SPI GROUP 3 – Reading, Understanding and Summarizing Technical Material, Including SourceCode and Documentation

means models, software (including source code and object code versions), information, design concepts, audio, video, drawings, programs, schedules, manuals, diagrams, graphs, charts, projections, specifications, estimates, records, concepts, accounts, plans, formulae, calculations, designs in any medium, methods, techniques and processes, including all copies of and extracts from them and data stored by any means.

Technical Material

---

is documenting complex, technical processes that are difficult to comprehend

Technical writing

It falls under the broad umbrella of technical communication, a sub-field of business communication.

Technical writing

Compared to most forms of writing, _____ is supposed to have a much more targeted audience

technical writing

---

such as computer science/information technology, engineering, biochemistry, medical sciences, physics, and finance greatly need technical communication.

STEM fields

Technical writing can have different goals, including, but not limited to:

- Unambiguously defining a process
- Explaining how to use a tool/machine
- Discussing the findings of a research
- Analyzing trends and forecasting something

---

the goal for any technical writing

to be as unambiguous as possible when defining a technical process or sharing the results of your findings.

---

7 Common Types of Technical Writing

1. Technical Documentation
2. Instructions for the End-User
3. Technical Writers’ Reports
4. Policies and Procedures
5. Business Plans and Proposals
6. Case Studies
7. White Papers

The use of a technical product requires clear instructions on how to use it. Since the audience of such products includes engineers, mechanics/technicians, and scientists, they must understand their technicalities, especially if they’re not used to using them. Even the smallest error can potentially send thousands of hard-earned dollars down the drain

Technical Documentation

---

is needed to communicate those instructions and ensure that the user doesn’t make a fatal error.

Technical Documentation

This is the most common type of technical writing and exists in the form of instruction manuals, maintenance checklists/guidelines, references, and engineering specifications, among others. The content for software documentation has to be as straightforward and crystal-clear as possible to ensure the end-user comprehends it. Additionally, it can also be in the form of a training video, provided that the narration or captions meet technical writing requirements

technical documentation

This form of technical writing is very closely related to the previous one, as it pretty much accomplishes the same goal – to help the end-user. The only distinctions between the two are target audiences and their intended products. Unlike traditional technical documentation, these instructions aren’t for highly complex, industrial-level machinery or equipment but day-to-day gadgets and software used by ordinary consumers and business professionals

Instructions for the End-User

The goal is to minimize tickets/requests for the customer service department, as the users will have everything they need to set up and get started with their product.

Instructions for the End-User

---

encompasses a wide range of products. Technical reports follow strict writing and formatting rules determined by the organization preparing them. In some cases, those rules are set forth by an external party in case auditing is required.

Technical Writers’ Reports/Technical report writing

Unlike most technical write-ups, these reports inform an internal audience (like a board of directors or a committee). In the case of feasibility reports, an external party, such as a potential investor, may view them.

Technical Writers’ Reports

Every company has a set of policies and pre-determined formal procedures that the employees must follow to ensure productivity, create a safe working environment, and reduce liability risks

Policies and Procedures

Typically, technical writers prepare these policies under the supervision of a compliance officer or another member of the senior management. Since they’re for employees across the company (or a specific team), they have to communicate expectations in a very straightforward way. Doing so can help avoid potential lawsuits and uphold the organization’s reputation.

Policies and Procedures

Traditionally, technical writing didn’t encompass business plans. However, due to the extensive researching, number crunching, and laser-focused targeting that it entails, experts began considering it a part of technical writing.

Business Plans and Proposals

For those with little or no experience with business writing, a _____ is a comprehensive document detailing the various strategies of a venture created for people who would be willing to invest.

business plan

A professionally-written _____ can help an aspiring entrepreneur bag the capital they need to launch their venture.

business proposal

For those with little or no experience with business writing, a business plan is a comprehensive document detailing the various strategies of a venture created for people who would be willing to invest. A professionally-written business proposal can help an aspiring entrepreneur bag the capital they need to launch their venture.

Business Plans and Proposals

---

is a detailed documentation of a project, event, or process

Case Studies

Its purpose is to provide guidance, insights, or proof of something.

Case Studies

---

can be used for business and scientific or engineering purposes and can be on many topics. However, all of these have one thing in common–they leverage data to identify patterns

case studies

---

are authoritative documents that present solutions to complex issues.

