

Let's repeat

The final stage of the system's life cycle is to evaluate its impact and effectiveness.

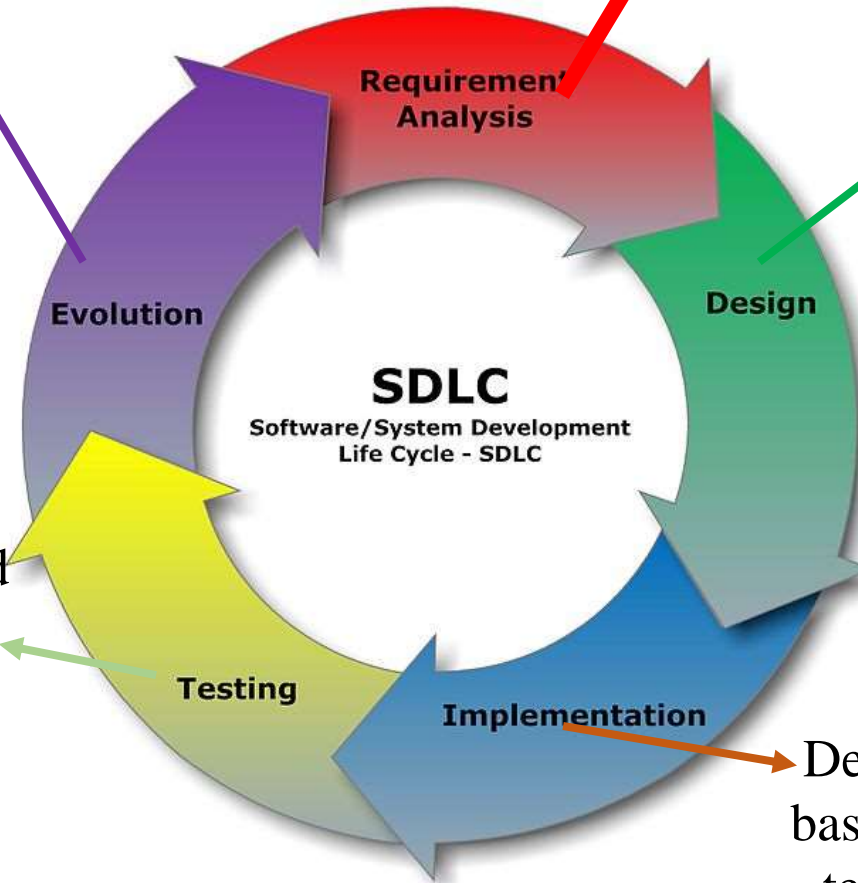
Evaluation takes place after the system has been running and in use for a while

To ensure that the project meets the requirements set, testing is carried out. At this stage, it is necessary that the program is used as it should be used in real life. When major errors are corrected, the software can be implemented.

analyzes the task, breaking it into smaller ones; defines input and output data; collects requirements, talking with all stakeholders and technical capabilities; creates a proposal (specification) to customers (other possible answers)

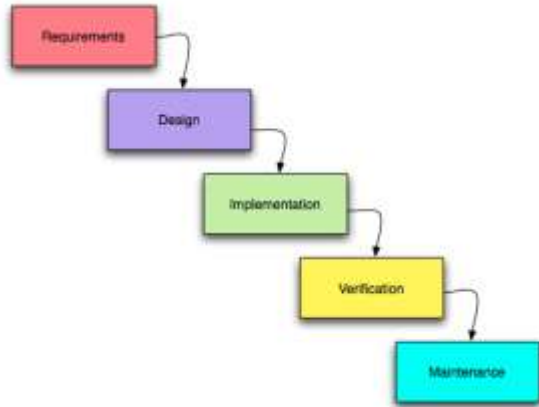
At this stage, the program developer analyzes whether the software can be ready to meet all the requirements of the end user. He also checks that the project is financially, practically and technologically feasible for the client. After that, the best approach to design is chosen for the product.

Development team does the actual coding based on designed software and writes unit tests for each component to test the new codes written by them.

