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Types of documentation in system analysis and design

What are the types of documentation in system design.

System documentation is a vital and important part of software development and software engineering. In general, it consists of detailed language, illustrations and photos that help different people understand the software, and is essential reference material. Many developers deal with the challenges in creating software documentation which is amply useful and easy to read. The computer software documentation is widely defined. It can be a user manual that consumers read to understand the requirements and operations of a software system so you can download it, install it and use it. It can also be more technical, describing the capacity and characteristics of the system for a technical user, like someone in IT or a system administrator. Technical documentation can include coding for software and a record of how it was designed, such as the architecture of creation and goals to design software and each of its aspects. Generally, the documentation is designed to inform the reader on the software and describe how it was created, what is intended to do and how it works. It should also be easy to find or log in, and should have the ability to be updated as the changes are made to the software over time. While details must be included for documentation to be properly complete and effective, the goal is that all computer software documentation is written in language which is quite easily understandable. This can be a challenge when using technical language. Overall, the documentation can be divided into a couple of different categories: process documentation and product documentation. Process documentation is designed for those working in the field of Internet technology, and uses industry-specific jargon on the engineering process and software development. The product documentation describes the product and how it should be used. However, these categories are further divided. The product documentation includes both the documentation of the system, which is technical, both user documentation, which should not be too technical. This because it is designed for the average user of the computer, not someone in software engineering or in the IT field. There is a difference between system documentation and user documentation. In the world of information systems, the system documentation is much more technical. It is oriented towards an advanced or specialized reader, as a system administrator or a professional IT. The system documentation includes things like the source code, the test documentation and the API documentation (documentation or programmatic instructions). Describes the requirements and capacities of the software and inform the reader on that software can and can't do à in other words, its functionality. This is important for IT people to understand when they are, for example, assessing whether a software program is good for their entire company for buying and placing the placing computer for a wide use. They must understand the requirements of space and calculation and the intended use of the product, so that they can assess whether it is something that the department can install or not and that everyone will eventually be able to use. On the other hand, the user documentation is designed for the average user, also called "the end user". User documentation is a descriptive language designed to speak to the average user of software or system in contrast to an IT professional or other technical professionals. It is designed to explain to the average person how to correctly install and use the software or service. User documentation may also include best practices to achieve optimal results, describe features and benefits of such features, and may include a description of several tips and tricks to maximize software performance, as well as how to customize the software so that it works best for each user and for the expected task. Software documentation may include an explanation of the purpose of the different settings and how to manipulate them, menus and other customization options within the software once installed. User documentation must be written in a language that is understandable to the average person, while the system documentation is written from a much more technical point of view. This can be a challenge for a professional technician. Understanding the difference between writing for a final user and writing for another IT professional can be difficult. User documentation may include anything, from how to download and install software to how to use every aspect of the software or system. This includes user manuals and FAQ sections, designed to allow everyday consumers to read, use and understand. It may include instructions such as video tutorials, flash cards, web pages to visit to ask for help or help text on screen along with step-by-step illustrations or screenshots on how to perform all the different software functions. Finally, it should also include the troubleshooting instructions that occur during the use of the software, such as how to handle different errors and how to get help in case of undocumented problems or problems that are unable to solve. System documentation types include a document on requirements, source code document, quality assurance documentation, software architecture documentation, solution instructions, and advanced user guides. User documentation may also include system requirements so that users understand whether their system will be able to manage the software orReliable and understandable documentation is an important part of software engineering. Also on small projects, documentation should not be overlooked, as it helps with maintenance and updates over time. Small projects can become big before you notice, and documentation helpsall are on the same page. Documentation improves quality and records the key requirements and decisions that have entered the product creation. This documentation is used to inform, describe and record the software knowledge that can be communicated to others, whether they are in a technical work such as a system administrator or are simply consumers who want to install software on their computer or mobile device. As an engineer or developer, you can work on multiple applications simultaneously, so