System analysis

LECURE 1

Introduction to system analysis and design

system Planning phase:

"If you don't know where you are going, it doesn't matter which way you go" Lewis Caro

لو مش عارف اي الهدف من اللي الحاجه اللي انتي بتعملها يبقي مش هتعرف تعملها صح

اي سيستم لازم نبقي عارفين اي متطلبات السيستم اللي هنعمله التخطيط هي اهم خطوه في تطوير الانظمة

• the planning is to think about alternatives of solutions كل الحلول , which one can be cheap or implemented in effective timely manner or the more viable and effective timely manner or the more viable and achieve the good quality measure.

التخطيط اهم حاجه قبل اما ندخل في اي بيزنس لازم تبقي عارق

الRequirement

وكل الطرق والحلول وتختار افضل حل اللي هينتج سيستم باعلي جوده وفي نفس الوقت باقل سعر اوفي وقت قليل

IT vs COVID 19

IT now is like a source of life like water and air .
• Digital transformation is not now for entertainment.
• Everything needed to be digitized, everything from home.
• Information technology can mean the difference between success and failure.

It(information technology):

refers to the use of computers, networks, storage, and other physical devices, infrastructure, and processes to create, process, store, secure, and exchange all forms of electronic data. IT is essential in various industries for managing and processing

information, supporting decision-making, automating processes, and improving communication

It encompasses areas مجالات تكنولوجيا المعلومات:

• Hardware: Physical devices such as computers, servers, and networking equipment.

• Software: Programs and applications that run on computers and manage tasks.

• Networks: Systems that connect different computers and devices to share data.

• Data Management: Storing, retrieving, and analyzing data to support operations. بتساعد في تخزين البيانات واسترجعها وتحليلها.

• Cybersecurity: Protecting data, networks, and systems from cyberthreats

System analysis and design

is a step by step process for developing high quality information systems

step by step ex:agilaمش لازم

في اي بيزنزس سواء هنعمله منالصفر اوهو موجود بالفعل لازم تقعد مع العميل وتفهم المشاكل اللي عايزين يحلوها
ال requirments وتحاول تفهم وتحللها وبعدين تيجي مرحلة التصميم وبعدها التنفيذ اللي هو دور الفرونت والباك

Software development life cycle (SDLC)

1-planning   2-analysis   3-design   4-implemtation and testing   5- maintanane

What vs how:

System analysis is a process of collecting and interpreting facts, identifying the problems, and decomposition of a system in to its component (asking for what).

في المرحله دي انت كسيستم انلست بتحاول تجمع وتفهم كل حاجه خاصه بالسيستم وتجمع كل المتطلبات وتحدد كل مشكله بتواجه السيستم وتفهها كويس ومش بتكتب اي كود وده كل شغلنا الترم الاول

System design Systems Design is a process of planning a new business system or replacing an existing system by defining its components or modules to satisfy the specific requirements.(asking for how)
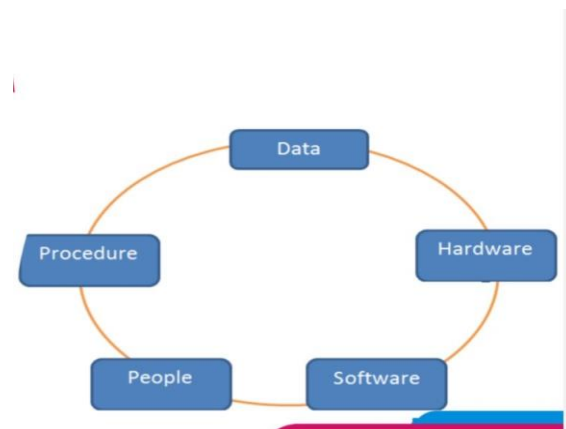
بنبدا نشوف حل كل مشكله شركه مثلا فيها موظفين وبيسجلوا دخول علي السيستم كل يوم هنبدا نصمم شاشه اللوجين ونكتب الrequirmentالكود علشان نحقق كل

 ASystem analyst : is a vauled member of the IT department team who helps plan, develop, and maintain information systems.

