MINNESOTA TECH FOR SUCCESS
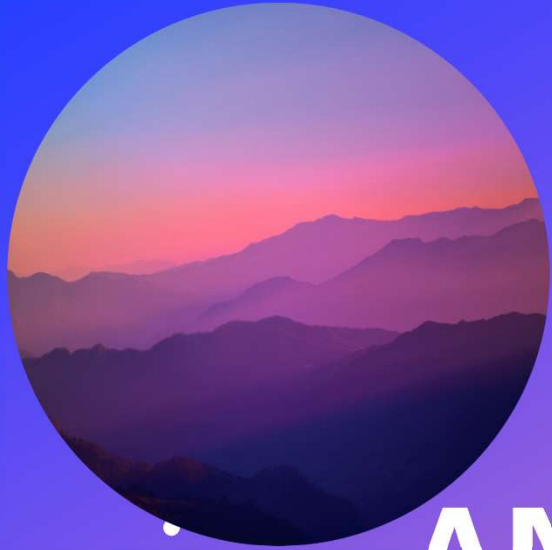
Week 13-15: Cloud Computing

2/28/2024

Agenda

- **Announcements**
- **Classroom (25 min)**
  - Recap Cloud Computing
  - Everyday Uses of the Cloud
  - Intro to Google Cloud (CGP)
- **Break (5 min)**
- **Warehouse (1.5 hrs)**
  - Desktop & laptop sorting and parting

ANNOUNCEMENTS

Week 14

Announcements for 2/28

- **Calendar**
  - Next session: **Wednesday, 3/6/2024**

- **Lockers**

- Week 13-15: Cloud Computing – Feb. 21st , 28th , & Mar. 6th

- Week 16-18: Database Management and Troubleshooting – Mar. 13th, 27th, & Apr. 3rd

Values

- **R**espect
- **A**ccountability
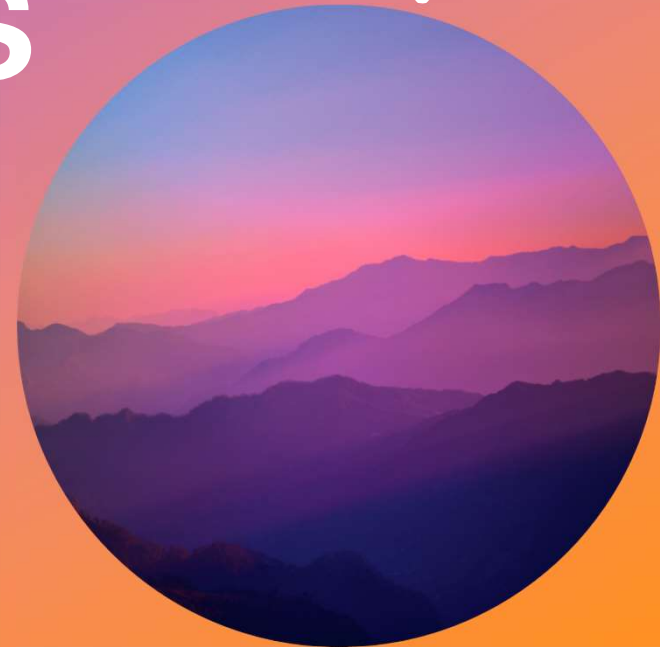- **I**mprovement
- **S**teadfast
- **E**ncouragement

MODULE 3: ADVANCED IT CONCEPTS

Cloud Computing

Cloud Computing: Objectives

1. What is cloud computing?
   - Explanation of cloud computing, its advantages, and how it's used to store data and run applications remotely.
2. Introduction to major cloud providers
   - Overview of major cloud service providers such as Amazon Web Services (AWS), Microsoft Azure & Google Cloud.
3. Everyday uses of the cloud
   - Examples of common cloud-based services like email, file storage, and streaming.
4. How to use cloud services
   - Practical guidance on accessing and using cloud services.

RECAP: CLOUD COMPUTING

What is Cloud Computing?

Recap: What is Cloud Computing?