documenting everything for each specific application becomes even more important. Complete and educational documentation is almost as important as creating the software itself. Yes, it can be boring or complicated. The explanations of software requirements can become several long and extremely technical and extremely heavy pages, making them bulky to read and difficult to use rather than be useful and explanatory. Finding the balance between transmitting the necessary information both for system documentation and for user documentation without it being longer and more technical than necessary for the reader to understand can be a challenge for any software engineer. In fact, it is part of the design and engineering software ability to be able to create an appropriate process, useful and product documentation. Users must be able to understand how the product was designed, how the environment was like where it was created, what is intended to do, what can and cannot be reasonably expected to perform, how to solve problems and correct errors that can arise through normal use and how to get help if nothing else is working. Software engineering documentation is the term umbrella that includes all written documents and materials that treat the development and use of a software product. All software development products, created by a small team or a large company, require relative documentation. And different types of documents are created through the entire life cycle of software development (SDLC.) The documentation exists to explain the functionality of the product, to unify the project information and to allow to discuss all the significant issues that arise between stakeholders and developers. In addition to this, documentation errors can establish gaps between the visions of stakeholders and engineers and, consequently, a proposed solution will not meet the expectations of stakeholders. As a result, managers should pay close attention to the quality of documentation. Agile and cascade approaches The types of documentation that the team produces and its scope depend on the chosen software development approach. There are two main: agile and waterfall. Each is unique in terms ofAccompanying. The fall is a linear method with distinct objectives for each development phase. The teams that use the waterfall spend a reasonable time in product planning in the early stages of the project. Create a vast overview of the main objectives and goals objectives plan how the process of work will be. Waterfall teams strive to create detailed documentation before any design phase begins. A careful planning works well for projects with few or no changes in progress, as it allows a precise forecast of budget and time. However, cascading planning has proved ineffective for long-term development, as it does not take into account the possible changes and contingencies in movement. According to the 9th Global Project Management Survey of SMEs, the Agile approach is used by 71% of organisations for their projects. The Agile approach is based on teamwork, close collaboration with customers and stakeholders, flexibility and ability to react quickly to changes. The basic elements of agile development are iterations, each of which includes planning, analysis, design, development and testing. The agile method does not require complete documentation at the beginning. Managers do not need to plan much in advance, as things can change as the project evolves. This allows just-in-time planning. As one of the values of the Agile Manifesto suggests, by presenting "the working software to complete documentation", the idea is to produce documentation with essential information to move forward, when it makes more sense. Today, agile is the most widespread practice in software development, so we will focus on documentation practices related to this method. Types of documentation The main objective of effective documentation is to ensure that the developers and stakeholders move in the same direction to achieve the goals of the project. To get them, there are many types of documentation. Joining the following classifications. All software documentation can be divided into two main categories: Product documentationProcess documentationProduct documentation describes the product in development and provides instructions on how to use it for different activities. Product documentation can be divided into:System documentation and User documentationThe system documentation represents documents describing the system itself and its parts Includes documents on requirements, design decisions, architecture descriptions, program source code and help guides. User documentation includes manuals prepared mainly for end users of the product and system administrators. User documentation includes tutorials, user guides, troubleshooting manuals, installation and reference manuals. Process documentation represents all documents produced during the development and maintenance that describe the process. Common examples ofProcess are project plans, test plans, reports, standards, meeting notes or even commercial correspondence. The main difference between process and product documentation is that the first records the development process and the second describes the product in Development phase. Product: System Documentation Systems system provides an overview of the system and helps engineers and stakeholders understand the underlying technology. It usually consists of document requirements, architecture design, source code, validation documents, verification and test information, and maintenance or help guide. It is worth noting that this list is not exhaustive. So, let's take a look at the details of the main types. Requirements Document A requirement document provides information about the functionality of the system. In general, the requirements are the statements of what a system should do. Contains business rules, user stories, usage cases, etc. This document should be clear and should not be an extended and solid text wall. It should contain enough to outline the purpose of the product, its features, functionality and behavior. The best practice is to write a requirement document using a single consistent model to which all team members adhere. The form of a web page will help you keep the document concise and save the time spent to access the information. Here is an example