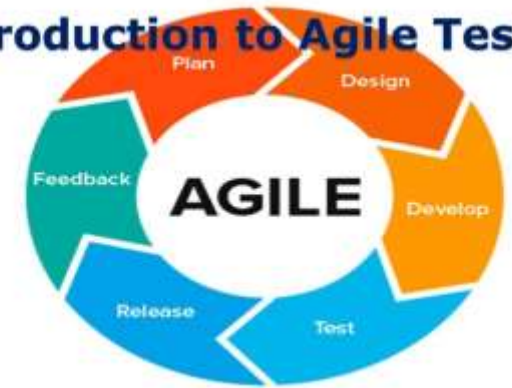


System Development Life Cycle Stages

System life cycle models:



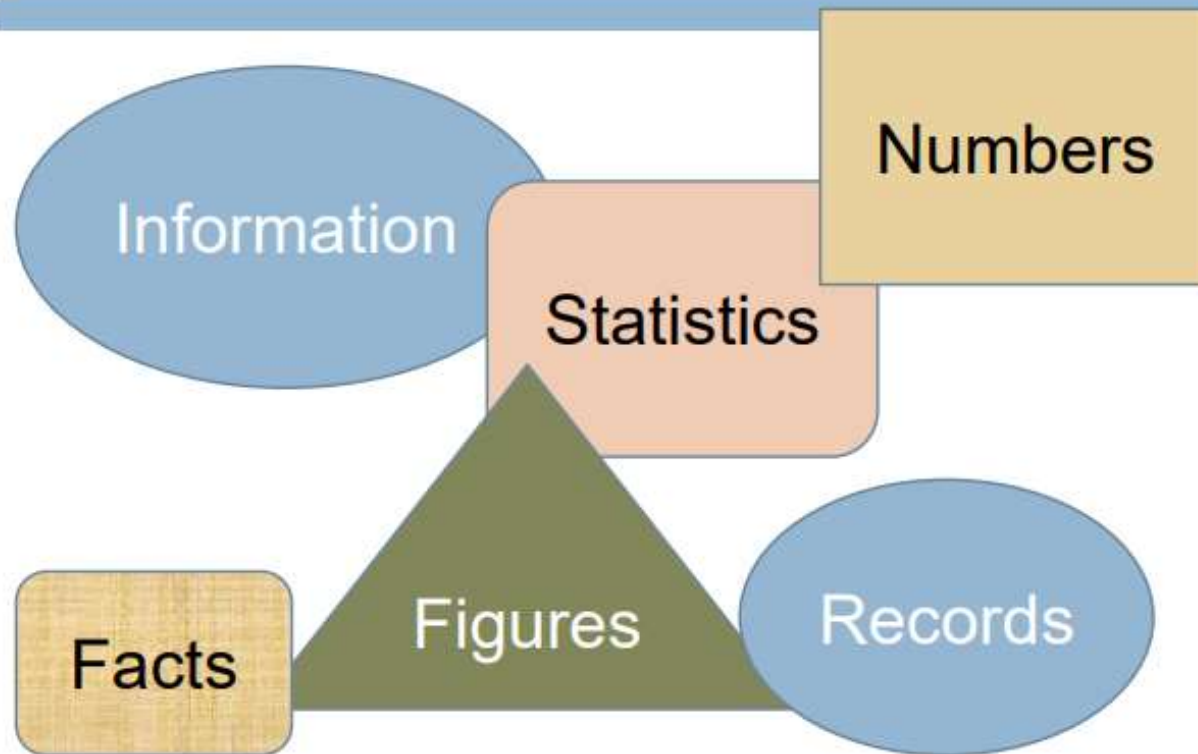
Introduction to Agile Testing



Let's imagine ...
that you are starting the development of
an online store website
for a grocery store near your home

From what will you start your work??

What is DATA?



What is Data collection?



