copper:-

Copper is an important commodity that is traded in

- London Metal Exchange (London)
- New York Mercantile Exchange (New York)
- Shanghai Futures Exchange (China)

These commodity exchanges direct the world market in the context of prices. In India, copper is traded in the commodity exchanges namely **Multi Commodity Exchange of India Ltd, National Multi Commodity Exchange of India and National Commodity and Derivatives Exchange.**

Company Profile

Hindustan Copper Limited (HCL)

Hindustan Copper Limited (HCL), a public sector enterprise of the Government of India, undertaking the Administrative control the ministry Of Mines, was incorporated on 9th November 1967. It has the distinction of being India's only vertically integrated copper producing company encompassing mining, beneficiation, Smelting, refining and casting of refined copper metal. In the history of Indian Copper, Hindustan Copper Limited (HCL) holds pride of place. With the spirit of and undaunted pioneer HCL has contributed immensely to the industrial growth of the country and its march towards self-reliance. Country's Electrical Sector was nourished by HCL through continuous a supply of its prime quality Copper Cathodes, Wire Bars And continuous Casts Rods. HCL also produce Gold, Silver, and Nickel sulphate, Selenium, Tellurium and Fertilizers as by products. With its extensive warehouses and sales offices, HCL satisfies the demand of the Customers across the length and breadth of the country. HCL is the first Indian Copper Producer to be accredited with ISO9002 certification for continuous Cast Rods manufacturer at its Taloja plant and for Manufacture of cathode at its Refineries both at Indian Copper Complex, Ghatsila, Jharkhand and Khetri Copper Complex, Khetri, Rajasthan. It has the distinction of being the nation's only vertically integrated Copper producing company as it manufactures copper right from the stage of mining to beneficiation, Smelting, refining and casting of refined copper metal into downstream saleable products. The Company Markets copper cathodes, copper wire bar, continuous cast copper rod and by-products, such as anode slime (containing gold, silver, etc) copper sulphate and sulphuric acid. More than 90% of the sales revenue is from Continuous cast copper rods and wires. In concluded financial year 2006-2007, as per provisional estimates, The company has earned a all-time highest net profit of Rs 331 crore (~USD 75 million) against a sales Turnover of Rs 1800 crore (~USD 420 million). HCL's mines and plants are spread across four operating Units, one each in the States of Rajasthan, Madhya Pradesh, Jharkhand and Maharashtra as named below:

- Khetri Copper Complex (KCC) at Khetrinagar, Rajasthan
- Indian Copper Complex (ICC) at Ghatsila, Jharkhand
- Malanjkhand Copper Project (MCP) at Malanjkhand, Madhya Pradesh
- Taloja Copper Project (TCP) at Taloja, Maharashtra
- Gujarat Copper Project (GCP) at Bharuch, Gujarat

INDIAN COPPER COMPLEX (ICC), GHATSILA

Indian Copper Corporation Ltd was established by a British company in 1930 at Ghatsila consisting of a cluster of underground copper mines, concentrator plants and smelter. On 25.09.72 the Govt. of India nationalized the company under provisions of the Indian Copper Corporation (Acquisition of Undertaking Act) and merged the same with HCL. Today it falls under the state of Jharkhand, under the jurisdiction of East Singhbhum district.

Existing Infrastructure

- Established in 1930
- Capacity 16,500 tpa copper cathode
- By products Sulphuric acid, gold, silver, palladium, selenium, tellurium, nickel sulphate
- Mines - Surda
- Reserve: Surda 19.30 million tonnes @1.17% cu

Additional mining reserves (old mines):

- Rakha Mines 47.19 million tonnes @ 0.97% copper
- Kendadih Mine 12.85 million tonnes @ 1.73% copper
- Chapri Mine 63.50 million tonnes @ 1.14% Cu

KCC KHETRINAGAR, RAJASTHAN

This complex was initially established by the National Mineral Development Corporation (NMDC) as a copper mine which was transferred to HCL in 1967. Subsequently smelting and refining facilities were added.

- Capacity - 31,000 TPA copper cathode the smelter and acid plant at KCC are under shutdown since late 2008 due to the slump in global commodity prices witnessed in 2008 and old machinery. (Currently, the only concentrator for production of copper concentrate is working in addition to associated mines.)
- By-products- sulphuric acid
- Mines - Khetri and Kolihan (producing 9,500 Mt metal in concentrate / annum)
- Reserve:
  1. Khetri 34.56 million tons @ 1.13% cu
  2. Kolihan 22.45 million tons @ 1.33% cu
  3. Banwas 24.97 million tons @ 1.69% cu

MCP MALANJKHAND, MADHYA PARDESH

Malanjkhand Copper Project has the single largest copper deposit in India and produces around 70% of HCL's total copper in concentrate production. Established in 1928, the unit comprises an open pit mine. The copper concentrator produced at Malanjkhand is sent to Ghatsila unit ss(ICC) and Khetri (KCC) for processing into refined copper.

- Capacity open cast mine with a capacity of 2 million tonnes with matching concentrator
- Mines - Malanjkhand Open-pit mining
- Reserve 208.030 million tonnes @1.3% cu
- Features of the open pit mine
  - length 2600 meter
  - Width 700 meter
  - Planned depth: 240 meter below average ground level

The open pit mine has reached ultimate pit depth and further it's not economically viable to exploit the mineral with open pit mining. Hence, the mine is being converted to underground mines with enhanced capacity of 5 million tonnes with an investment to the tune of 2000 crores.

TALOJA COPPER PROJECT (TCP) AT TALOJA, MAHARASHTRA

The Taloja Copper project was set up in December 1989, based on technology sourced from south wire, USA. The plant produces continuous cast copper rods (CCR) and has a capacity of producing 60,000 TPA. The input that is cathodes ate sourced from the company's own unit at Khetri and Ghatsila as well as through direct purchase of cathodes. The unit also undertakes tolling of cathodes. Name of trade union operating in the establishment and whether they are registered or not and they are recognized or not and their affiliation.

- Capacity 60,000 tpa continuous cast copper rod – Hind cop rods[6]
- Technology plant is based on the latest 'South wire Technology'
- Product range 8 mm, 11 mm, 12.5 mm, 16 mm and 19 mm cc rod.

GUJARAT COPPER PROJECT (GCP) at Bharuch, Gujarat

Hindustan Copper Limited (HCL) has acquired the plant and machinery including lease hold land of Jhagadia Copper Ltd. (JCL) from ARCIL in June 2015 and renamed it as Gujarat Copper Project. The factory is situated at Plot No. 747, Jhagadia Industrial Estate, District – Bharuch, Gujarat. GCP plant is a secondary Copper Smelter and Refinery complex. It is capable of producing 50,000 TPA of copper cathodes conforming to LME-A grade. The plant was setup in technical Collaboration with Outokumpu Technology AB (formerly Boliden Contech AB), Sweden. It was based on modern and proven technology that is capable of processing a wide array of copper bearing materials including e-scrap to produce LME-A grade copper cathode. Jhagadia Copper Limited (JCL) was promoted by Khaitan Group of Shalimar Wires Industries (SWIL) and planned to set up a secondary copper smelter in Bharuch in 1992. The project was commissioned in 2003 and the commercial Production commenced from May 15, 2006. However, operations of the company were suspended from September 2009 due to lack of working capital.

VISION AND MISSION OF HINDUSTAN COPPER LIMITED

Vision:-

- To strive to be a leading metal mining company and maximize total shareholder return by sustainably
- Finding, developing, and mining copper ore and such other geologically associated minerals.