of a product request document from a web page to understand various elements that should be included in your PRD. However, you should remember that this is not the only and only way to fill out this document. A product request document from a web page created using Atlassian Confluence, the content collaboration software Here are the main recommendations to follow: Roles and responsibilities. Launch the document with information about project participants, including a product owner, team members and stakeholders. These details will clarify the responsibilities and communicate the release goals for each of the team members. Team goals and a corporate goal. Define the most important goals in a short-term form. Background and strategic fit. Provide a brief explanation of the strategic purpose of your actions. Why are you building the product? How do your actions affect product development and align with company goals? Assumption. Create a list of technical or business assumptions that the team might have. User stories. List or link the user stories that are necessary for the project. A user story is a document written from the point of view of a person using the software product. User history is a brief description of customer actions and results they want to achieve. User interaction and design. Connect design explorations and wireframes to the page. Questions. As the team solves problems along the project progression, they inevitably have many questions that arise. A good practice is to record all these questions and track them down. Don'tI do: List the things you're not doing now, but plan to do soon. Such a list will help you organize your teamwork and priority features. Make all of this information more complete by using the following practices: Use links and anchors. They will help you make the document easier to read and research as readers will be able to The information gradually. For example, if it is possible to provide links to customer interviews and still to previous discussions or other external information relating to the project. Use diagram tools to better communicate problems to your team. People are more likely to perceive information by looking at the images that reading a wide document. Several visual models will help you perform this task and outline the requirements more effectively. You can incorporate diagrams into the requirements process using the following software diagram tools: Visio, Gliffy, Balsamiq, Axure or Smartart in Microsoft Office. Software architecture document software architecture design documents include the main architectural decisions. We do not recommend listing everything, but rather to focus on more relevant and demanding ones. An effective design and architecture document includes the following information sections: design document template. Discuss and form a consensus with stakeholders regarding what needs to be covered in the architecture design document before it was created and use a model defined to map architectural solutions. Architecture & Design Principles. Underlines the principles of architecture and design guide with which you engineer the product. For example, if you plan to structure your solution using the architecture of microservices, don't forget to specifically mention this. Description of user history. Connect user stories with associated business processes and related scenarios. You should try to avoid technical details in this section. Details of the solution. Describe the contemplated solution by listing services, modules, components and their importance. Diagramatic representation of the solution. Identify diagrams that need to be created to help you understand and communicate the principles of structure and design. Source code document A source code document is a technical section that explains how the code works. While it is not necessary, aspects that have the greatest potential to confuse should be covered. The main users of source code documents are software engineers. Source code documents may include but are not limited to the following details: HTML generation framework and other applied frameworks Type of binding design Data design with examples (for example Model-view-controller) Safety measures Other models and principles tries to maintain The simple document by brief sections for each element and supporting them with short descriptions. Quality Guarantee Documentation There are different types of test documents in Agile. We have outlined the most common: test strategy test plan specifications of the test case Test control A test strategy is a document that describes the software test approach to achieve test goals. This document includes information about the team structure and the needs of resources together with what should be priority during the test. A test strategy is usually static because the strategy is defined for A test plan usually consists of one or two pages and describes what should be tested at a given time. This document should contain:The list of features to be testedTest MethodsTimeframesRoles and responsibilities (e.g. unit tests can be performed by the QA team or engineers) A test case specification document is a set of detailed actions to verify each feature or functionality. of a product. Usually, a QA team prepares a separate document for each unit of product. The test case specifications are based on the approach outlined in the test plan. A good practice is to simplify the specification description and avoid repetition of test cases.Test checklist is a list of tests that should be run at a given time. It represents which tests have been completed and how many have failed. All items on the checklists must be defined correctly. Try grouping the test points in the checklists. This approach will help you keep track of them during your work and not lose any. If it helps testers check the app properly, you can add comments to the list items.Maintenance and Help GuideThis document should describe known system problems and their solutions. It should also represent the dependencies between the different parts of the system.Product: User documentationAs the name suggests, user documentation is created for users of products. However, their categories may also differ. Therefore, you should structure the user documentation according to the different user tasks and the different levels of their experience. Generally, user documentation