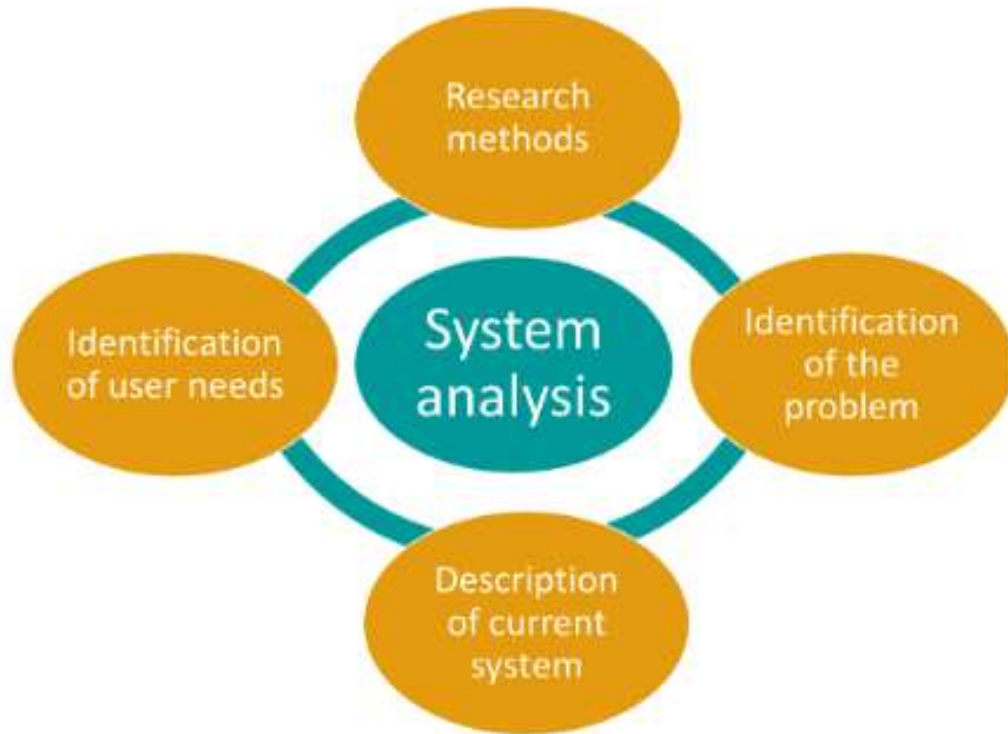
Data collection is a systematic process of collecting detail information about desire objective from selected sample under controlled settings.

Data collection methods

Learning objective

11.2.1.4 11.2.1.3 describe data collection methods

System analysis - the study of a complex process in order to improve its efficiency.



- **Research methodology** is the specific procedures or techniques used to identify, select, process, and analyze information about a topic.
- **A problem** is a situation that is unsatisfactory and causes difficulties for people.
- **Description of the current system** is an explanation of the functionality, algorithms of its work, objects that interact with it.
- **Identifying user needs** are aspects of the current system that require improvements or new features.

Let's discuss data collection methods and fill in the table

Different ways of collecting data	Advantages	Disadvantages
Survey or Questionnaire		
Observation		
Interview		
Expert review		

Interview

Interviews are a one-on-one discussion between a stakeholder and the system analyst. It's used to obtain information from person through oral responses.

Interviewing is useful because...

- facts can be gathered directly from the people who have direct experience of the present system;
- full and detailed answers can be obtained by pursuing particular lines of questioning.

Advantages

- Ask experts;
- Collection of primary information;
- Can easily add extra questions.

Disadvantages

- Time-consuming: setting up, interviewing, transcribing, analysing, feedback, reporting;
- Different interviewers may understand and transcribe interviews in different ways.
- in what situation can I use

Questionnaires

Questionnaire is an instrument for collecting data, which almost always involves asking a given subject to respond to a set of oral or written questions.

Questionnaires enable the same set of questions to be asked to many people. A carefully designed questionnaire can be a very quick and cheap way to obtain specific answers to specific questions from a large number of people.

Advantages

- Questionnaires are inexpensive;
- Quick way to get results;
- Respondent anonymity;
- You gather information from a large audience.

Disadvantages

- Dishonest answers;
- Unanswered questions;
- Differences in understanding and interpretation;
- Lack of personalization.

