

ClickSports Requirements Specification

Version 1.0

April 19, 2021

Use this Requirements Specification template to document the requirements for your product or service, including priority and approval. Tailor the specification to suit your project, organize the applicable sections in a way that works best, and use the checklist to record the decisions about what is applicable and what isn't.

The format of the requirements depends on what works best for your project.

This document contains instructions and examples which are for the benefit of the person writing the document and should be removed before the document is finalized.

To regenerate the TOC, select all (CTL-A) and press F9.

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1. Executive Summary

1.1 Project Overview

Describe this project or product and its intended audience, or provide a link or reference to the project charter.

1.2 Purpose and Scope of this Specification

Describe the purpose of this specification and its intended audience. Include a description of what is within the scope and what is outside of the scope of these specifications.

For example:

In scope

This document addresses requirements related to phase 2 of Project A:

- modification of Classification Processing to meet legislative mandate ABC.
- modification of Labor Relations Processing to meet legislative mandate ABC.

Out of Scope

The following items in phase 3 of Project A are out of scope:

- modification of Classification Processing to meet legislative mandate XYZ.
- modification of Labor Relations Processing to meet legislative mandate XYZ.

(Phase 3 will be considered in the development of the requirements for Phase 2, but the Phase 3 requirements will be documented separately.)

2. Product/Service Description

In this section, describe the general factors that affect the product and its requirements. This section should contain background information, not state specific requirements (provide the reasons why certain specific requirements are later specified).

2.1 Product Context

How does this product relate to other products? Is it independent and self-contained? Does it interface with a variety of related systems? Describe these relationships or use a diagram to show the major components of the larger system, interconnections, and external interfaces.

2.2 User Characteristics

Create general customer profiles for each type of user who will be using the product. Profiles should include:

- Student/faculty/staff/other
- experience
- technical expertise
- other general characteristics that may influence the product

2.3 Assumptions

List any assumptions that affect the requirements, for example, equipment availability, user expertise, etc. For example, a specific operating system is assumed to be available; if the operating system is not available, the Requirements Specification would then have to change accordingly.

2.4 Constraints

Describe any items that will constrain the design options, including

- parallel operation with an old system
- audit functions (audit trail, log files, etc.)

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- access, management and security
- criticality of the application
- system resource constraints (e.g., limits on disk space or other hardware limitations)
- other design constraints (e.g., design or other standards, such as programming language or framework)

2.5 Dependencies

List dependencies that affect the requirements. Examples:

- This new product will require a daily download of data from X,
- Module X needs to be completed before this module can be built.

3. Requirements

- Describe all system requirements in enough detail for designers to design a system satisfying the requirements and testers to verify that the system satisfies requirements.
- Organize these requirements in a way that works best for your project. See [Appendix D](#) [Appendix D, Organizing the Requirements](#) for different ways to organize these requirements.
- Describe every input into the system, every output from the system, and every function performed by the system in response to an input or in support of an output. (Specify what functions are to be performed on what data to produce what results at what location for whom.)
- Each requirement should be numbered (or uniquely identifiable) and prioritized. See the sample requirements in Functional Requirements, and System Interface/Integration, as well as these example priority definitions:

Priority Definitions

The following definitions are intended as a guideline to prioritize requirements.

- Priority 1 – The requirement is a “must have” as outlined by policy/law
- Priority 2 – The requirement is needed for improved processing, and the fulfillment of the requirement will create immediate benefits
- Priority 3 – The requirement is a “nice to have” which may include new functionality

It may be helpful to phrase the requirement in terms of its priority, e.g., "The value of the employee status sent to DIS **must be** either A or I" or "It **would be nice** if the application warned the user that the expiration date was 3 business days away". Another approach would be to group requirements by priority category.

- A good requirement is:
 - Correct
 - Unambiguous (all statements have exactly one interpretation)
 - Complete (where TBDs are absolutely necessary, document why the information is unknown, who is responsible for resolution, and the deadline)
 - Consistent
 - Ranked for importance and/or stability
 - Verifiable (avoid soft descriptions like “works well”, “is user friendly”; use concrete terms and specify measurable quantities)
 - Modifiable (evolve the Requirements Specification only via a formal change process, preserving a complete audit trail of changes)
 - Does not specify any particular design
 - Traceable (cross-reference with source documents and spawned documents).

3.1 Functional Requirements

In the example below, the requirement numbering has a scheme - BR_LR_0## (BR for Business Requirement, LR for Labor Relations). For small projects simply BR-## would suffice. Keep in mind that if no prefix is used, the traceability matrix may be difficult to create (e.g., no differentiation between '02' as a business requirement vs. a test case)

The following table is an example format for requirements. Choose whatever format works best for your project.