addresses two broad categories:End UsersSystem AdministratorsThe documentation created for end users should explain in the shortest possible way how the software can help solve their problems. Parts of the user documentation, such as tutorials and onboarding, in many large customer-based products, are being replaced by onboarding training. However, complex systems still require documented user guides.The online form of user documentation requires technical writers to be more imaginative. The online end-user documentation should include the following sections:FAQVideo tutorialsInbuilt supportSupport portalsIn order to provide the best service to end-users, you need to continuously collect customer feedback. The wiki system is one of the most useful practices. Helps maintain existing documentation. If you use the wiki system, you will not have to export documents into presentable formats and upload them to servers. You can create your own wiki pages using a wiki markup language and HTML code. provide information about how to use the software. Usually, administrative documents concern installation and updates that help the system administrator in product maintenance. Here are the standard documents for system administrators: Functional description à ¶ describes the functionality of the product. Most of thisare produced after consultation with a user or owner. System administration guide — explains different types of system behavior in different environments and with other systems. It should also provide instructions on how to deal with malfunctioning situations. Process documentation Process documentation covers all activities surrounding product development. The value of maintaining process documentation is to make development more organized and well designed. This branch of documentation requires planning and documentation both before the project begins and during development. Here are the common types of process documentation: Plans, estimates and times. These documents are usually created before project startup and can be modified as the product evolves. Reports and metrics. Reports reflect how time and human resources were used during development. They can be generated every day, week or monthly. Check out our article on agile delivery metrics to learn more about process documents, such as speed chats, sprint burning charts and release burning charts. Working documents. These documents exist to record engineers' ideas and thoughts during project implementation. Work documents usually contain some information about the code of an engineer, sketches and ideas on how to solve technical problems. While they should not be the main source of information, keep track of them allows you to recover highly specific project details if necessary. Standard. The standard section should include all coding standards and UX to which the team adheres along the project progression. Most process documents are specific for the particular time or phase of the process. As a result, these documents quickly become obsolete and obsolete. But they must be maintained as part of development because they can become useful in implementing similar tasks or maintenance in the future. In addition, process documentation helps make the whole development more transparent and easier to manage. The main objective of the process documentation is to reduce the amount of documentation of the system. To achieve this, write the minimum documentation plan. List key contacts, release dates and your expectations with the assumptions. General practices for all types of documents There are several common practices that should be applied to all types of documents we discussed above: Just write enough documentation You should find a balance between no documentation and excessive documentation. Poor documentation causes many errors and reduces efficiency at every stage of development of a software product. The sameThere is no need to provide a documentation abundance and repeat information in different documents. Only the most necessary and relevant information must be documented. Finding the right balance also involves the analysis of the project complexity before the start of development. Documentation is a continuous process this means that documentation should be maintained It is very important as documents that are not current automatically lose their value. If the requirements change during software development, you need to make sure there is a process of updating the systematic documentation that includes the information that has changed. You can use automatic version control to manage this process more efficiently. The documentation is the collaborative effort of all team members The Agile method is based on a collaborative approach to the creation of documentation. If you want to get efficiency, interview programmers and testers about software features. Then, after writing some documentation, share with your team and get feedback. To get more information try to comment, ask questions, and encourage others to share their thoughts and ideas. Every team member can give a valuable contribution to the documents you produce. HIRE A technology writer if it is possible, it will be worth hiring an employee who will take care of your documentation. The person who generally does this job is called a technical writer. A technology writer with an engineering background can collect information from developers without requiring someone to explain in detail what is happening. It is also worth incorporating a technical writer as a team member, locate this person in the same office to establish close collaboration. He or she will be able to participate in regular meetings and discussions. Final word The Agile methodology encourages engineering teams to always focus on providing value to their customers. This fundamental principle must also be considered in the software documentation production process. Good software documentation must be provided if it is a specific document for programmers and testers or software manuals for end users. The complete documentation of the software is specific, concise and relevant. As we mentioned earlier, it is not mandatory to produce the entire set of documents described in this article. It should rather concentrate only on those documents that help directly to achieve project goals. goals.

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