Observation

- Observation of the current practice enables current methods of working to be examined and necessary exceptions to the normal pattern of working to be noted. It is both a physical and a mental activity. Observation is purposive and not casual.
- Examples: A scientist looking at a chemical reaction in an experiment; A zoologist watching lions hunting; A fan watching a baseball game.
- Immediate detection of problems;
- Easy to complete, saves time;
- Can be used in natural or experimental settings.

• **Disadvantages**

Advantages

- Some of the occurrences may not be open to observation;
- Not all occurrences lend themselves to observational study;
- Lack of reliability;
- Slow investigation;
- Expensive.
- Reliable and objective;
- Natural setting;
- No need of equipment or tool;
- Useful for individuals as well as groups;

Examination of documentation

Examination of the existing paperwork, documentation, records and procedure manuals can be used to identify the data that is used in the current system, the information that is produced by the current system and the procedures that are carried out.

Physical Evidence allows you to get information about past events, the observation of which is no longer possible. It can be articles, reports, user guides

Examples: Flyers, posters, agendas, handbooks, and training materials, personal documents

Advantages

- efficient and effective way of gathering data because documents are manageable and practical resources;
- documents are stable, meaning that they can be read and reviewed multiple times.

Disadvantages

- require some investigative skills;
- small amount of useful data;
- too much extra information.

Different ways of collecting data

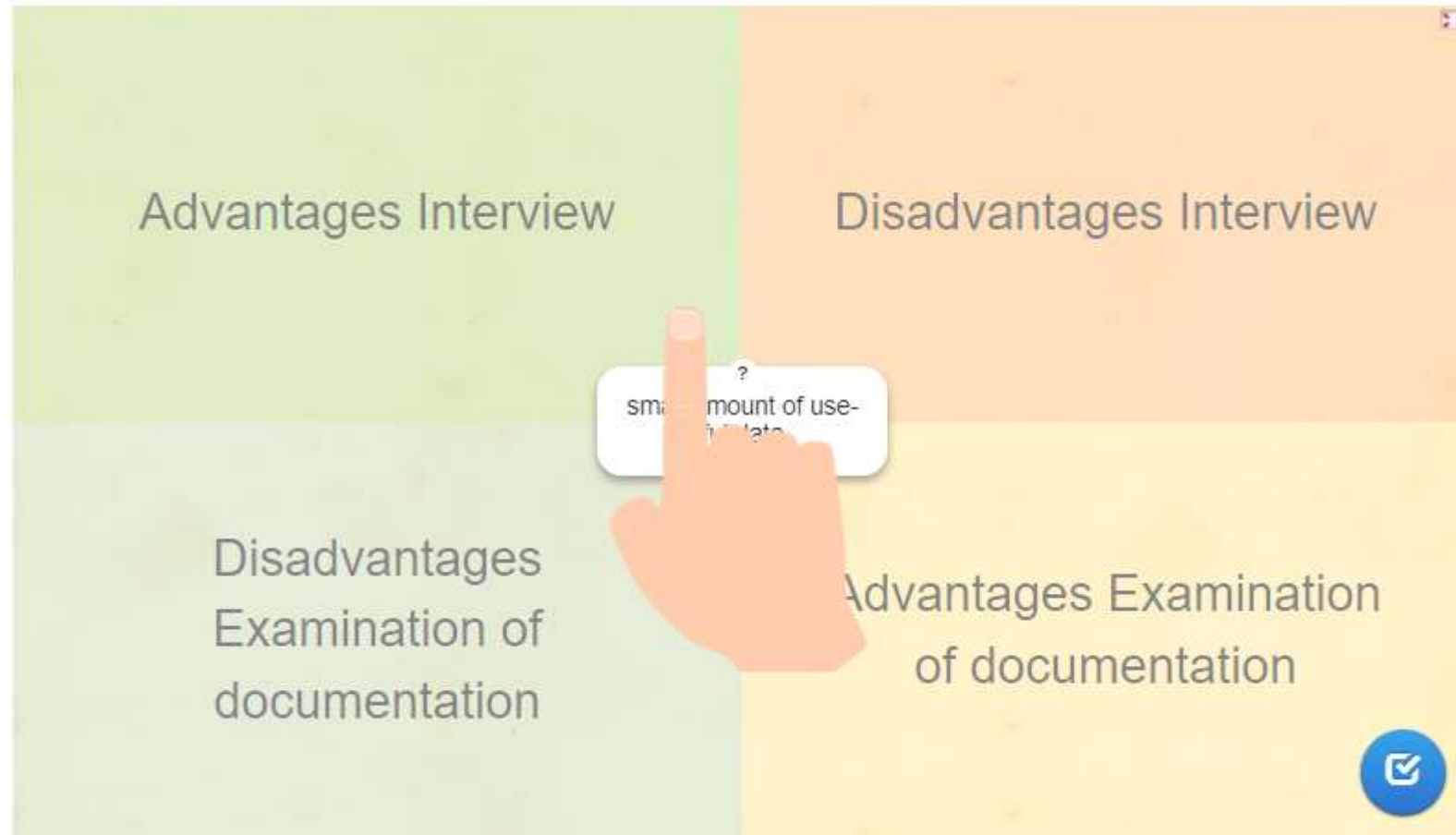
- **Questionnaires** also known as surveys include a set of questions relevant to the system, types of question can be closed, open or scale-based.
- **Observation** involves watching someone go about their day-to-day work, often commonly referred to as job-shadowing.
- **Interviews** are a one-on-one discussion between a stakeholder and the system analyst.
- **Examination** of the existing paperwork, documentation, records and procedure manuals can be used to identify the data that is used in the current system, the information that is produced by the current system and the procedures that are carried out.
- **Expert review** certain sample groups are asked their opinion about a certain subject or theory.