- Analysts must be excellent communicators with strong analytical and critical thinking   skills

هو اللي بيقعد مع العميل وبيفهم هو عاوز اي بالظبط علشان كده لازه ييقي عنده مهارات التحليل النقدي وعنه مهارات التواصل كمان وبيفهمها وهي طايرة

Information system component

• **Information systems (IS**) consist of several components that work together to collect, process, store, and disseminate information. These components are essential for the effective functioning of an IS and include both technical and human elements. The key components of an is are:

- **Hardware** • The physical devices used in the system, such as computers, servers, storage devices, and networking equipment.

- Software • The programs and applications that run on the hardware and direct its operation. can be divided into:

  1- System software: Operating systems like Windows, Linux, and macOS that manage hardware resources.

  2- Application software: Programs that perform specific tasks for users, such as word processor, database management systems, web browsers

- Data The raw facts and figures that are processed into meaningful information. Data can be stored in databases and manipulated by software to produce reports, analytics, or other insights critical for decsitoin making

- People • The users who interact with the information system. Ex (end users –it professional)

- Processes The procedures and rules that govern how data is collected, processed, and distributed.

السستم عباره عن الناس وقاعده البيانات اللي فيه بيانتهم وكمان العمليات والاجرارات اللي بيعملوها عن طريق السوفت وير والهارد وير علشان ينفذوا تاسك معين

*Business today is a popular name for business-related platforms, often providing news, analysis, and publications or economy, finance, industries, insights on various aspects of the markets, and technology.

It covers topics بيعبر عن اخبار البيزنس واي اخر اخبار البيزنس حاليا واخر تكنولوجيا نزلت علشان تساعدني في البيزنس اللي بعمله مثلا

- Business news: Updates on companies, industries, and markets.

- *Economic insights*: Analysis of global and local economic trends.

- *Leadership and entrepreneurship*: Stories and interviews with business leaders and entrepreneurs

- *Technology and innovation*: The latest advancements in technology that impact busniss

- *Stock market updates*: News on market trends and investment opportunities

The biggest two internet scoter in terms of revenue, user engagement, and economic impact, are:

1. E-Commerce refers to buying and selling goods or services online. This sector has grown exponentially due to the widespread use of the internet

التجاره الالكترونية تقدر تشتري من اي مكان اي حاجه بالموبايل

2- Digital advertising includes all online marketing efforts, from display ads,

social media ads, and search engine marketing (SEM), to video ads .

الدعايه والاعلانات علي السوشيال ميديا مثلا من اهم الحاجات اللي بتساعد في نجاح اي بيزنس

3- Future Trends: The growing use of *AI for targeted ads*, the rise of programmatic advertising, increasing importance of video content, and privacy changes (like the end of third-party cookies) are shaping the future of

Modeling Business Operations

(A business profile) is an overview of a company's mission, functions, organization

ملخص عن مهام ووظايف الشركه وال functions

(business process) a specific sets of transactions, events, and results that can be described and documented

Business process modeling notation (BPMN)

includes standard shapes and symbols to represent events, processes, workflows

زي ال flowchart بس بيعبر عن العمليات والاحداث اللي بتم داخل ال SYSTEM

Types of business information systems

1-ERP(Enterprise Resource Planning System):

Integrate all aspects of a business's operations into one comprehensive system, including finance, HR, supply chain, and production.

دمج جميع جوانب عمليات الأعمال في نظام شامل واحد، بما في ذلك التمويل والموارد البشرية وسلسلة التوريد والإنتاج.

2- TPS (Transaction Processing System) Manage day-to-day transactions, such as order processing, payroll, and inventory control.

إدارة المعاملات اليومية، مثل معالجة الطلبات، وكشوف المرتبات،مراقبة المخزون

3- Decision Support Systems (DSS):

• Help in making complex decisions by analyzing large amounts of data an

offering recommendations or insights.