- **Cloud Computing:** On-demand computing resources as services over the internet

    - People/businesses do not need to self-manage resources themselves

Recap: Types of Cloud Computing: Deployment Model

- Public Cloud – 3rd party cloud service providers for shared on demand resources
  - Accessible by the general public over the internet
  - Owned by the cloud provider
  - Pay for what is used and for how long

- Private Cloud – built-in managed, owned by a single organization
  - Can also be managed by a third party on or off premise
  - Paid all for upfront and privately owned

- Hybrid Cloud – combines public and private to maintain security & compliance capabilities
  - Government agencies may typically use this model with internal operations and the public

Types of Cloud Computing: Service Model

1. **Infrastructure as a service (IaaS):**
   - On-demand access to IT infrastructure services, including compute, storage, networking, and virtualization.
   - Gives highest level of control over IT resources and most closely resembles traditional on-premises IT resources.

2. **Platform as a service (PaaS):**
   - All the hardware and software resources needed for cloud application development.
   - With PaaS, companies can focus fully on application development without the burden of managing and maintaining the underlying infrastructure.

3. **Software as a service (SaaS):**
   - Full application stack as a service, from underlying infrastructure to maintenance and updates to the app software itself.
   - Often an end-user application, where both the service and the infrastructure is managed and maintained by the cloud service provider.

EVERYDAY USES OF THE CLOUD
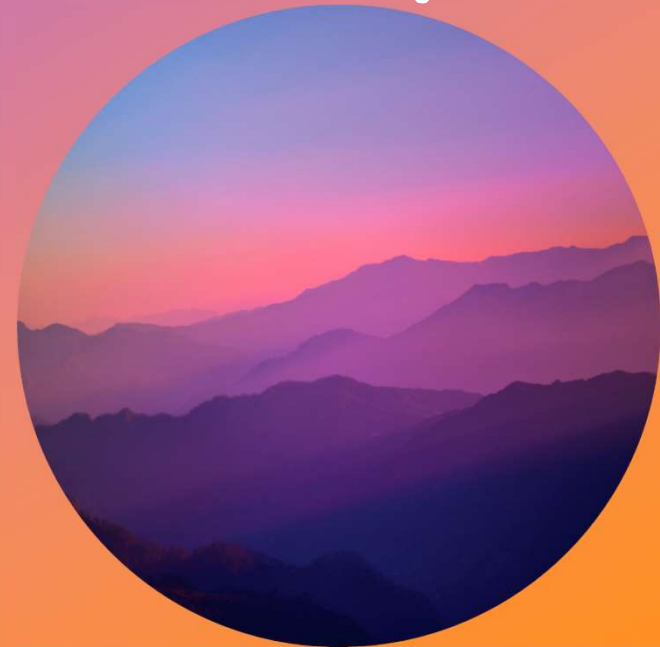
Common Business Uses of the Cloud

- Production/database migration
- Traffic Bursting - Unexpected or sudden network traffic volume peaks and troughs based on seasonal factors
- Backup & Disaster recovery
- Web Hosting
- App development and testing
- Proof of concept
- Big Data and data manipulation

Business Applications: CRM

- CRM – Customer Relationship Management
  - process in which an organization administers its interactions with customers using data analysis to study information

- CRM systems allow organizations to learn more about their target audiences and how to cater to their needs