11.2.1.4 compare different data analysis techniques

Different ways of collecting data	Advantages	Disadvantages
Survey or Questionnaire	<p>Can gather a large range of viewpoints. Large amount of (potentially) very rich details. Can be done globally across many company locations.</p>	<p>Questionnaires are hard to create (must be done by an expert). People may not complete them. Details retrieved can be highly opinion based and not objective.</p>
Registration (observation);	<p>See details missed out in the problem definition. Verify any other information found. You get an overview of the overall work process at the company and can develop the system as such</p>	<p>An expensive method Information is very limited Unforeseen factors may interfere with the observational task. May require training Observer's presence may create artificial situation Potential to overlook meaningful aspects Difficult to analyze</p>
Interview	<p>Large amounts of detail can be gathered. The person will be a stakeholder so will be co-operative in answering the questions well. Follow-up questions can be asked unlike other methods of analysis.</p>	<p>Will depend upon the content of the interview - poorly constructed interview will produce poor responses People may over-exaggerate the problems due to their opinion. May take a while if you interview many people.</p>
Expert review	<ul style="list-style-type: none"> • are useful when exploring cultural values and health beliefs • can be used to examine how and why people think in a particular way and how is influences their beliefs and values • can be used to explore complex issues • can be used to develop hypothesis for further research • do not require participants to be literate. 	<ul style="list-style-type: none"> • lack of privacy/anonymity • having to carefully balance the group to ensure they are culturally and gender appropriate (i.e. gender may be an issue) • potential for the risk of 'group think' (not allowing for other attitudes, beliefs etc.) • potential for group to be dominated by one or two people • group leader needs to be skilled at conducting focus groups, dealing with conflict, drawing out passive participants and creating a relaxed, welcoming environment • are time consuming to conduct and can be difficult and time consuming to analyse.⁶