Mission:-

- To achieve sustainable growth in business through optimum & efficient use of existing resources and assets.
- To achieve rapid expansion of mining capacity through expansion of existing mines, re-opening of closed mines and green field projects.
- Detailed exploration of existing mines and new mining leases to expand mining capacity.
- To enhance the value of the Company by focusing on performance improvement.
- To assimilate state-of-the art technology in exploration, mining and beneficiation of ores for Competitive advantage.
- To strive for continuous improvement in productivity and energy to bring at par with the internationally.
- To continue innovation through research & development.

CORPORATE SOCIAL RESPONSIBILITY (CSR)

Policy Statement

For Hindustan Copper Limited (HCL), the Corporate Social Responsibility (CSR) is a planned set of activities taking into consideration the Company's capabilities, expectations of the communities living in and around the areas of its operation as well as where it has its presence, targeted to have a significant positive impact in the long term. The aim is to play a catalytic role in the sustainable socio-economic development in the regions where the industry is located or where its interests lie, attempting to create an enabling working environment for HCL as well as income generation opportunities for the community keeping sight of sustained regional development.

Organization setup

The CSR projects in HCL are implemented under the guidance of the CSR Committee which presently comprises three Directors out of which two are Independent Directors. The terms of reference of the Committee is given below:

(i) Formulate and recommend to the Board, a Corporate Social Responsibility Policy which shall indicate the activities to be undertaken by the Company in areas or subject, specified in Schedule VII;

(ii) Recommend the amount of expenditure to be incurred on the activities referred to in clause (i); and

(iii) Monitor the Corporate Social Responsibility Policy of the Company from time to time.

A Nodal Officer for CSR at Corporate level coordinates Company's CSR initiatives and is assisted by a team of designated officers. A Nodal Officer at each of the three Units coordinates CSR initiatives at Unit level.

Scope of activities

The CSR activities of HCL are as per the provisions of Schedule VII of the Companies Act, 2013.

Geographical Span

(a) The CSR activities are undertaken essentially around areas of HCL Units, within a radius of 20 Km. At least 75% of the amount earmarked for CSR activities shall be spent in these areas.

(b) Of the remaining 25% of the CSR allocation after (a) above, around 15-20% may be utilized in areas beyond 20 Km. of the Unit but within the State in which the Units are located. Up to a maximum of 5% of the amount earmarked for CSR activities may be utilized anywhere in India to be decided by the CMD.

Planning

The identification of CSR activities at Unit / Corporate level are done by any one or combination of the following methods.

(i) In-house planned projects

(ii) Proposals from District Administration / Local Govt. body / Public Representatives, etc.

(iii) Proposals/Requests from a registered & specialized body for providing financial assistance for carrying out specific CSR initiative subject to the condition that it fulfils the criteria as prescribed in the statute in this regard.

Implementation methodology

The CSR activities / projects are implemented using internal resources or through collaborating with NGOs / specialized agencies / trusts / institutions / foundations / societies / Government bodies, etc., in accordance with the provision of 'The Companies Act, 2013' and 'Companies (Corporate Social Responsibility Policy) Rules, 2014'. The expenditure incurred towards CSR has been certified by the CFO of the Company.

SYSTEM MANAGEMENT

Key Assumption

'Employees are the most important asset of the organization'

- The quality and effectiveness of the organization is determined by the quality of the people that are employed,
- Success for most organizations depends on finding the employees with the skills to successfully perform the tasks required to attain the company's strategic goals.

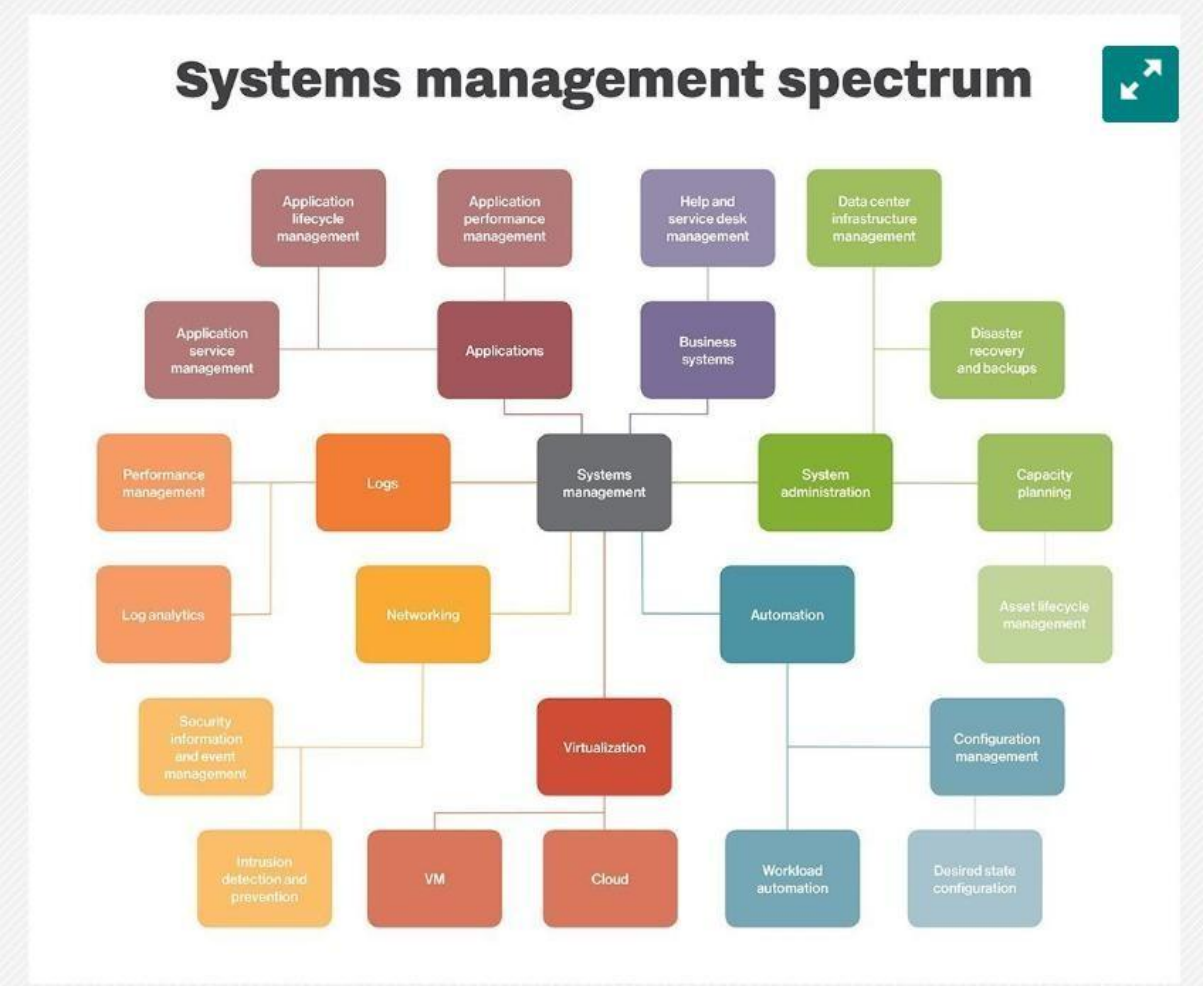
WHAT IS SYSTEM MANAGEMENT?

Systems management is the administration of the information technology (IT) systems in an enterprise network or data center. An effective systems management plan facilitates the delivery of IT as a service and allows an organization's employees to respond quickly to changing business requirements and system activity. In a hybrid IT environment, this involves overseeing the design and day-to-day operations of the data center. It also includes oversight of the integration of third-party cloud services.

The chief information officer or chief technology officer usually oversees IT systems management. The department responsible for architecting and managing the systems is sometimes known as management information systems, information systems or IT infrastructure and operations. Tasks for these teams include the following:

- Gathering system requirements;
- Buying equipment and software;
- Distributing, configuring and maintaining the equipment;
- Providing enhancements and service updates to equipment;
- Implementing processes to address problems;
- Provisioning services;
- Monitoring IT systems performance; and
- Determining whether objectives are being met.