White Papers

Organizations publish them to discuss their philosophies on different matters for defined audiences

White Papers

The goals of a white paper could include:

- To persuade the reader to adopt or invest in a particular solution (like a software, machine, or a crypto-currency)
- To establish the brand’s authority within the industry

Although not necessary, creating a _____ also entails engaging in graphic design

white paper

One habit that will benefit you over time is _____

writing your own summaries of the papers you read

---

minimal sections for writing a basic paper summary (Paper Summary Sections)

A. Introduction
B. Description
C. Assessment/Analysis
D. Conclusions

What is the specific title of the paper, book, or chapter being summarized? Who are authors? Citation/URL? What is a one or two sentence summary of the paper?

A. Introduction

This section can usually be done in a couple of sentences or a short paragraph.

A. Introduction

This is a more detailed summary of the paper

B. Description

What is the main goal or thesis of the paper? What were the steps the authors used to accomplish this goal or thesis? What is the main description of the paper — what technologies were investigated or discussed? What is the problem the paper is addressing, how did the authors address this problem, and what results did they achieve? What are the main results, findings, or accomplishments detailed in the paper?

B. Description

It is important to be specific — mention specific examples or points from the paper in your own words. This can usually be done in one or two paragraphs.

B. Description

What are your thoughts about the paper? Is what the authors presented new/novel or related to some other work/paper? What were to you the most important takeaways from the paper? What were the most important points you learned from the paper? What do you think are the technical implications of what the authors concluded? What do you think is the impact of what was presented?

C. Assessment/Analysis

Again, be specific, but this is where you provide your own commentary, insight, thoughts, or suggestions. This can usually be done in one or two paragraphs

C. Assessment/Analysis

A brief conclusion to summarize the paper and present your recommendations or final thoughts about the paper. This can usually be done in one or two sentences.

D. Conclusions

---

refers to all the technical and written documentation related to a software product that is:
- Developed to assist and document the software development process, and
- Created to help end-users make effective use of the software.

Software documentation

Software documentation refers to all the technical and written documentation related to a software product that is:

- Developed to assist and document the software development process, and
- Created to help end-users make effective use of the software.

Two main categories of Software documentation (Types of Software Documentation)

- Developer Documentation
- User Documentation

---

is technical documentation that can be categorized into two main categories

Software documentation

Used to document software requirements, design, architecture, and source code.

Developer Documentation

It is created by dedicated technical writers or software developers during the software development process.

Developer Documentation

---

is used by software developers, programmers, project managers, and other stakeholders involved in the software engineering process

Developer documentation

It serves as a reference for developers who may later work on updates to the software

Developer Documentation

Developer documentation is also known as

system documentation

Provides information about installing, configuring, or using software. Software is a product, and software documentation is part of the product. Comprehensive software documentation is one of the key factors that influence businesses’ buying decisions.

User Documentation

Types of Developer Documentation

- Software Requirements Specification (SRS)
- Software Design Description (SDD)
- Source Code Documentation
- Software Test Documentation
- UX Design Documentation
- Product Roadmap
- API Documentation
- SDK Documentation
- UML Diagrams
- Internal Knowledge Base

---

describes a software system to be developed. It lays out functional and non-functional requirements.

Software Requirements Specification (SRS)

---

may include a set of use cases that describe user interactions that the software must provide.

Software Requirements Specification (SRS)

---

establishes the basis for an agreement between customers and contractors or suppliers on how the software product should function.

Software Requirements Specification (SRS)

The software requirements specification (SRS) serves as the basis for this

Software Design Description (SDD)

---

contains the software design and overall architecture.

Software Design Description (SDD)

---

helps to ensure that the whole project team, including the software developers, are on the same page. It also helps to ensure that all stakeholders vet the entire design and that all risks and assumptions are considered.

Software Design Description (SDD)

---

refers to the computer programs that programmers create

Source code

It is comprised of long sequences of programming language statements that make up a computer program

Source code

---

contains all the computer programs related to a software product

Source code documentation

It serves as a reference for developers who may work on later versions of the software, and for developers who may use components of the software for their own projects

Source code documentation

---

is an iterative process

Software development

---

is developed and then tested, errors are identified and removed, and then it is tested again

software

---

known as bugs

errors

---

contains detailed test plans and procedures for software testing

Software test documentation

Components of the software test documentation include:

- Master Test Plan (MTP)
- Level Test Plan (LTP)
- Level Test Design (LTD)
- Level Test Procedure (LTP)
- Level Test Report (LTR)
- Master test report

---

contains the overall test plan

Master Test Plan (MTP)

---

contains the approach, resources, and schedule of the testing activities for each LTP.