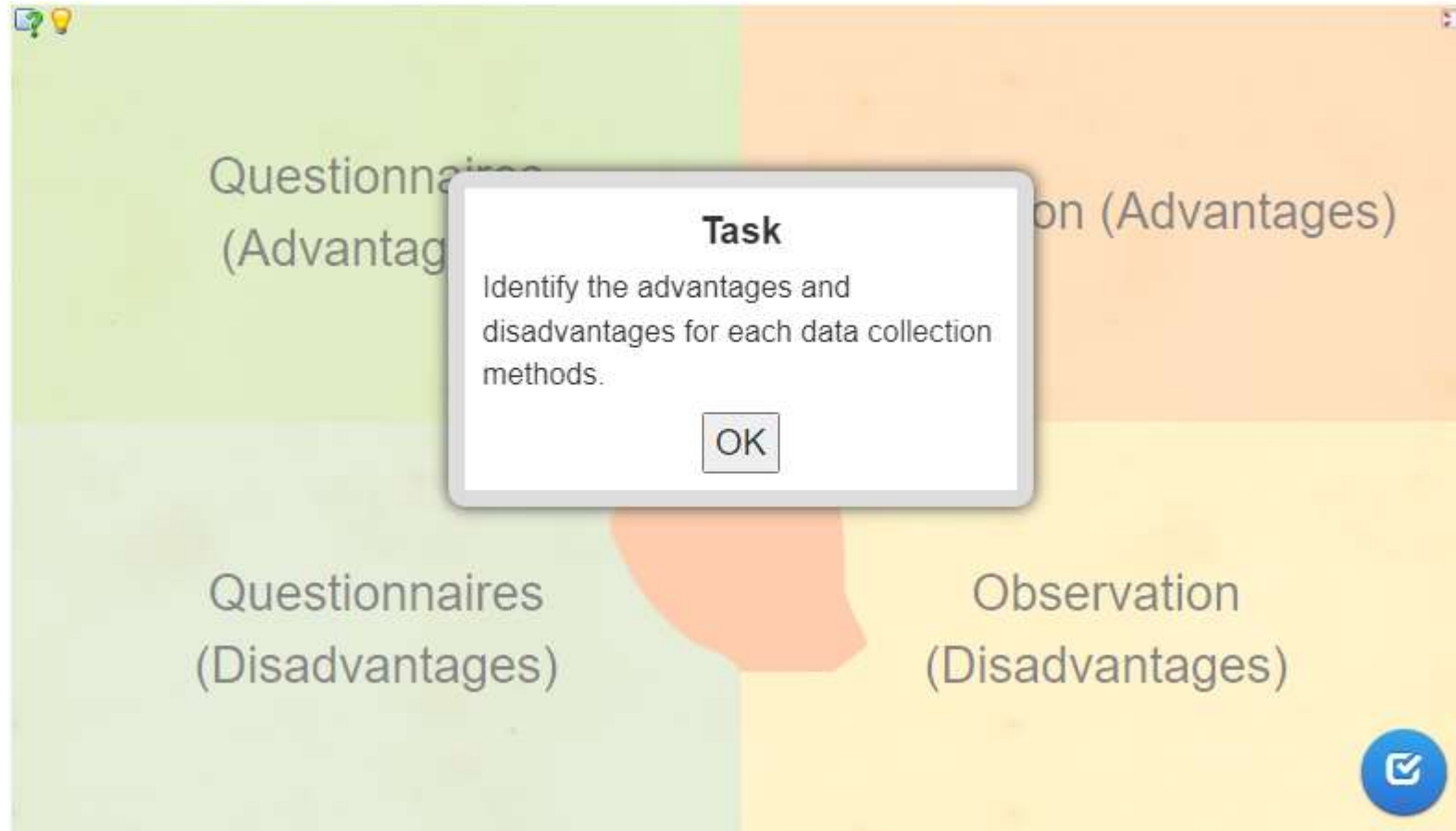
Activity

https://www.bzfar.org/publ/sdlc/stages_of_sdlc/data_collection_methods/47-1-0-56



Activity

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The screenshot shows a software interface with a task dialog box. The background is divided into four colored quadrants: top-left (green), top-right (orange), bottom-left (light green), and bottom-right (yellow). The text in the quadrants is: top-left "Questionnaires (Advantages)", top-right "Questionnaires (Advantages)", bottom-left "Questionnaires (Disadvantages)", and bottom-right "Observation (Disadvantages)". A central dialog box titled "Task" contains the text "Identify the advantages and disadvantages for each data collection methods." and an "OK" button. A blue circular icon with a white checkmark is in the bottom right corner.

Task

Identify the advantages and disadvantages for each data collection methods.