The Information Technology Infrastructure Library (ITIL) provides a best practices guide for operations and systems management in the data center and cloud.



SCOPE OF SYSTEM DEPARTMENT

After understanding what is System Management and the nature of management, we move on to the scope of System Management . Information Systems is growing at a fast pace to become one of the most promising career fields in today's world. With everything happening digitally, the demand for System Management professionals is increasing more than ever. System Management involves performing a number of task simultaneously such as-

Processing data

Initiating transactions

Responding to inquiries

Producing reports and its summaries

Manage the data created within the structure of a particular business

It acts in an organization just like a nervous system in a body by providing with the relevant information for ease in the process of decision making.

The purpose of it is to work towards satisfying the information needs of everyone in the business. It means providing the relevant information to those who need it.

Thus, it has a lot of potential to become one of the most promising careers for individuals interested in the workings of a business.

OBJECTIVES OF SYSTEM DEPARTMENT

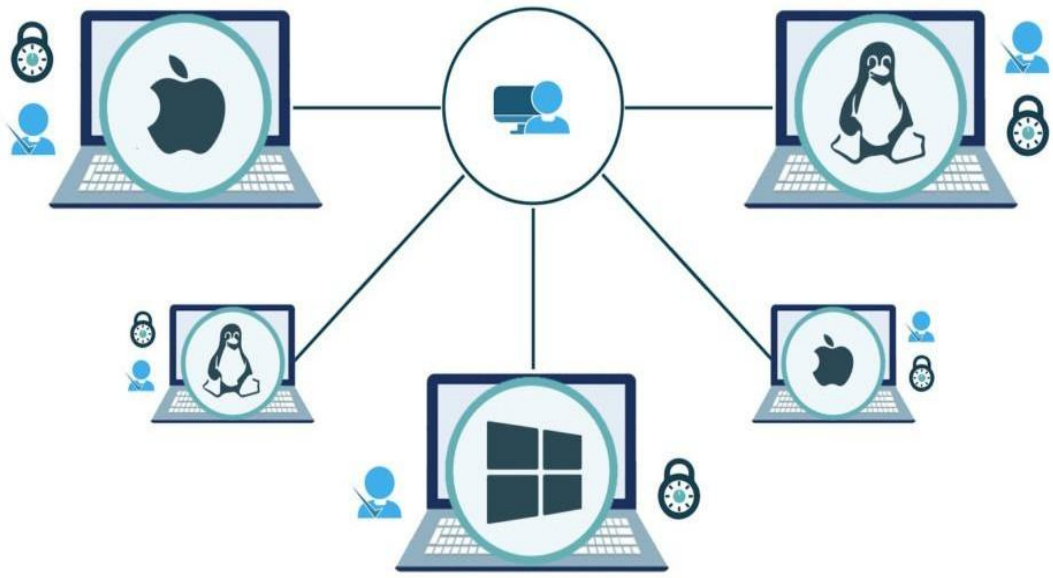
Followings are the main objectives of system management ,

1. **Data Storage** - it is important to store information or processed data for future use.
2. **Data Retrieval** - the data should be smoothly retrieved from storage devices whenever needed by different users.
3. **Data Propagation** - data should be distributed periodically through the organizational network to its users.
4. **A system of efficient and effective planning** - it controls functions of management to provide quick and timely information to the management. The process is very effective to make decisions.
5. This goals are to incorporate the company's organizational structure and processes in order to better control the enterprise and maximize the information system's potential for competitive advantage.
6. **Graphical reports** - give an idea about the performance of different resources employed in the organization.
7. **Controlling the organization** - It helps control the organization to provide the latest information as well as historical data whenever required.
8. **Standard and budgeted performance** - Through matching actual performance with standard and budgeted performance, brings variances to management attention that can be resolved by taking remedial action.
9. It provides the notification of the organization's management power to take advantage of available opportunities.
10. It reports on re-production statistics which helps management people to take fruitful decisions.

The manager's decision-making plays the main role. It lets management people make decisions based on the information that is being processed. Only input data change, it is an acceptable repeat to support various forms of decision-making by managers. Automation capabilities of system management can improve your company's performance.

This means that is the mechanism that offers the managers ' required information as the operational information source and prepares them for their decision-making. It is used by managers as a tool to identify the issues facing them. It helps managers understand the issues and find solutions.

Management information systems, are capable of gathering and storing data from different departments, making valuable reports and presentations that can be used by you and your staff. Besides collecting and processing information, It goals include improving the performance of the company and helping with decision-making.



IMPORTANCE OF SYSTEM MANAGEMENT

Systems management maintains the IT functions that keep a business operational and running efficiently. Most business functions involve some sort of IT system. Each IT system or subsystem must function independently and be integrated with related subsystems to ensure business success.

IT systems must operate at a certain service level for the business to succeed. Systems management ensures that each component is performing as expected so that the business can operate as expected. Good systems management simplifies IT service delivery, allowing employees and workgroups to do their jobs efficiently. It also helps businesses be proactive, spending less time fixing problems and more time planning for the future and making improvements.

Systems management has become even more important as IT systems have grown more complex. As businesses grow and adopt emerging technologies, they must manage IT systems more efficiently. For example, IoT requires new ways of providing DCIM as companies rely on distributed sensors to identify issues with heating, cooling and power use.

However, as new technology is added, a company's IT operations requirements and challenges also grow. Customers and businesses alike require high levels of uptime from increasingly complex IT networks. Lapses in IT system performance can lead to serious consequences, such as financial loss or reputation damage among the business's customer base.

FUNCTIONS OF SYSTEM DEPARTMENT

ORGANISATION OF SYSTEM DEPARTMENT

The acronym IS generally refers to Information Systems, while the acronym IT generally refers to Information Technology. There has been a bit of an evolution in terminology over the years. Nowadays it's common to combine both and just call it Information Services or "The IS Department."

The IS Support team maintains the computer networks of all types of organizations, providing technical support and ensuring the whole company runs smoothly. IT Support monitors and maintains the company computer systems, installs and configures hardware and software, and solves technical problems including:

- Installing and configuring computer hardware, software, systems, networks, printers and scanners
- Monitoring and maintaining computer systems and network
- Responding in a timely manner to service issues and requests
- Providing technical support across the company (this may be in person or over the phone)
- Setting up accounts for new users
- Repairing and replacing equipment as necessary
- Testing new technology

It is also worth noting the physical nature of the role as they occasionally may have to lift and carry heavy equipment like a UPS, Large Monitors, System Servers and Network Ethernet Switches.

They are also responsible for:

1. **Preventive maintenance and backups** - Keeping servers and line-of-business applications up to date and protected from data loss.
2. **Hardware/software deployment and upgrades** – Staying on top of hardware life cycles and Windows life cycles. For instance, when support for a Windows Server is ending they will have to migrate all of of their servers to a modern/latest version of Windows. Another example is upgrading fiber and staying on top with Carriers for future technological trends.
3. **User support and technical training** – When a new application or security change needs to happen, directions on how to setup and configure needs to be developed.
4. **Provide operational support** – Analyst workflow and electronic automation with decision-making capabilities to act as the liaison between the end users and the computer system.
5. **Communications** - Many businesses use email as their official method of communication. Establishing such a mail system depends on the internet access, network infrastructure and connectivity, Mail Server access and availability, and authorized domain access. The network administrator ensures a reliable and secure network configuration and connectivity, and the system administrator manages the server, determines the username configurations and manages user privileges and access.