Level Test Plan (LTP)

---

contains details for the test cases and test pass criteria.

Level Test Design (LTD)

---

contains the detailed test procedure, including details for necessary pre-requisites.

Level Test Procedure (LTP)

---

contains a summary of the test for a specified test level

Level Test Report (LTR)

---

contains a summary of the overall test report

Master test report

UX is the acronym for

user experience

When we say this, we refer to how people interact with a product

user experience

In the digital design world, it refers to everything that affects a user’s interaction with a digital product.

UX

---

is about what users both think and feel, and it also depends on the context in which the product is used.

User experience

---

is the process of creating products that are practical and usable

UX design/UX Design Documentation

---

requires a deep understanding of the user: their needs, wants, behaviors, and the context in which they will use a product. The ultimate goal of this is to make usable and useful products for users and businesses

UX Design/UX Design Documentation

---

is part of the product design, and that is why it begins at the requirements stage and proceeds through all the stages of software development, including the testing and post-release stages.

UX Design

---

covers user personas, user scenarios, user story maps, and a UX style guide.

UX documentation

---

contains a plan of action for how a software product will evolve over time. It serves as a guide for both business and technical teams.

Product Roadmap

API is the acronym for

Application Programming Interface

---

is a software intermediary that allows two applications to interface with each other.

Application Programming Interface (API)

---

contains instructions about effectively using and integrating with an API

API documentation

SDK is the acronym for

Software Development Kit

---

is a set of software-building tools for a specific platform, including the building blocks, debuggers, and a group of code libraries such as a set of routines specific to an operating system (OS).

Software Development Kit (SDK)

---

contains instructions about how to use an SDK effectively

SDK documentation

UML stands for

Unified Modeling Language

It is intended to provide a standard way to visualize the design of a software system.

Unified Modeling Language (UML)

Creating this before any code is written is an efficient way for programmers to keep track of all the components involved and how they relate to each other.

UML diagram

The current UML standard specifies 13 different types of diagrams:

class, activity, object, use case, sequence, package, state, component, communication, composite structure, interaction overview, timing, and deployment

---

The 13 types of diagrams of UML standard are organized into two groups:

structural diagrams and behavioral or interaction diagrams

---

is typically utilized as a way to allow employees to collaborate and share all company knowledge and information internally. When creating this, you can include anything that is meant for internal use

Internal Knowledge Base

Types of User Documentation

- How-to Guide
- Tutorials
- Configuration Guide
- Administration Guide
- Troubleshooting Guide
- External Knowledge Base
- FAQ Pages

---

require several types of end-user documentation to install, configure and use software products.

Software users

---

contains step-by-step instructions to help users perform specific tasks such as installing the software, upgrading the software, and activating the software.

How-to Guide

---

are especially relevant to software users with limited exposure to technology or users who are using software for the first time.

How-to Guide

---

is a learning aid designed to share knowledge and skills related to a certain topic. Examples include tutorials related to using a certain module of enterprise software or a tutorial on how to prevent software from unauthorized access.

Tutorials

Some of these include test questions to ensure comprehension of the material, while others may be simple walkthroughs of a software program. These are created for different levels of users such as basic, intermediate, and advanced.

Tutorials

Most enterprise-level software is complex, with hundreds or thousands of settings that require configuration. The setting for each parameter varies depending on the customer’s requirements.

Configuration Guide

---

contains all the necessary details that allow system administrators to configure the software successfully.

Configuration Guide

Usually, a team of IT professionals working under an administrator manages day-to-day operational issues such as adding new users, providing access rights, and taking data backups.

Administration Guide

---

contains all the relevant instructions administrators and their teams require for configuring and maintaining the software.

Administration Guide

---

contains a list of common problems along with step-by-step solutions.

Troubleshooting Guide

---

is a library of information about your software

knowledge base

Its purpose is to make it easy for people to find solutions to their problems without having to ask for help. These use a combination of text, image, and video-based content.

knowledge base

is where customers can go to learn anything they’d ever need to know about a company’s software-related products and services.

External Knowledge Base

An external knowledge base also known as a

customer-facing knowledge base

It is usually public to everyone and can be easily found online. If you browse through any software’s Help and Documentation section, that’s their external knowledge base.

External Knowledge Base

are answers to questions that have been either asked on a regular basis or that you expect your users to ask at some point.

FAQs

explain topics that don’t require too much depth or technical support. They cover topics that can be explained in one or two paragraphs.

FAQs/FAQ Pages