المساعدة في اتخاذ القرارات المعقدة من خلال تحليل كميات كبيرة من البيانات وتقديم التوصيات أو الأفكار.

4- Management Information Systems (MIS): • Provide managers with reports and summaries of data to help in decision-making. They typically focus on operational efficiency.

تزويد المديرين بالتقارير وملخصات البيانات للمساعدة في اتخاذ القرار. وهم يركزون عادة على الكفاءة التشغيلية

5-Customer Relationship Management (CRM) Systems: • Focus on managing interactions with customers

Supporting organization with information

الاشخاص والادوار الموجوده في اي منظمه

Top managers: Top managers develop long-range plans, called strategic plans, which define the company's overall mission and goals

Middle managers provide direction, necessary resources, and performance feedback to supervisors and team leaders.

Supervisors, often called team leaders, oversee operational employees and carry out day-to-day functions.

Operational employees include users who rely on transaction processing systems.

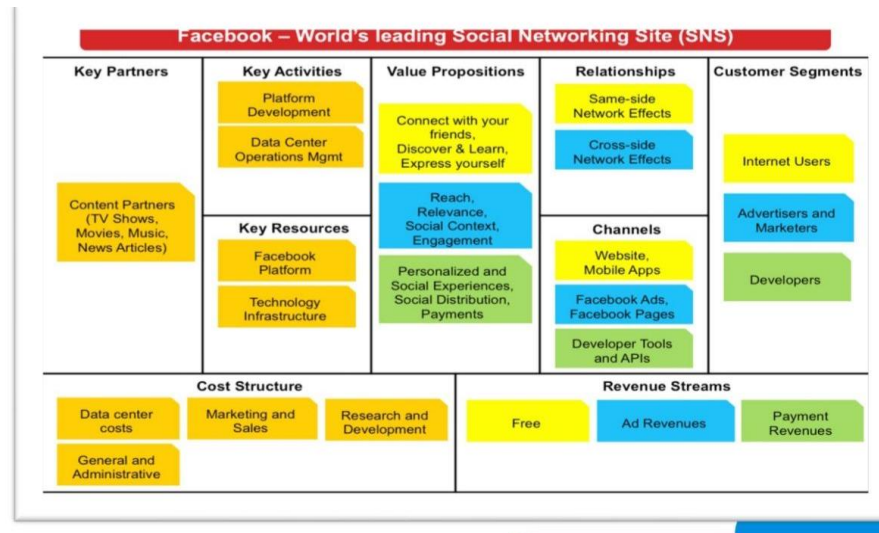اهم اتنين من غيرهم الشركه تقع top managers and operational employees

*Business functions(it-hr- accounting – production- sales-marketing)

System development tools

1-Modeling produces a graphical

representation of a concept or process that systems developers can analyze, test, and modify.

ex: (A bussiess model) describes the information that a system must provide and the value that provided to the customers in 9 blocks to show a brief information and viable to know

ال bussiness model هو نوع من ال modeling اللي بيعرف عن السيتم اللي انت عمله فيث تسع بلوكات باختصار

2-Prototyping tests system concepts and provides an opportunity to examine input, output, and user interfaces before final are made .

زي نسخه تجربيبه بيديها للعميل ويخد feed back ويعدل ويطور في السيستم علي حسب ال feedback

- A prototype is an early working version of an information system.

- prototyping speeds up the development process significantly.

3- CASE tools(computer aided system engnerring)

Is a technique that uses powerful software, called CASE tool, to help systems analysts develop and maintain information systems.

دي tools بتسهل علي الديفلوبر شغله في تطوير الsystems

CASE tools provide an overall framework for systems development and support a wide variety of design methodologies.

EX: VISUAL Paradigm, Microsoft Visio.

اللهم اني اسالك علما نافعا ورزقا طيبا وعملا متقبلا

اللهم اني اسالك علما نافعا ورزقا طيبا وعملا متقبلا