Here are the basic fundamental responsibilities within an IS Department:

- The Helpdesk (over the phone or chat Tier 1, and if applicable, Tier 2 support)
- On-Site Desktop Hardware and Software support:
  >PC and Laptop install and repair (i.e Dell, MAC, HP)
  >PC accessories such as the keyboard, mouse, etc.
  >Printer and Scanner install and repair (i.e HP, Xerox, Ricoh, Zebra)
  >Loading and troubleshooting applications (i.e Windows OS, MS Office, MAC OS, Apple iWork, etc.)
- Network Engineering and Administration
- Systems Engineering and Server Administration

- Telecommunications Management
- Application Management
- Project Management
- IT Management including Planning and Purchasing
- Analytical systems end user support (application support, updating user account, resetting passwords, etc.)
- Database Administration
- Website Administration
- Lifecycle Management
- Security

INTRODUCTION TO ORACLE

ORACLE is a fourth generation relational database management system. In general, a database management system (DBMS) must be able to reliably manage a large amount of data in a multi-user environment so that many users can concurrently access the same data. All this must be accomplished while delivering high performance to the users of the database. A DBMS must also be secure from unauthorized access and provide efficient solutions for failure recovery. The ORACLE Server provides efficient and effective solutions for the major database features.

ORACLE consists of many tools that allow you to create an application with ease and flexibility. You must determine how to implement your requirements using the features available in ORACLE, along with its tools. The features and tools that you choose to use to implement your application can significantly affect the performance of your application.

Several of the more useful features available to ORACLE application developers are integrity constraints, stored procedures and packages, database triggers, cost-based optimizer, shared SQL, locking and sequences.

This documentation will lead you through the main features and tools of ORACLE. It is intended to give you a partial view of what is available to you to use within the assignments.

This documentation will cover:

ORACLE Architecture - provides a basic understanding of the ``Big Picture'' including the concepts and terminology of the ORACLE Server.

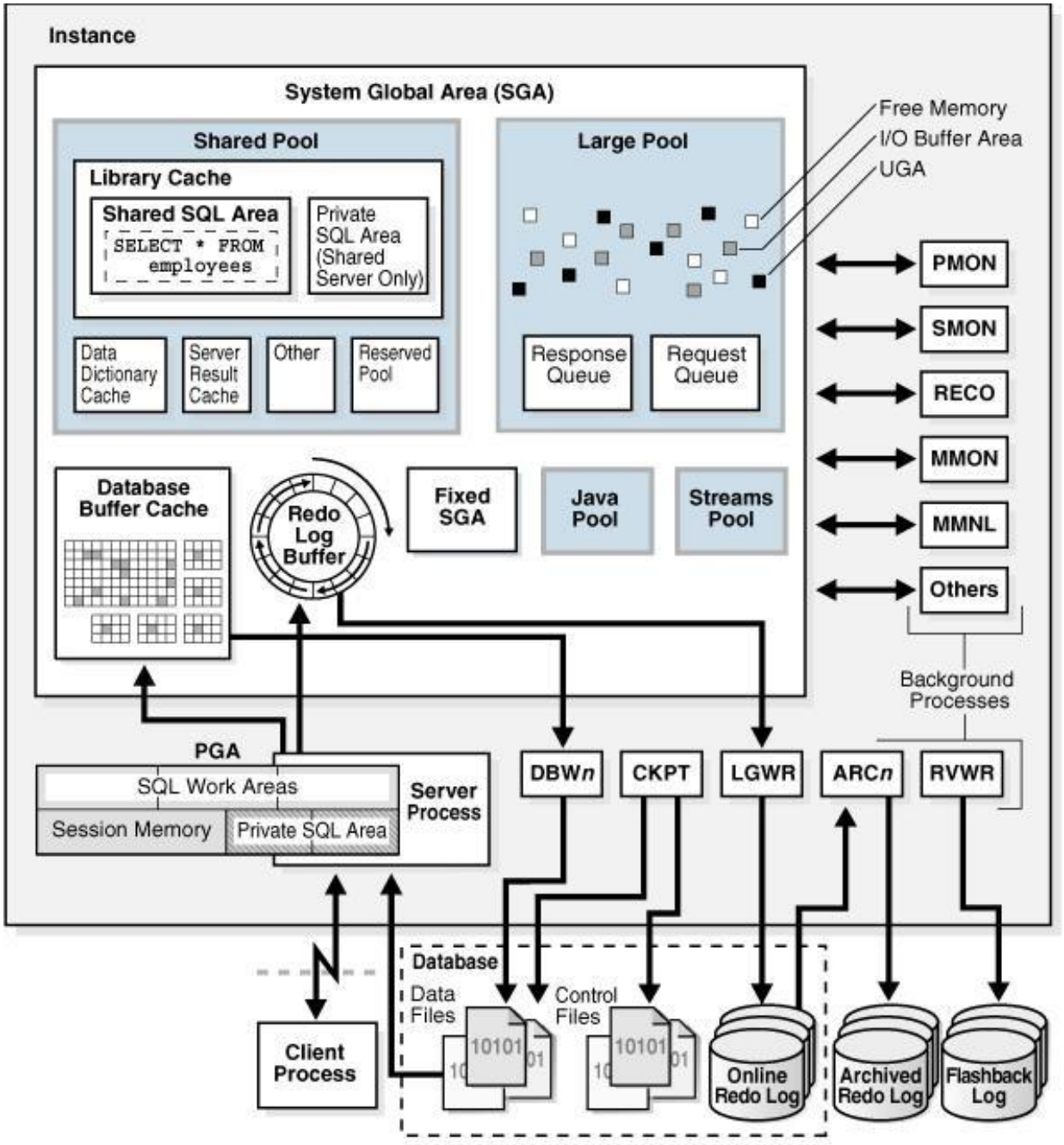
Starting ORACLE And Other Important Information - provides the knowledge of how to set up your account and other system environment variables. It will also provide information about how ORACLE is currently setup, which you will require, and the steps you must take to report any problems.

SQL*Plus (Terminal Monitor) - provides a summary of the commands that you will require in order to create tables and manipulate the database.

SQL*Loader - provides a summary of the commands that you will require to allow you to load data from a file to the database.

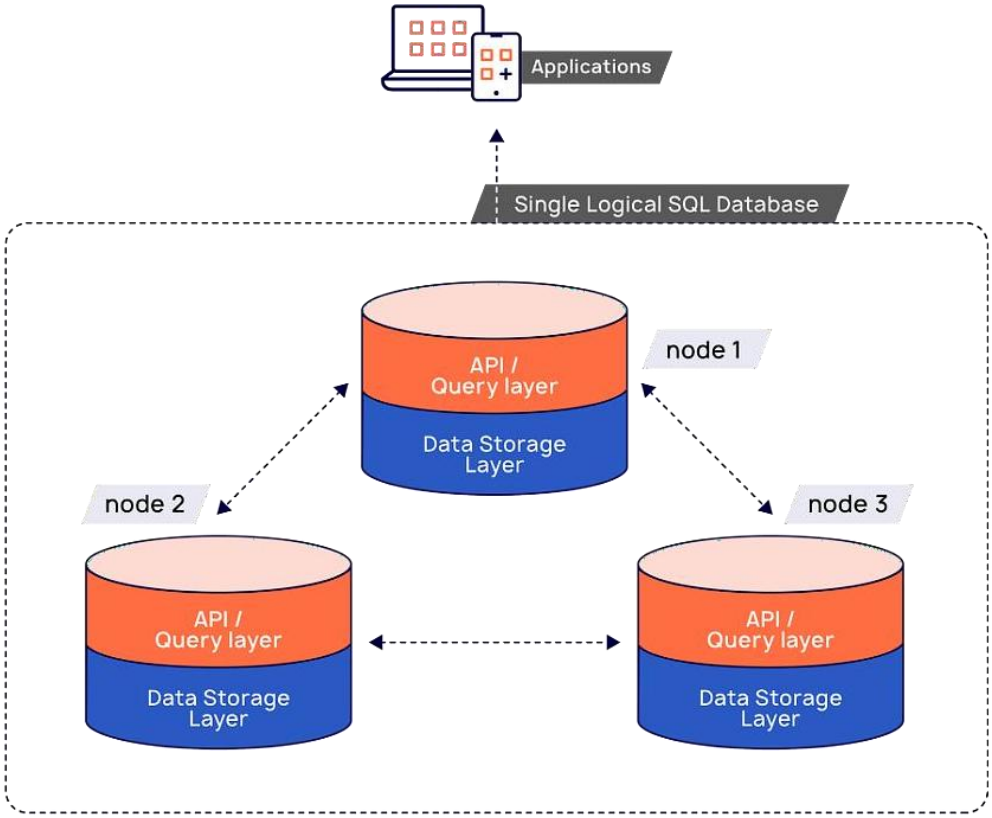
SQL Commands - provides the syntax of some of the SQL Commands in ORACLE to help you get started. This section will only shed light on the Data Definition Language commands and will not contain any information on querying the database