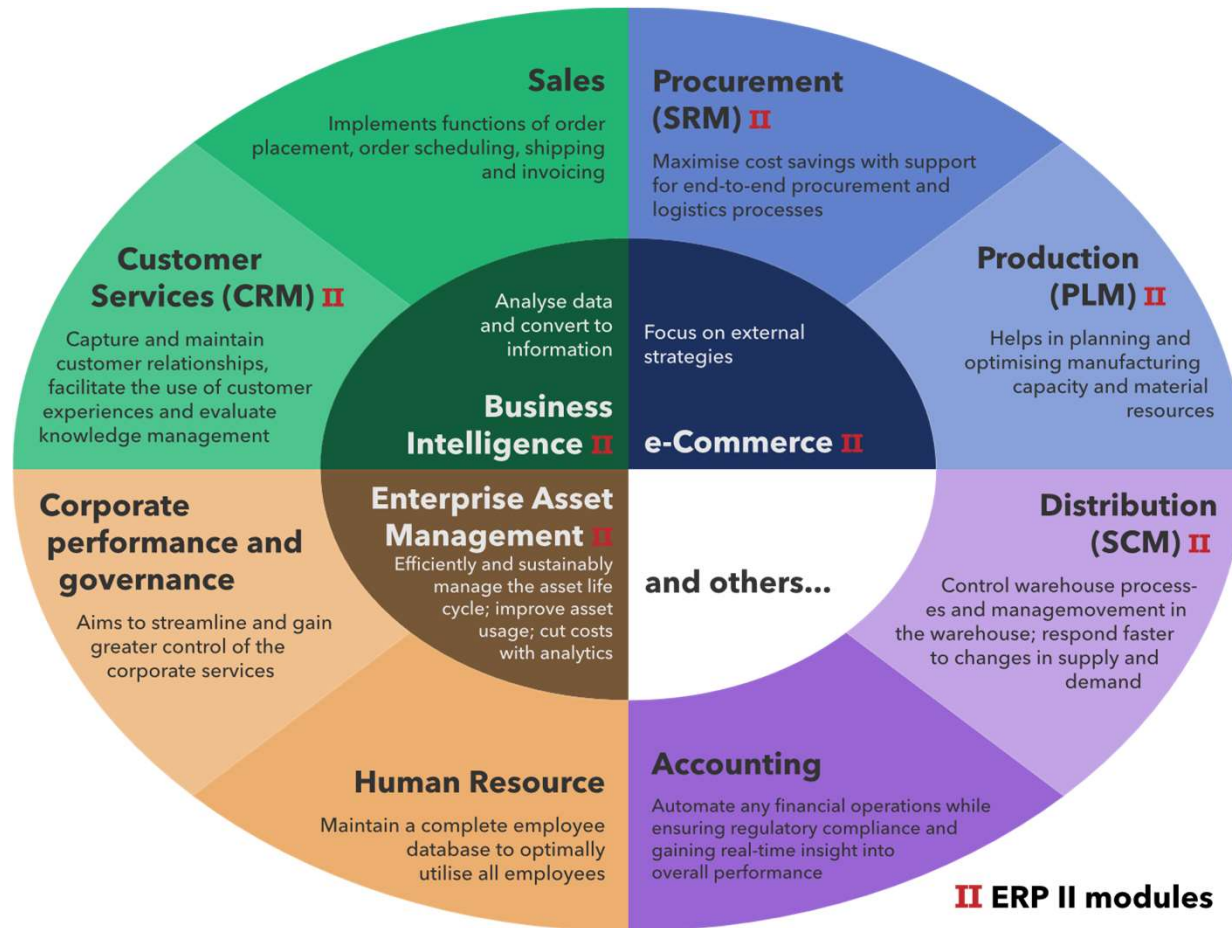- Goal: Retain customers, drive sales growth

Business Applications: ERP

- ERP - enterprise resource planning
  - the management of all the information and resources involved in a company's operations by an integrated computer system

- Can run an organization from a single software platform. Once the sole property of large enterprise, the cloud now lets small to midsize businesses take advantage of ERP's benefits

ERP System Overview

Sales
Implements functions of order placement, order scheduling, shipping and invoicing

Procurement (SRM) II
Maximise cost savings with support for end-to-end procurement and logistics processes

Customer Services (CRM) II
Capture and maintain customer relationships, facilitate the use of customer experiences and evaluate knowledge management

Production (PLM) II
Helps in planning and optimising manufacturing capacity and material resources

Analyse data and convert to information

Focus on external strategies

Business Intelligence II

e-Commerce II

Corporate performance and governance
Aims to streamline and gain greater control of the corporate services

Enterprise Asset Management II
Efficiently and sustainably manage the asset life cycle; improve asset usage; cut costs with analytics

and others...