For Example:

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
FR_001	The application should have a homepage that once a user logs in to create an idea from the images and background that is an interactive system for a variety of functions within sports and sports centers	This statement was proposed and approved by all investors and members who were present at last week's meetings. Everyone agreed that the impression left by the first page of the application visually is very important for all new users who do not have information what is the purpose of this application	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_002	The application should have one section for sign up and 1section for sign in.All users and business members should firstly create an account at app,then they can log in at account on sign in section	This statement was proposed and approved by all investors and members who were present at last week's meetings. Everyone agreed that creating an account will avoid spam and malicious targets of bad actors and will help to keep all important data safe and saved on a database personalized for every user.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_003	The sign up option should have a section in the center of the application layout,a section in the right edge of the beginning layout of the app and in the bottom of the layout app.	Most of the attendees proposed this idea but not all were full for the registration section to appear in 3 different application locations. Some of the attendees thought that a registration option in the center of the application layout was more than enough.	2	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_004	The application should have two alternatives where users can sign up, one for users and one for business members with different attributes and privileges from each other.	This statement was proposed and approved by all investors and members. Normally a person that just enters the app for making a reservation to a sport center can't have the same	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari

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Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
		attributes and tools as a sport center manager.			
FR_005	When users create an account and log in all content that was hidden before creating an account should be shown and the needed tools like reservation option,or save option.	This statement was proposed and approved by all.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_006	At database application should save the date when the user has signed up and the location tracked.	Some of the attendees thought that this was not necessary.	2	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_007	Center sports managers or owners when applying for creating an account should submit their business document and the account shouldn't be active due the team members of the product verify that it is valid.	This proposal was given by investors to avoid abuse of the business members that can create hundreds of accounts to promote the same center and to cover all layout by multiple sections from their accounts.Investors want to promote fair competition between businesses.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_008	In case that the business hasn't uploaded a valid document business the system should allow giving a last option to re-upload his documents.	This proposal was given by investors to avoid abuse of the business members.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_009	The app shall have a page called "Our Centers" where visitors can view all sport centers that are members of the system,their business name, sport category, numbers of sports fields and facilities, their staff information, free schedule when they can make a reservation.	This statement was proposed and approved by all investors and business members who were present at last week's meetings.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_10	The system should have an option for users to make reservations, to make updates like changing the timetable or delete the reservation.The user also should have the option to save a sport center post and to leave review	This statement was proposed and approved by all investors and business members who were present at last week's meetings.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari

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Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
	with comment for any sport center.				
FR_11	The user shall have the option for leaving like/unlike or reporting a sport center for any scam or uncorrect service to members of the system .	This was proposed by investors but some business members thought that this is necessary because all sport centers would be part of monthly review and rechecks from team members of the app.	2	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_12	The system should make it possible to make payments online for the reservation of sport centers. To make the system flexible where users can do their payment and businesses easily can take their profits from platform	All attendees agreed that this is a great idea but most of them think that this would make users leave the platform or to not make a reservation.	2	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_13	At the sport center section all centers should have an email and phone number contact so clients can easily make a call or send any email to ask for any information or inquiry about sport fields, reservation, prices or staff members.	All investors and businesses agree with this because communication is very important to keep the platform an efficient system for the public.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_14	System should create an alternative message app inside of the system where clients can communicate with each-other.	Some of the investors think that is an unnecessary additional cost and not necessary for as long as clients have at informations of sport centers their email addresses and phone numbers.	2	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_15	System should create an option for users to delete their account or to temporarily disable it if they desire it.	All of people that was in meeting think that system shouldn't keep account alive in case that an user want to delete it or to close it for a temporary time	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_16	System should allow sport centers manager to add photos,videos and events as much as they want inside of their section but without passing a limit that would take up all the database storage	This statement was proposed and approved by all investors and members who were present at last week's meetings.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari

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Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
FR_17	ClickSports Interactive system should give the option to sport centers to delete any photo,video or captions,to change their contact information or to update their name or other details that are related with their sport center but following the guideline of the internal regulatory of the ClickSports center.	This statement was proposed and approved by all investors and members who were present at last week's meetings.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_18	ClickSports System should allow sport centers managers/owners to see all details and information of the clients that make a reservation to their sport center through the platform to avoid any false reservation made by a fake client.	This statement was proposed and approved by all investors and members who were present at last week's meetings.Security of sport centers is primary for ClickSports Project.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_19	ClickSports Application should give option to sport centers to hide their section from any other sport center at platform they want to avoid unfairly competition in case that any business will stole strategy of promotion that a sport center is using in platform.Also giving an option to report any from those business competitors for copyright violation in case that any business will post same content.	This is a supported idea but some businesses was skeptical about this because they think that this can't stop piracy and an unfairly businesses can open an user account and to see all details from the sport center section without needing of seeing those from his business account	2	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_20	The platform shall give option to sport centers to add payment method option to take any profit they can get from clients through platform	All members think that this is a good idea but most of them think that users will be afraid to make the payments online.	2	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_21	The platform shall give sport centers managers/owners to delete their account, to temporarily disable their account at platform or to remove every information that is related with the business at ClickSports system.	Respecting business decisions and privacy is a primary principle which ClickSports members work.	1	07/04/2022	Reviewed: Elvis Dervishi Approved: Arlind Myzeqari
FR_22	The system should give the option for businesses to make	This was a proposal from investors because the platform	1	07/04/2022	Reviewed: Elvis Dervishi

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Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
	promotions at platform so their section can be shown at advertising zones to give higher visibility to clients that are members at platform.	should have their profits from businesses and this is one of the best methods that is favorable for business,investors and ClickSports team members too.			Approved: Arlind Myzeqari

3.2 Non-Functional Requirements

In here try to use the Structure given at slide 13 in Requirements Engineering Lecture Slides, with main categories of:

3.2.1 Product Requirements

The purpose of this web application is to simplify the booking and reservation process for all sport players of Tirana. This product will be compatible with any web browser , so the users will be able to access it from mobile or desktop.

3.2.1.1 User Interface Requirements

As it is written above, the user interface will be compatible with any web browser and it will be divided into 5 main interfaces. When first opened in the browser, the user is able to see 5 categories from which can log in. It depends if it is admin, owner, manager, player or employee.

Admin interface:

- o It will have a login only.
- o Logo above on the left.
- o Username and password
- o The admin login container will be in the center.

Owner:

- o Can signup or login.
 - Signup Interface will have :
 1. Full Name
 2. Username
 3. Email
 4. Password
 5. Date of birth
 6. Gender
 7. Forgot Password
 - Login Interface will have:
 1. Username
 2. Password
- o Logo on the left. The signup/login interface input container will be in the center.

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- Will be redirected to the owner's main interface, etc.
- Has access to managers.

Manager:

- Login/Signup interface
- Can manually add players
- Manages the schedule of the available fields

Player interface:

- Login
- Signup
- Reserve interface
- Booking interface
- Events interface
- Transaction Interface (paypal)

Employee:

- Employee tasks
- Financial Data ...

3.2.1.2 Usability

ClickSports web app should be useful for all its users. The system should meet the customers requirements. Each action should be performed fast and without many complex situations or errors.

3.2.1.3 Efficiency

The operations between interfaces to reserve or book should be in real time without interruptions. The “actors” can easily use the web application and then can easily perform the preferred actions.

3.2.1.3.1 Performance Requirements

Specify static and dynamic numerical requirements placed on the system or on human interaction with the system:

- Static numerical requirements may include the number of terminals to be supported, the number of simultaneous users to be supported, and the amount and type of information to be handled.
- Dynamic numerical requirements may include the number of transactions and tasks and the amount of data to be processed within a certain time period for both normal and peak workload conditions.

All of these requirements should be stated in measurable form. For example, "95% of the transactions shall be processed in less than 1 second" rather than “an operator shall not have to wait for the transaction to complete”.

3.2.1.3.2 Space Requirements

3.2.1.4 Dependability

Availability

Include specific and measurable requirements for:

- Hours of operation
- Level of availability required
- Coverage for geographic areas
- Impact of downtime on users and business operations
- Impact of scheduled and unscheduled maintenance on uptime and maintenance communications procedures
- reliability (e.g., acceptable mean time between failures (MTBF), or the maximum permitted number of failures per hour).

Reliability

Monitoring

Include any requirements for product or service health monitoring, failure conditions, error detection, logging, and correction.

Maintenance

Specify attributes of the system that relate to ease of maintenance. These requirements may relate to modularity, complexity, or interface design. Requirements should not be placed here simply because they are thought to be good design practices.

Integrity

3.2.1.5 Security

Specify the factors that will protect the system from malicious or accidental access, modification, disclosure, destruction, or misuse. For example:

- encryption
- activity logging, historical data sets
- restrictions on intermodule communications
- data integrity checks

Specify the Authorization and Authentication factors. Consider using standard tools such as PubCookie.