DBMS IN ORACLE



shows a database and its instance. For each user connection to the instance, the application is run by a client process. Each client process is associated with its own server process. The server process has its own private session memory, known as the program global area (PGA)

SQL



Some of The Most Important SQL Commands

SELECT - extracts data from a database

UPDATE - updates data in a database

DELETE - deletes data from a database

INSERT INTO - inserts new data into a database

CREATE DATABASE - creates a new database

ALTER DATABASE - modifies a database

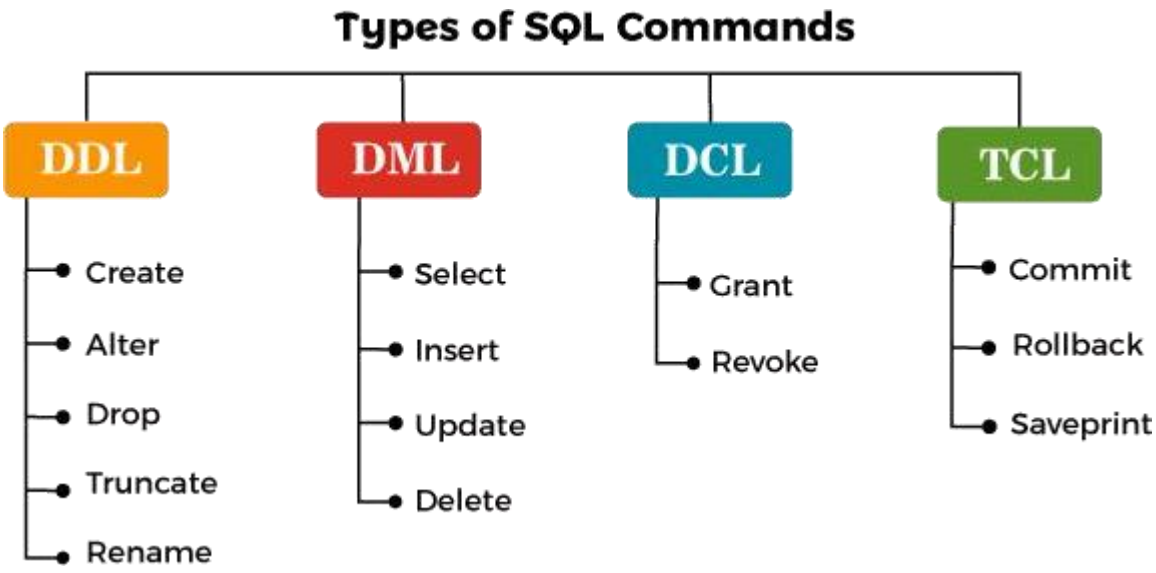
CREATE TABLE - creates a new table

ALTER TABLE - modifies a table

DROP TABLE - deletes a table

CREATE INDEX - creates an index (search key)

DROP INDEX - deletes an index



PROJECT ON EMPLOYEE ATTENDANCE RECORD

Employee Attendance Management System aims to help keep track of employees' working attendance. It's the system used to track how much time the workers spend working and how much time they spend off. It also lessens the use of paper, spreadsheets, or punching time cards, but with attendance software online. This system prohibits employees from stealing time. There is a real-time attendance management system that connects all of the different types of attendance devices that people use, such as smart cards, biometrics, and facial recognition devices.

The employee attendance management system's goal is to assist administrators in keeping track of employees. This software is automated can save time and money for administrators. A solution like this also saves staff workload and boosts efficiency. An employee attendance monitoring system allows HR to observe who is clocked in and when they are timed out. You may rest assured that you are only paying your staff for the time they spend on the job. The employee attendance system provides a precise view of the company's labor costs. It is a requirement of the HR department.

TABLES OF ATTENDANCE RECORD

Employee Master Table

FIELDS	DATATYPE	RELATIONSHIP
Emp_ID	int	Primary Key
F_Name	Varchar(50)	Not Null
L_Name	Varchar(50)	Not Null
Address 1	Varchar(50)	Not Null

Address 2	Varchar(50)	Not Null
Address 3	Varchar(50)	Not Null
Contact_No	int	Not Null
Joinned Date	date	Not Null
Father_Name	Varchar(50)	Not Null
Email_ID	Varchar(50)	Not Null

Attendance Details

FIELDS	DATATYPE	RELATIONSHIP
Emp_ID	int	Foreign Key
TOL	Varchar(50)	Not Null
NOD	datetime	Not Null
Off_days	datetime	Not Null
NH	datetime	Not Null

Leave Master

FIELDS	DATATYPE	RELATIONSHIP
Emp_ID	int	Foreign Key
TOL	Varchar(50)	Foreign Key
Date_from	datetime	Not Null
Date_to	datetime	Not Null
NOD	datetime	Not Null