Distribution (SCM) II
Control warehouse processes and manage movement in the warehouse; respond faster to changes in supply and demand

Human Resource
Maintain a complete employee database to optimally utilise all employees

Accounting
Automate any financial operations while ensuring regulatory compliance and gaining real-time insight into overall performance

II ERP II modules

16

Everyday End-user Uses of the Cloud

- **SaaS**
  - Entertainment: Netflix, Spotify
  - Social Network: Facebook, X (Twitter), Instagram, TikTok
  - Assistant: Siri, Alexa, Google Assistant, Bixby
  - Messaging: WhatsApp, Messenger
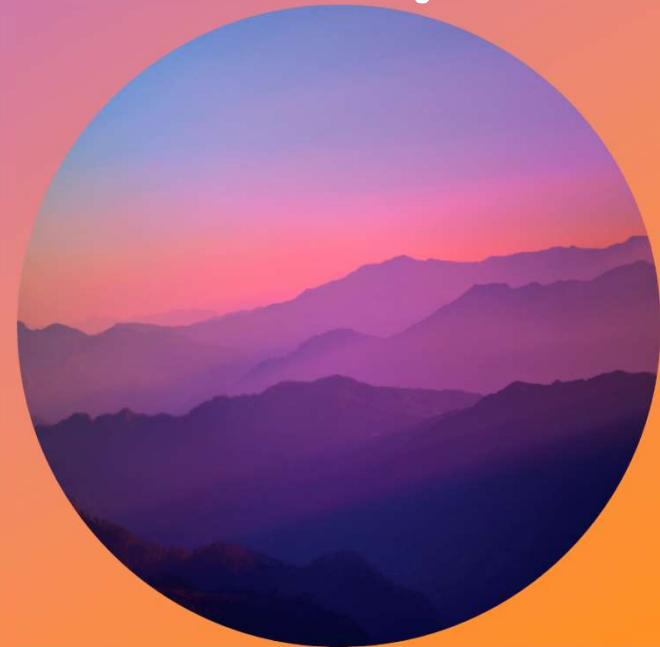 - Productivity: Microsoft 365, Google Workspace,

- **IaaS**
  - Vmware, IBM Cloud

- **PaaS**
  - AWS, GCP, Azure

INTRODUCTION TO MAJOR CLOUD PROVIDERS

Google Cloud (GCP)

GOOGLE CLOUD (GCP)

GCP Offers

- **Products**
  - 100+
  - AI Machine Learning, Business Intelligence, Compute, Containers, Data Analytics, Databases, Developer Tools, Distributed Cloud, Hybrid & Multicloud, Industry Specific, Integration Services, Management Tools, Maps and Geospatial, Media Services, Migration, Mixed Reality, Networking, Operations, Productivity and Collaboration, Security, Serverless, Storage, Web3