3.2.2 Organizational Requirements

Requirements which are a consequence of organisational policies and procedures e.g. process standards used, implementation requirements, etc

3.2.2.1 Environmental Requirements

3.2.2.2 Operational Requirements

3.2.2.3 Development Requirements

3.2.3 External Requirements

- Requirements which arise from factors which are external to the system and its development process e.g. interoperability requirements, legislative requirements, etc.

3.2.3.1 Regulatory Requirements

3.2.3.2 Ethical Requirements

3.2.3.3 Legislative Requirements

Specify the requirements derived from existing standards, policies, regulations, or laws (e.g., report format, data naming, accounting procedures, audit tracing). For example, this could specify the requirement for software to trace processing activity. Such traces are needed for some applications to meet minimum regulatory or financial standards. An audit trace requirement may, for example, state that all changes to a payroll database must be recorded in a trace file with before and after values

3.2.3.3.1 Accounting Requirements

3.2.3.3.2 Security Requirements

3.3 Domain Requirements

Everything related to the domain that might be needed in the project shall be mentioned here. Sometimes the domain Requirements might be thought of as part of either functional or non-functional requirements.

A.1.1.1.

Please provide all necessary non-functional requirements, similar to the requirements explained in the lesson slides or in the textbook.

4. User Scenarios/Use Cases

Provide a summary of the major functions that the product will perform. Organize the functions to be understandable to the customer or a first time reader. Include use cases and business scenarios, or provide a link to a separate document (or documents). A business scenario:

- Describes a significant business need
- Identifies, documents, and ranks the problem that is driving the scenario
- Describes the business and technical environment that will resolve the problem
- States the desired objectives
- Shows the “Actors” and where they fit in the business model
- Is specific, and measurable, and uses clear metrics for success

APPENDIX

The appendixes are not always considered part of the actual Requirements Specification and are not always necessary. They may include

- Sample input/output formats, descriptions of cost analysis studies, or results of user surveys;
- Supporting or background information that can help the readers of the Requirements Specification;
- A description of the problems to be solved by the system;
- Special packaging instructions for the code and the media to meet security, export, initial loading, or other requirements.

When appendixes are included, the Requirements Specification should explicitly state whether or not the appendixes are to be considered part of the requirements.

Appendix B. Definitions, Acronyms, and Abbreviations

Define all terms, acronyms, and abbreviations used in this document.

Appendix C. References

List all the documents and other materials referenced in this document.

Appendix D. Requirements Traceability Matrix

The following trace matrix examples show one possible use of naming standards for deliverables (FunctionalArea-DocType-NN). The number has no other meaning than to keep the documents unique. For example, the Bargaining Unit Assignment Process Flow would be BUA-PF-01.

For example (1):

Business Requirement	Area	Deliverables	Status
BR_LR_01 The system should validate the relationship between Bargaining Unit/Location and Job Class.---Comments: Business Process = "Assigning a Bargaining Unit to an Appointment" (Priority 1)	BUA	BUA-CD-01 Assign BU Conceptual Design	Accepted
		BUA-PF-01 Derive Bargaining Unit-Process Flow Diagram	Accepted
		BUA-PF-01 Derive Bargaining Unit-Process Flow Diagram	Accepted
BR_LR_09 The system should provide the capability for the Labor Relations Office to maintain the job class/union relationship.---Comments: Business Process = "Maintenance" (Priority 1)	BUA	BUA-CD-01 Assign BU Conceptual Design	Accepted
		BUA-PF-02 BU Assignment Rules Maint Process Flow Diagram	ReadyForReview

For example (2):

BizReqID	Pri	Major Area	DevTstItems DelivID	Deliv Name	Status
BR_LR_01	1	BUA	BUA-CD-01	Assign BU Conceptual Design	Accepted
BR_LR_01	1	BUA	BUA-DS-02	Bargaining Unit Assignment DB Modification Description	Accepted
BR_LR_01	1	BUA	BUA-PF-01	Derive Bargaining Unit-Process Flow Diagram	Accepted
BR_LR_01	1	BUA	BUA-UCD-01	BU Assign LR UseCase Diagram	ReadyForReview