Types of Leave

FIELDS	DATATYPE	RELATIONSHIP
TOL	Varchar(50)	Primary Key

OUTPUTS OF ALL TABLES

```
CREATE TABLE `yearly_date_calendar` (
  `calendarDate` date NOT NULL
);

INSERT INTO `yearly_date_calendar` (`calendarDate`) VALUES
('2016-11-01'),
('2016-11-02'),
('2016-11-03'),
('2016-11-04'),
('2016-11-05'),
('2016-11-06'),
('2016-11-07'),
('2016-11-08'),
('2016-11-09'),
('2016-11-10'),
('2016-11-11'),
('2016-11-12'),
('2016-11-13'),
('2016-11-14'),
('2016-11-15'),
('2016-11-16'),
('2016-11-17'),
('2016-11-18'),
('2016-11-19'),
('2016-11-20'),
('2016-11-21'),
('2016-11-22'),
('2016-11-23'),
('2016-11-24'),
('2016-11-25'),
('2016-11-26'),
('2016-11-27'),
('2016-11-28'),
('2016-11-29'),
('2016-11-30');
```

```
CREATE TABLE employee(
  `id` int(10),
  `empId` varchar(255),
  `first_name` varchar(100),
  `last_name` varchar(100),
  `middle_name` varchar(100)
);
```

```
INSERT INTO employee (`id`,`empId`, `first_name`, `last_name`,
`middle_name`) VALUES
(1,'EPD-111Q2', 'Akram', 'Mohamed', 'Wahid');
```

```sql
CREATE TABLE `employee_attendance` (
  `attendanceId` int(10),
  `empId` varchar(255),
  `inorout` int(11),
  `remarks` varchar(255),
  `attendance_date` date,
  `attendance_time` time,
  `location` varchar(255),
  `created_at` timestamp NULL DEFAULT NULL,
  `updated_at` timestamp NULL DEFAULT NULL,
  `deleted_at` timestamp NULL DEFAULT NULL,
  `created_by` int(11) DEFAULT '0',
  `updated_by` int(11) DEFAULT '0',
  `deleted_by` int(11) DEFAULT '0'
);
```

```sql
INSERT INTO `employee_attendance` (`attendanceId`, `empId`, `inorout`,
`remarks`, `attendance_date`, `attendance_time`, `location`,
`created_at`, `updated_at`, `deleted_at`, `created_by`, `updated_by`,
`deleted_by`) VALUES
(4987, 'EPD-111Q2', 0, NULL, '2014-11-02', '07:56:43', 'BIOMETRIC',
'2014-11-06 08:26:47', '2014-11-06 08:26:47', NULL, 0, 0, 0),
(4988, 'EPD-111Q2', 0, NULL, '2014-11-02', '07:56:44', 'BIOMETRIC',
'2014-11-06 08:26:48', '2014-11-06 08:26:48', NULL, 0, 0, 0),
(4953, 'EPD-111Q2', 1, NULL, '2014-11-02', '18:25:40', 'BIOMETRIC',
'2014-11-06 08:27:24', '2014-11-06 08:27:24', NULL, 0, 0, 0),
(4954, 'EPD-111Q2', 1, NULL, '2014-11-02', '18:25:41', 'BIOMETRIC',
'2014-11-06 08:27:25', '2014-11-06 08:27:25', NULL, 0, 0, 0),
(5012, 'EPD-111Q2', 1, NULL, '2014-11-03', '05:55:39', 'BIOMETRIC',
'2014-11-06 08:28:10', '2014-11-06 08:28:10', NULL, 0, 0, 0),
(5063, 'EPD-111Q2', 1, NULL, '2014-11-03', '16:07:16', 'BIOMETRIC',
'2014-11-06 08:28:49', '2014-11-06 08:28:49', NULL, 0, 0, 0),
(5117, 'EPD-111Q2', 0, NULL, '2014-11-04', '07:30:14', 'BIOMETRIC',
'2014-11-06 08:29:30', '2014-11-06 08:29:30', NULL, 0, 0, 0),
(5165, 'EPD-111Q2', 0, NULL, '2014-11-04', '20:42:43', 'BIOMETRIC',
'2014-11-06 08:30:07', '2014-11-06 08:30:07', NULL, 0, 0, 0),
(5166, 'EPD-111Q2', 0, NULL, '2014-11-04', '20:42:45', 'BIOMETRIC',
'2014-11-06 08:30:08', '2014-11-06 08:30:08', NULL, 0, 0, 0),
(5292, 'EPD-111Q2', 0, NULL, '2014-11-06', '06:02:18', 'BIOMETRIC',
'2014-11-06 08:31:51', '2014-11-06 08:31:51', NULL, 0, 0, 0),
(5293, 'EPD-111Q2', 0, NULL, '2014-11-06', '06:02:20', 'BIOMETRIC',
'2014-11-06 08:31:52', '2014-11-06 08:31:52', NULL, 0, 0, 0),
(5334, 'EPD-111Q2', 1, NULL, '2014-11-06', '14:51:17', 'BIOMETRIC',
'2014-11-07 08:01:59', '2014-11-07 08:01:59', NULL, 0, 0, 0),
(5397, 'EPD-111Q2', 0, NULL, '2014-11-07', '06:00:10', 'BIOMETRIC',
'2014-11-07 08:02:49', '2014-11-07 08:02:49', NULL, 0, 0, 0),
(5440, 'EPD-111Q2', 1, NULL, '2014-11-07', '14:47:25', 'BIOMETRIC',
'2014-11-13 10:03:56', '2014-11-13 10:03:56', NULL, 0, 0, 0),
(5441, 'EPD-111Q2', 1, NULL, '2014-11-07', '14:47:27', 'BIOMETRIC',
'2014-11-13 10:03:57', '2014-11-13 10:03:57', NULL, 0, 0, 0),
(5501, 'EPD-111Q2', 0, NULL, '2014-11-08', '06:00:13', 'BIOMETRIC',
'2014-11-13 10:04:43', '2014-11-13 10:04:43', NULL, 0, 0, 0),
(5543, 'EPD-111Q2', 1, NULL, '2014-11-08', '14:51:59', 'BIOMETRIC',
'2014-11-13 10:05:17', '2014-11-13 10:05:17', NULL, 0, 0, 0),
(5606, 'EPD-111Q2', 0, NULL, '2014-11-09', '06:02:02', 'BIOMETRIC',
'2014-11-13 10:06:05', '2014-11-13 10:06:05', NULL, 0, 0, 0),
(5649, 'EPD-111Q2', 1, NULL, '2014-11-09', '14:45:07', 'BIOMETRIC',
'2014-11-13 10:06:39', '2014-11-13 10:06:39', NULL, 0, 0, 0),
(5712, 'EPD-111Q2', 0, NULL, '2014-11-10', '06:01:46', 'BIOMETRIC',
'2014-11-13 10:07:27', '2014-11-13 10:07:27', NULL, 0, 0, 0),
(5759, 'EPD-111Q2', 1, NULL, '2014-11-10', '14:52:23', 'BIOMETRIC',
'2014-11-13 10:08:04', '2014-11-13 10:08:04', NULL, 0, 0, 0),
(5760, 'EPD-111Q2', 1, NULL, '2014-11-10', '14:52:25', 'BIOMETRIC',
'2014-11-13 10:08:04', '2014-11-13 10:08:04', NULL, 0, 0, 0);
```