OK

Activity

https://www.bzfar.org/publ/sdlc/stages_of_sdlc/data_collection_methods/47-1-0-56

The screenshot shows a yellow background with four pinned notes. A central dialog box titled "Task" is overlaid on the notes. The dialog box contains the following text:

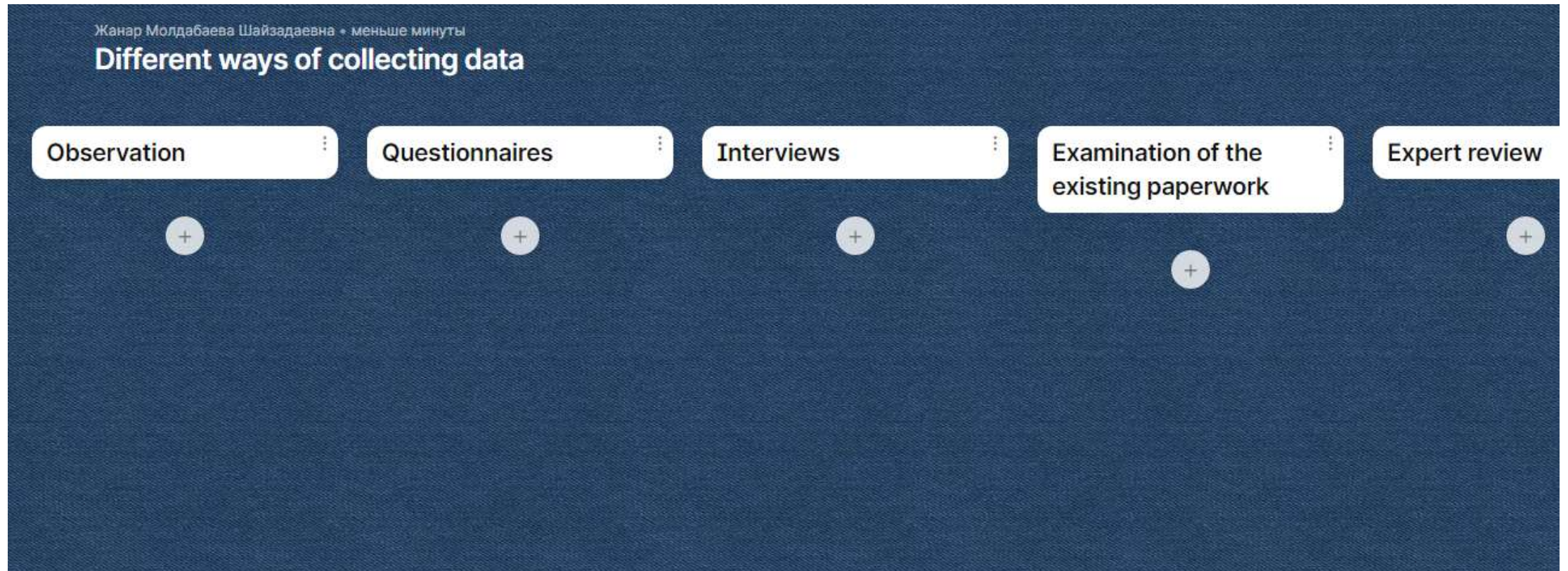
Task
You are given description of the various data collection techniques. Write the method under description.
OK

The notes on the background are:

- Top-left: This method involves a one to one question and answer session between the analyst and the employee/customer.
- Top-middle: This method involves watching personnel using
- Top-right: This method allows the analyst to see how the user files are look at operating instructions training manual check the accounts, etc.
- Bottom-left: This method involves distributing questionnaires to the workforce, clients or users to find out their views of the existing system and how some of the key tasks are carried out.

A blue circular icon with a white checkmark is located in the bottom right corner of the interface.

Give an example in which situation each of the proposed methods can be used



Pair work

- Choose which of the methods you would use to develop a website for the selected company
 - beauty salon,
 - oil and gas company,
 - gas station,
 - grocery store,
 - hospital,
 - school
- make a list of questions that you would ask the president of the company

Mini-project

- Write down Description of the organization and problem statement.
- Interview about current system and future system
- Write down alternative solutions to solve the problem in your own project
- Compare alternative solutions.
- Draw data flow diagram for the current system.
- Draw flowchart for the current system.
- Write down system requirements (software and hardware requirements)