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BizReqID	Pri	Major Area	DevTstItems DelivID	Deliv Name	Status
BR_LR_01	1	BUA	BUA-UCT-001	BU Assignment by PC UseCase - Add Appointment and Derive UBU	Reviewed
BR_LR_01	1	BUA	BUA-UCT-002	BU Assignment by PC UseCase - Add Appointment (UBU Not Found)	Reviewed
BR_LR_01	1	BUA	BUA-UCT-006	BU Assignment by PC UseCase - Modify Appointment (Removed UBU)	Reviewed
BR_LR_09	1	BUA	BUA-CD-01	Assign BU Conceptual Design	Accepted
BR_LR_09	1	BUA	BUA-DS-02	Bargaining Unit Assignment DB Modification Description	Accepted
BR_LR_09	1	BUA	BUA-PF-02	BU Assignment Rules Maint Process Flow Diagram	Accepted
BR_LR_09	1	BUA	BUA-UCD-03	BU Assign Rules Maint UseCase Diagram	Reviewed
BR_LR_09	1	BUA	BUA-UCT-045	BU Assignment Rules Maint: Successfully Add New Assignment Rule	Reviewed
BR_LR_09	1	BUA	BUA-UCT-051	BU Assignment Rules MaintUseCase: Modify Rule	Reviewed
BR_LR_09	1	BUA	BUA-UCT-053	BU Assignment Rules MaintUseCase - Review Assignment Rules	Reviewed
BR_LR_09	1	BUA	BUA-UCT-057	BU Assignment Rules MaintUseCase: Inactivate Last Rule for a BU	Reviewed
BR_LR_09	1	BUA	BUA-UI-02	BU AssignRules Maint UI Mockups	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-021	BU Assignment Rules Maint TestCase: Add New Rule (Associated Job Class Does Not Exist) - Success	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-027	BU Assignment Rules Maint TestCase: Modify Rule - Success	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-035	BU Assignment Rules Maint TestCase: Add New Rule (Associated Job Class Does Not Exist) - Error Condition	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-049	BU Assignment Rules Maint TestCase: Modify Rule - Error Condition	ReadyForReview

For example (3):

BizReqID	CD01	CD02	CD03	CD04	UI01	UI02	UCT01	UCT02	UCT03	TC01	TC02	TC03	TC04
BR_LR_01			X		X		X			X		X	
BR_LR_09	X			X		X			X		X		X
BR_LR_10	X			X					X		X		
BR_LR_11		X											

Appendix E. Organizing the Requirements

This section is for information only as an aid in preparing the requirements document.

Detailed requirements tend to be extensive. Give careful consideration to your organization scheme. Some examples of organization schemes are described below:

By System Mode

Some systems behave quite differently depending on the mode of operation. For example, a control system may have different sets of functions depending on its mode: training, normal, or emergency.

By User Class

Some systems provide different sets of functions to different classes of users. For example, an elevator control system presents different capabilities to passengers, maintenance workers, and fire fighters.

By Objects

Objects are real-world entities that have a counterpart within the system. For example, in a patient monitoring system, objects include patients, sensors, nurses, rooms, physicians, medicines, etc. Associated with each object is a set of attributes (of that object) and functions (performed by that object). These functions are also called services, methods, or processes. Note that sets of objects may share attributes and services. These are grouped together as classes.

By Feature

A feature is an externally desired service by the system that may require a sequence of inputs to affect the desired result. For example, in a telephone system, features include local call, call forwarding, and conference call. Each feature is generally described in a sequence of stimulus-response pairs, and may include validity checks on inputs, exact sequencing of operations, responses to abnormal situations, including error handling and recovery, effects of parameters, relationships of inputs to outputs, including input/output sequences and formulas for input to output.

By Stimulus

Some systems can be best organized by describing their functions in terms of stimuli. For example, the functions of an automatic aircraft landing system may be organized into sections for loss of power, wind shear, sudden change in roll, vertical velocity excessive, etc.

By Response

Some systems can be best organized by describing all the functions in support of the generation of a response. For example, the functions of a personnel system may be organized into sections corresponding to all functions associated with generating paychecks, all functions associated with generating a current list of employees, etc.

By Functional Hierarchy

When none of the above organizational schemes prove helpful, the overall functionality can be organized into a hierarchy of functions organized by common inputs, common outputs, or common internal data access. Data flow diagrams and data dictionaries can be used to show the relationships between and among the functions and data.

Additional Comments

Whenever a new Requirements Specification is contemplated, more than one of the organizational techniques given above may be appropriate. In such cases, organize the specific requirements for multiple hierarchies tailored to the specific needs of the system under specification.

There are many notations, methods, and automated support tools available to aid in the documentation of requirements. For the most part, their usefulness is a function of organization. For example, when organizing by mode, finite state machines or state charts may prove helpful; when organizing by object, object-oriented analysis may prove helpful; when organizing by feature, stimulus-response sequences may prove helpful; and when organizing by functional hierarchy, data flow diagrams and data dictionaries may prove helpful.