SOME QUERIES OF EMPLOYEE ATTENDANCE TABLE

```
DROP PROCEDURE IF EXISTS generateAttendanceReport;
DELIMITER $$
CREATE PROCEDURE generateAttendanceReport(IN search_startdate date,IN
search_enddate date,IN employeeRoleIds text,IN dayOffIds text,IN
vacationIds text)
BEGIN

DROP TEMPORARY TABLE IF EXISTS tableEmployeeAttendance;
CREATE TEMPORARY TABLE tableEmployeeAttendance AS
SELECT emp.empId,emp.first_name,x.attendance_date,
CASE
  WHEN x.CheckIN ='0' and x.Checkout = '1' THEN '1'
  WHEN x.CheckIN ='0' and x.Checkout is null then '2'
  WHEN x.CheckIN is null and x.Checkout = '1' then '3'
  ELSE '0'
END AS Status
FROM employee emp INNER JOIN
(
SELECT staff.empId,staff.first_name,att.attendance_date,
   max(case when att.inorout ='0' then att.inorout end) as 'CheckIN',
  max(case when att.inorout ='1' then att.inorout end) as 'Checkout'
FROM employee staff
LEFT JOIN employee_attendance att
ON staff.empId = att.empId
WHERE att.attendance_date >= DATE_FORMAT(search_startdate, '%Y-%m-%d')
AND  att.attendance_date <= DATE_FORMAT(search_enddate, '%Y-%m-%d')
GROUP BY staff.empId,att.attendance_date
) x  ON emp.empId = x.empId
GROUP BY x.empId,x.attendance_date;
```

```
/* Start - track the employee who are on full day work and on leaves  */
BEGIN
DECLARE row_empId int;
DECLARE row_empcode varchar(20);
DECLARE row_name varchar(200);
DECLARE v_finished int DEFAULT 0;
DECLARE dayoff_count int DEFAULT 0;
DECLARE leave_count int DEFAULT 0;
DECLARE schedule_fullday int DEFAULT 0;
DECLARE joined_after int DEFAULT 0;
DECLARE left_before int DEFAULT 0;
DECLARE loop_startDate date;
DECLARE loop_endDate date;

DECLARE formatted_startDate date;
DECLARE formatted_endDate date;

SET formatted_startDate = DATE_FORMAT(search_startdate, '%Y-%m-%d');
SET formatted_endDate = DATE_FORMAT(search_enddate, '%Y-%m-%d');

SET loop_startDate = DATE_FORMAT(search_startdate, '%Y-%m-%d');
SET loop_endDate = DATE_FORMAT(search_enddate, '%Y-%m-%d');

    WHILE loop_startDate <= loop_endDate DO
      SET row_empId = null;
      SET row_empcode = null;
      SET row_name = null;
      SET v_finished = 0;
      SET dayoff_count = 0;
```

```
      SET leave_count = 0;
      SET schedule_fullday = 0;
      SET joined_after = 0;

      BEGIN
      DECLARE attendance_cursor CURSOR FOR
                                              SELECT    empcursor.id    AS
staffId,empcursor.empId,empcursor.first_name
          FROM employee empcursor
          WHERE empcursor.hire_date <= formatted_endDate
          AND empcursor.leaving_date >= formatted_startDate
          AND empcursor.deleted_at IS NULL
          AND
          NOT EXISTS
          (
              SELECT NULL
              FROM tableEmployeeAttendance attcursor
              WHERE attcursor.empId = empcursor.empId
              AND attcursor.attendance_date = loop_startDate
          );

          DECLARE CONTINUE HANDLER FOR NOT FOUND SET v_finished = 1;
            OPEN attendance_cursor;
              get_attendance : LOOP
                                            FETCH   attendance_cursor   INTO
row_empId,row_empcode,row_name;
                IF v_finished = 1 THEN  /* if the result is empty */
                LEAVE get_attendance;
                END IF;
```

```
                    SELECT COUNT(*) INTO leave_count FROM employee_leave
WHERE empId = row_empId AND start_date <= loop_startDate AND end_date >=
loop_startDate        AND        deleted_at        IS        NULL        AND
FIND_IN_SET(leavetypeId,vacationIds);
                    SELECT COUNT(*) INTO dayoff_count FROM employee_leave
WHERE empId = row_empId AND start_date <= loop_startDate AND end_date >=
loop_startDate        AND        deleted_at        IS        NULL        AND
FIND_IN_SET(leavetypeId,dayOffIds);
                              SELECT  COUNT(*)  INTO  schedule_fullday  FROM
employee_schedule   WHERE   empId   =   row_empId   AND   start_date   <=
loop_startDate  AND  end_date  >=  loop_startDate  AND  hours  =  24  AND
deleted_at IS NULL;
                 SELECT COUNT(*) INTO joined_after FROM employee WHERE id
= row_empId AND hire_date > loop_startDate AND deleted_at IS NULL;
                SELECT COUNT(*) INTO left_before FROM employee WHERE id =
row_empId AND leaving_date < loop_startDate AND deleted_at IS NULL;

                IF(leave_count > 0) THEN
                              INSERT  INTO  tableEmployeeAttendance  VALUES
(row_empcode,row_name,loop_startDate,4);
                ELSEIF(dayoff_count > 0) THEN
                              INSERT  INTO  tableEmployeeAttendance  VALUES
(row_empcode,row_name,loop_startDate,5);
                ELSEIF(schedule_fullday > 0) THEN
                              INSERT  INTO  tableEmployeeAttendance  VALUES
(row_empcode,row_name,loop_startDate,6);
                ELSEIF(joined_after > 0) THEN
                              INSERT  INTO  tableEmployeeAttendance  VALUES
(row_empcode,row_name,loop_startDate,7);
                ELSEIF(left_before > 0)  THEN
```

```
                                INSERT INTO tableEmployeeAttendance VALUES
(row_empcode,row_name,loop_startDate,8);
                END IF;

              END LOOP get_attendance;
            CLOSE attendance_cursor;
        END;
      SET loop_startDate = DATE_ADD(loop_startDate, INTERVAL 1 DAY);
    END WHILE;
END;
/* END - track the staff who are on full day work and on leaves  */


SET @@group_concat_max_len = 75000;
SET @sql = NULL;
SELECT
  GROUP_CONCAT(DISTINCT
    CONCAT(
      'max(CASE WHEN calendaremployee.calendarDate = ''',
      date_format(calendarDate, '%Y-%m-%d'),
      ''' THEN coalesce(att.Status, 0) END) AS `',
      date_format(calendarDate, '%Y-%m-%d'), '`'
    )
  ) INTO @sql
FROM yearly_date_calendar
where calendarDate >= DATE_FORMAT(search_startdate, '%Y-%m-%d')
  and calendarDate <= DATE_FORMAT(search_enddate, '%Y-%m-%d');

SET @query :=
                                                    CONCAT('SELECT
```

```
calendaremployee.employeeId,calendaremployee.first_name,calendaremployee.
last_name,calendaremployee.empId, ', @sql, '
            FROM
            (
                                                    SELECT    emp.id    AS
employeeId,cal.calendarDate,emp.first_name,emp.last_name,emp.empId
              FROM yearly_date_calendar cal
              CROSS JOIN employee emp
               WHERE emp.hire_date <= ''',DATE_FORMAT(search_enddate, '%Y-
%m-%d'),'''  AND  emp.leaving_date  >=  ''',DATE_FORMAT(search_startdate,
'%Y-%m-%d'),''' AND emp.deleted_at IS NULL AND FIND_IN_SET(emp.roleIds,
''',employeeRoleIds,''' )
             ) calendaremployee
            LEFT JOIN tableEmployeeAttendance att
              on calendaremployee.empId = att.empId
              and calendaremployee.calendarDate = att.attendance_date
                                  WHERE  calendaremployee.calendarDate  >=
''',DATE_FORMAT(search_startdate, '%Y-%m-%d'), '''
                                    AND  calendaremployee.calendarDate  <=
''',DATE_FORMAT(search_enddate, '%Y-%m-%d'),'''
                                   group  by  calendaremployee.first_name,
calendaremployee.empId
              order by calendaremployee.empId');


PREPARE statement FROM @query;
EXECUTE statement;
DEALLOCATE PREPARE statement;
DROP TABLE tableEmployeeAttendance;
SET @@group_concat_max_len = 1024;
```

