**Topic 7.** Information Systems: The SDLC (planning, analysis, design, implementation, maintenance phases). System Security.

1)Definition of Information Systems. Vertical Market Software. Horizontal Market Software.

2) Transaction Processing Systems. Online Transaction Processing. Management Information Systems.

3) Decision Support Systems. Limitations of Decision Support Systems. Expert Systems. **Fuzzy Logic**(Нечеткая логика).

4) **Ecommerce**(электронная торговля). B2C, C2C, B2B, B2G. Ecommerce Application. Online Shopping **Cart(тележка)**. Online Payments.

5) Supply Chain Management. Customer Relationship Management. SDLC: General Overview (planning, analysis, design, **implementation(реализация)**, **maintenance(обслуживание)** phases).

6) System Security.

1)  
**Information system** is a system designed for storing, searching and processing information. **A vertical markets** are where businesses meet the needs of certain people. These are markets that are focused on a specific industry.

**Horizontal markets** are markets that focus on a wide range of customers and products that are distributed across industries.

2)

**A transaction process system (TPS)** is an information processing system for business transactions **involving(включая/с участием)** the collection, modification and **retrieval(поиск)** of all transaction data. Characteristics of a TPS include **performance(производительностьe),** reliability and **consistency(согласованность/последовательность).**

**OLTP or Online Transaction Processing** is a type of data processing that consists of executing a number of transactions **occurring concurrently(происходящие одновременно)**—online banking, shopping, **order entry(ввод заказов),** or sending text messages, for example.

**Information management systems** are tools used to support processes, operations, **intelligence(аналитика),** and IT. **MIS** tools move data and manage information. They are the core of the information management discipline.

3)

**A decision support system(DSS)** is a computer automatic system that helps people who make decisions in difficult conditions to analyze subject activities.

There are different Limitations of Decision Support Systems. Such as:

\*) Difficulty in **Quantifying(количественная оценка)** all the Data

\*) **Unaware of Assumptions(неосведомленность о предположениях).**

You may not be fully aware of the assumptions that a decision support system has considered when analyzing data for a specific problem.

A decision maker must realize that a computerized DSS is only a supporting tool.  
 The last word must remain with the person.

**Expert system** is a computer system/artificial intelligence that emulates the decision making ability of a human expert.

4)

**Ecommerce** is an area of ​​the digital economy that includes all financial and trading processes that occur with the help of computer networks, and the business processes associated with such transactions.

The **B2C**(**business-to-consumer**(потребитель)) market sells goods and services directly to the end consumer.

The **C2C (consumer-to-consumer)** A feature of the C2C segment is the participation of third parties - the owners of trading platforms - sites where the seller can display the goods, and the buyer can **purchase(приобрести).**

The **B2B(**business to business**)**. This is a commercial activity in which other companies and **entrepreneurs(предприниматели)** are customers.

**The B2G**(business to goverment) is the sale of goods and services to government agencies and **institutions(учреждения).**

5)

**Supply chain management** **is the handling of the entire(обслуживание/обработка всего)** production flow of a good or service — starting from the raw components all the way to delivering the final product to the consumer. A company creates a network of suppliers (“links” in the chain) that move the product along from the suppliers of raw materials to those organizations that deal directly with users.

**Customer relationship management (CRM)** is a technology for managing all your company's relationships and interactions with customers and potential customers. The goal is simple: Improve business relationships to grow your business.

**SDLC (System/Software Development Life Cycle) it consists of several parts:**

**\*)planning:** At this stage, you are looking for the answer to the following question: "What do you want to do?"

**\*)analysis:** At this stage of the SDLC, you need to get feedback and support from **relevant(соответствующий)** internal and external **stakeholders(заинтересованные стороны).**

**It** answers the question "What problems need to be solved?"

\*)**design:** answers the following question: “How will we achieve our goals?” **In other words(иначе говоря**), you need to understand what you are optimizing and design **accordingly(соответствующе).**

**\*)** **implementation(реализация)** **involves**(**предполагает)** developing the product, testing it, and deploying it.

\*) **maintenance:** during maintenance, changes appear in the program in order to correct defects and **shortcomings(недоработки)** found during use, as well as to add a new function in order to improve ease of use (usability) and **applicability(применимость)** of the software.

6)

***System Security.***

***A data breach*** is an incident in which personal data is viewed, accessed, or retrieved without authorization.  
It can be triggered by:

-)***malware(Вредоносное ПО)* is a software that gathers(собирает) data and forwards it to hackers.**  
**-)human factors**  
***-)system glitches(системные глюки)* are poorly configured(плохо настроенные) servers, as well as networks with poor protection, which can be the cause of data breaches.   
Due to(из-за) a glitch in the system, customer information may be available to many unauthorized people.**

***There are no completely secure systems, but several measures can protect information systems from threats(угрозы).***

***-) Deterrents (средства сдерживания)***

It limits access to critical servers.  
Common ***deterrents*** include security features such as multi-level authentication, password protection, and biometric identification.

***-) Preventive countermeasures  
(превентивный(предохранительный))***

For example Firewall. It’s an element of a computer network that controls and filters what is happening through the traffic flow in accordance with specified conditions.

***-)Corrective procedures***

Corrective procedures reduce the effect of an attack.   
For example it is **data backups.**

**-) *Detection activities***

***Detection activities*** recognize attacks and trigger corrective procedures. For example, antivirus software detects viruses entering a system and then tries to ***remove(delete)*** them.