- **GCP Certification**
  - 11 certifications
  - Roles: Cloud digital leader, Cloud Engineer, Cloud Architect, Cloud Database Engineer, Cloud Developer, Data Engineer, Cloud DevOps Engineer, Cloud Security Engineer, Cloud Network Engineer, Google Workplace Administrator, Machine Learning Engineer
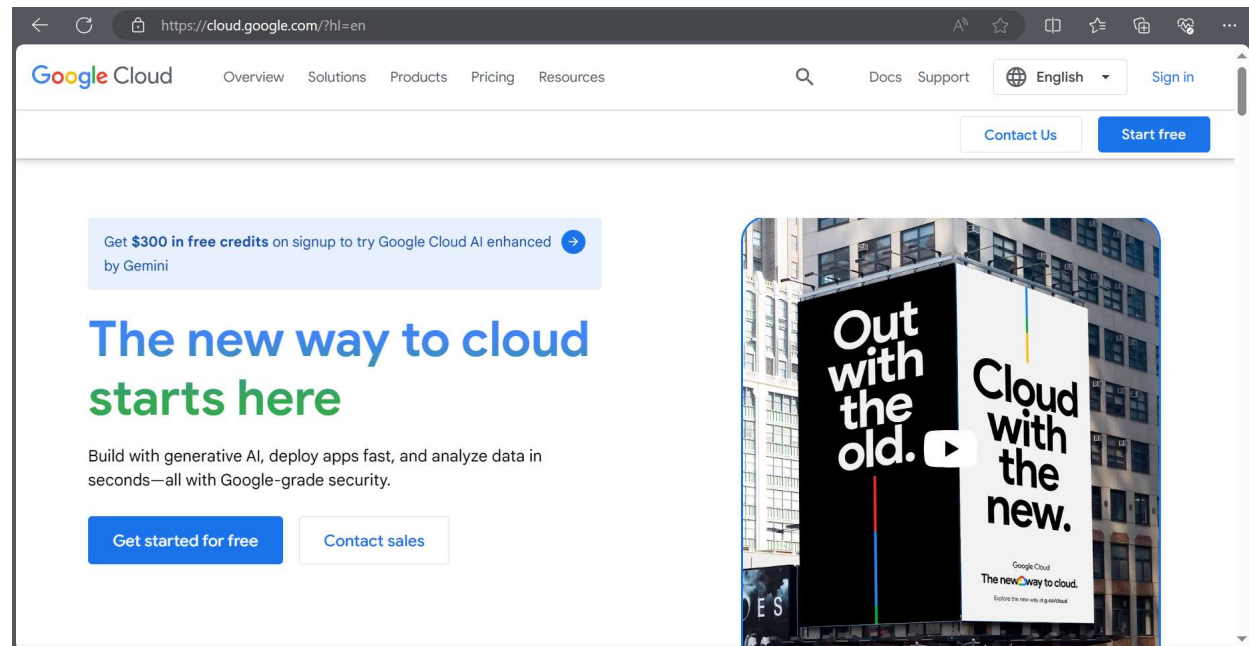
More at cloud.google.com

ACTIVITY

Explore GCP

Explore GCP

1. Navigate to cloud.google.com
2. Explore the website
3. Search for and learn more about products & services

WAREHOUSE

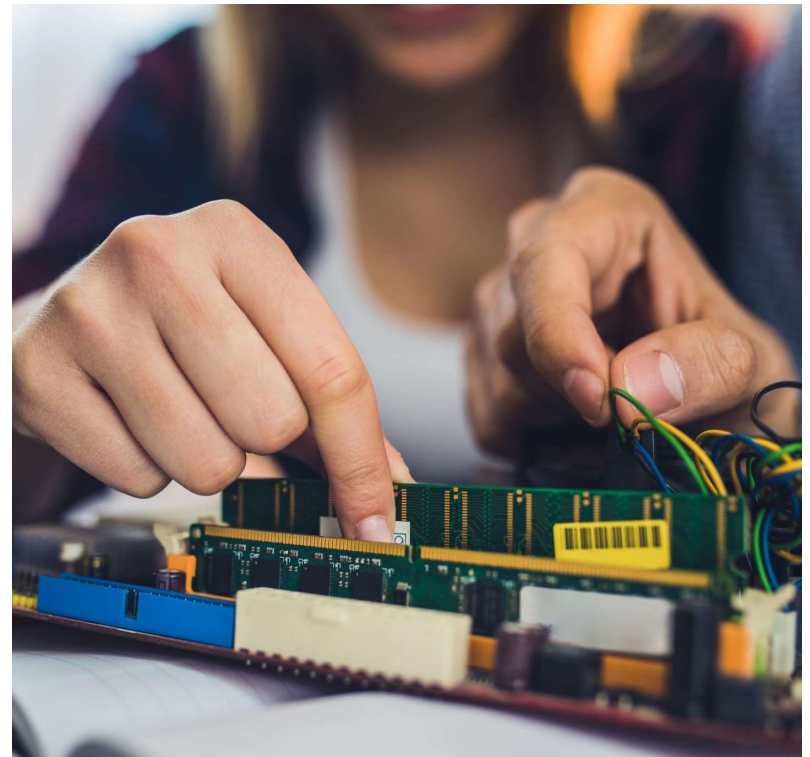# Warehouse Activity

- 1:30-3:00pm
- Desktop & laptop sorting and parting
  - Reuse & Troubleshooting

BREAK

5 minutes