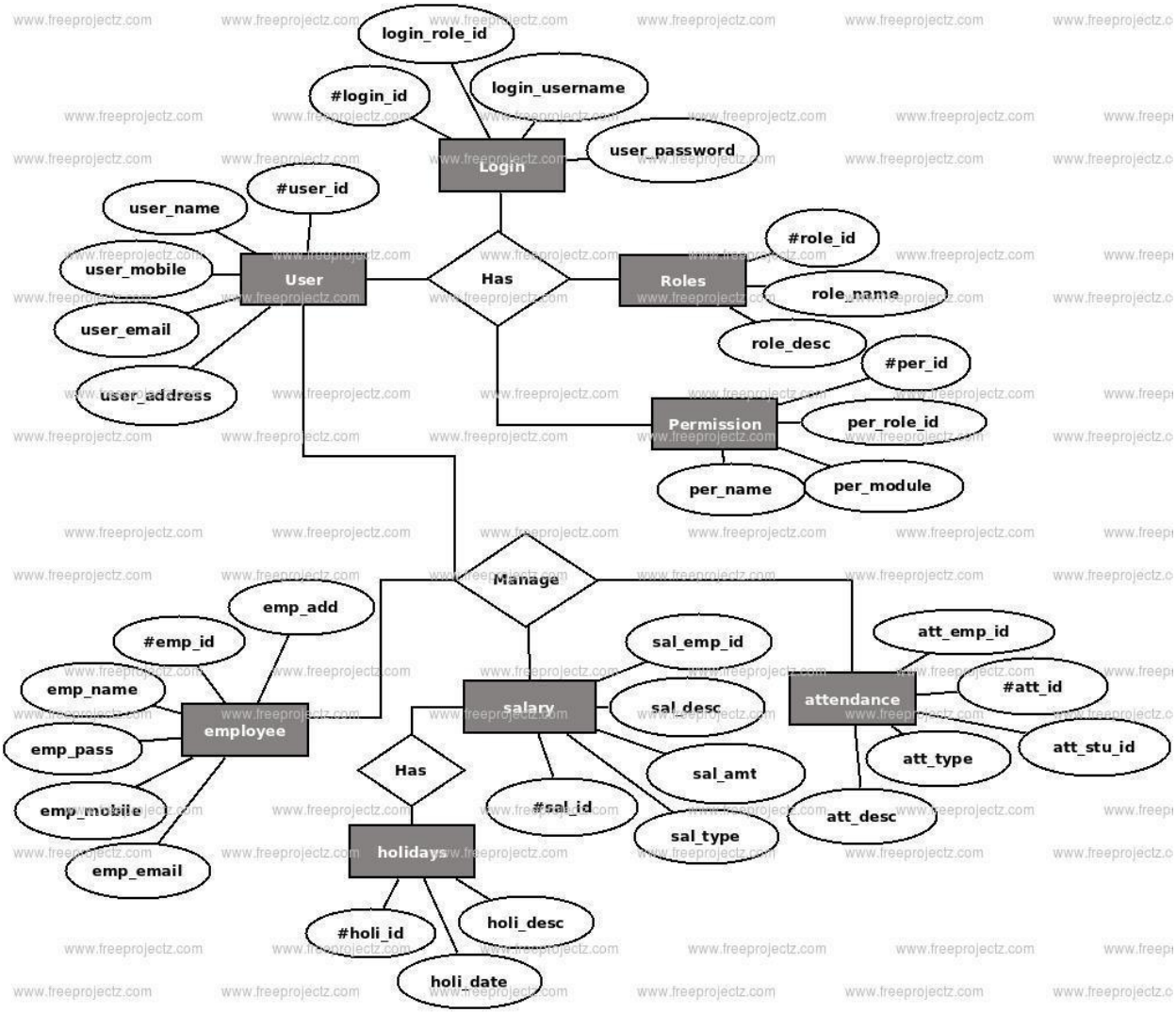
```
END $$
DELIMITER ;
```

```php
use Illuminate\Support\Facades\DB;
use Doctrine\DBAL\Driver\PDOConnection;
```

```php
$db = DB::connection()->getPdo();
$db->setAttribute(PDOConnection::ATTR_ERRMODE,
PDOConnection::ERRMODE_EXCEPTION);
$db->setAttribute(PDOConnection::ATTR_EMULATE_PREPARES, true);

$queryResult = $db->prepare('call generateAttendanceReport(?,?,?,?,?)');
$queryResult->bindParam(1, $start_date);
$queryResult->bindParam(2, $end_date);
$queryResult->bindParam(3, $employeeRoles,PDOConnection::PARAM_STR);
$queryResult->bindParam(4,
$leaveTypesDayOffIds,PDOConnection::PARAM_STR);
$queryResult->bindParam(5,
$leaveTypesVactionIds,PDOConnection::PARAM_STR);
$queryResult->execute();
$results = $queryResult->fetchAll(PDOConnection::FETCH_ASSOC);
$queryResult->closeCursor();
return $results;
```

ER MODEL OF ATTENDANCE RECORD



ER Diagram For Employee Attendance System

EMPLOYEE ATTENDANCE TABLE SKECH

date	name	id	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	total	half days count	tatal half days	leave taken	no of days	salary
01-Jan-14	raj	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	27	0	0	0	27	5400
01-Jan-14	ravi	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01-Jan-14	ragu	3	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	1	1	0	1	1	1	17	2	1	1	19	3800
01-Jan-14	madhu	4	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0	0	0	1	1	1	15	2	1	2	18	3600
01-Jan-14	ramesh	5	0	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	1	1	1	13	2	1	1	15	3000
01-Jan-14	suresh	6	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0	0	0	1	1	1	15	3	1.5	3	20	3900
01-Jan-14	mahesh	7	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0	0	0	1	1	1	15	4	2	4	21	4200
01-Jan-14	arun	8	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0	0	0	1	1	1	15	1	0.5	5	21	4100
01-Jan-14	ranjan	9	0	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0	0	0	1	1	1	14	4	2	2	18	3600
02-Jan-14	rahul	10	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0	0	0	1	1	1	15	1	0.5	1	17	3300
29-Jan-14	ganesh	11	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0	0	0	1	1	1	15	2	1	4	20	4000
30-Jan-14	veeresh	12	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0	0	0	1	1	1	15	3	1.5	3	20	3900
01-Feb-14	raj	1	1	1	0	1	1	1	0	1	1	0	1	0	1	0	1	1	0	1	1	1	0	1	1	1	0	1	1	0				19	0	0	0	19	3800
01-Feb-14	ravi	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0
01-Feb-14	ragu	3	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0				11	2	1	3	15	3000
01-Feb-14	madhu	4	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0				11	2	1	1	13	2600
01-Feb-14	ramesh	5	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0				11	2	1	2	14	2736
07-Feb-14	suresh	6	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0				11	2	1	2	14	2724
08-Feb-14	mahesh	7	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0				11	2	1	2	14	2712
09-Feb-14	arun	8	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0				11	2	1	1	13	2699
10-Feb-14	ranjan	9	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0				11	2	1	1	13	2687
28-Feb-14	rahul	10	1	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0				11	2	1	4	16	3200
01-Mar-14	raj	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	27	0	0	0	27	5400
02-Mar-14	ravi	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03-Mar-14	ragu	3	1	1	0	0	0	1	0	0	1	0	0	1	1	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	11	1	0.5	2	14	2700
04-Mar-14	madhu	4	1	1	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	10	1	0.5	3	14	2700
05-Mar-14	ramesh	5	1	1	0	0	0	1	0	0	1	0	0	1	1	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	11	3	1.5	4	17	3300

SWOT ANALYSIS OF HINDUSTAN COPPER LIMITED

STRENGTH

- Only Company mining copper ore in India.
- Fully developed infrastructure facilities.
- Holding mining lease of more than 80% of country's copper reserves.
- Vertically integrated operations greater business certainty.
- Skilled and well-trained workforce.
- Established brand value.
- Wide distribution network and established customer base.

WEAKNESS

- Smaller size mine deposits except Malanjkhand.
- Aged equipment & old technology for value addition.
- Low process efficiency.
- High cost of logistics due to multi location units.
- Low utilization of two plants, TCP & GCP resulting in cross subsidization.
- Aged workforce.

OPPORTUNITIES

- Growing copper demand within country.
- Ready market for copper concentrate in India due to large smelting/refining capacity.
- Buoyancy in world copper prices.
- Scope for expansion of mine capacity.
- Opportunity to explore new deposits.

THREATS

- Volatility in LME Copper price affecting turnover/profitability.
- Increasing cost of inputs.
- Attrition of skilled manpower.
- Regulatory risks in mining increasing.
- Risk in existing non-profitable business.
- Non-availability of competent underground Metal mining contractor / Outsourcing agency in India.

CONCLUSION

Clearly, management information system must be implemented to provide proper information to those charged with decision-making. The facts would aid and improve the entire decision making process to come up with accurate and on time strategic decisions. Management Information System increase accessibility and sharing of correct and high quality information to the final users. For the Management Information System to be effective, carefully thought,planned and implemented database should subsist to interconnect the modified decisions. The organization's management information system must conform to the firm's administrative and tactical objectives. The company's top management should engage in improving the Information System and make an effective contribution to its design. It should also play an important role in