
 <b>UNIVERSIDAD MANUELA BELTRÁN</b>	<b>MACROPROCESO RECURSOS E INFRAESTRUCTURA Y LABORATORIOS</b>	
	Nombre del Proceso: <b>GESTIÓN DE LABORATORIOS</b>	<b>CODIGO: LA-FM-007</b>
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GUÍA DE LABORATORIO DE ARQUITECTURA DE SOFTWARE					
Unidad Temática: Fundamentals of Software Architecture.					
G u í a N o .	1		COMPETENCIAS DISCIPLINARES		
			Investigates the names and characteristics of the architectures most commonly used in designing information systems		
	4 sesiones	Semana 1, 2	COMPETENCIAS GENÉRICAS		
	Horas de trabajo		Determines which architectures and design patterns most commonly used in the design of information systems for the success of a project.		
	8 horas con docente	16 horas Autónomas	It identifies the characteristics of a system differentiating their strengths and weaknesses to establish its use in a specific context.		
Tipo de trabajo					
Grupal	X	Individual	Laboratorio requerido	Computer lab	
Introducción					
Subtemas: - Meaning - elements - Principles - Quality Attributes - Stakeholders.					
Bibliografía recomendada					
ZadahmadJafarlou, M., Arasteh, B., & YousefzadehFard, P. (2011). A Pattern-Oriented Architecture and Web-Based Learning To Support Mobile Software Development. Came - Social and Behavioral Sciences. (Recovered Database: ScienceDirect).					
Tema	Subtema	Referente bibliográfico			
Fundamentals of software architecture	- Meaning - elements - Principles	Rumbaugh, James, (1999). The Unified Modeling Language Reference Manual.Addison-Wesley. (UMB library collection) Gutiérrez, L. E. (2010). Arquitectura Software, Investigación Aplicada a la Construcción de Marcos de Trabajo. (UMB library collection)			
	- Quality Attributes				

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- Stakeholders.	<p>Gutiérrez, L. E. (2010). Arquitectura Software, Investigación Aplicada a la Construcción de Marcos de Trabajo. (UMB library collection)</p> <p>Pierre Bourque - Richard E. Fairley Deitel, HM (2002). Advanced Java 2 Platform: how to program. Prentice Hall, (UMB library collection)</p>
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### Palabras clave

SOFTWARE ARCHITECTURE, UNIFIED MODELING LANGUAGE

### Marco conceptual o referencial

"The software architecture is a set of standards that provide a framework necessary to guide the construction of a software, allowing programmers, analysts and the entire set of software developers share the same line of work and cover all the objectives and restrictions on the application. It is considered the highest level in designing the architecture of a system as set out the structure, functioning and interaction between parts of the software."  
(Ecured, 2018)

Components and interactions are taken into account in the software architecture are:


#### components

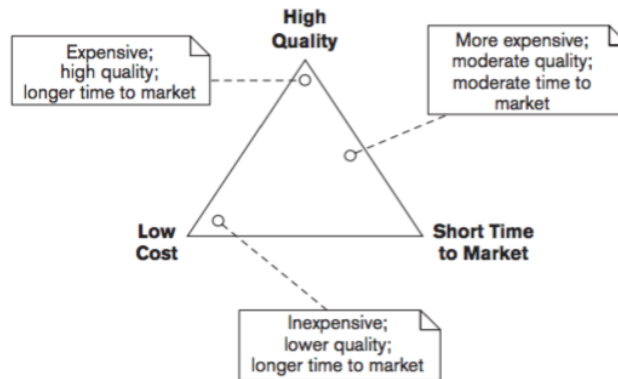
The software architecture is composed by:

- Clients and servers.
- Databases.
- Filters.
- Levels in hierarchical systems.
- interactions

Among the components of the software architecture exists a set of interactions that go on:

- Procedure calls.
- Behavior variables.
- client server protocols.
- Asynchronous transmission events. "

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The Quality Triangle. From Nick Rozanski, Eoin Woods (2012). Software Systems Architecture: Working with stakeholders using viewpoints and perspectives,

Some of the important attributes of a software development project are often shown as a triangle whose corners represent cost, quality, and time to market. (Rozanski, 2012)

### Presaberes Requeridos.

El estudioso debe poseer conocimientos en metodologías ágiles como scrum, así como patrones de diseño de software y configuraciones de servers


### Actividad de trabajo independiente

- Read the article called *"The patterns of user experience for sticky-note diagrams in software requirements workshops"* available in SCIEDIRECT Data Base and write two paragraphs to summarize its content.

[The patterns of user experience for sticky-note diagrams in software requirements workshops - ScienceDirect \(umb.edu.co\)](https://www.sciencedirect.com/science/article/pii/S1569190X17300011)

### Materiales, equipos e insumos a utilizar

<b>Materiales, equipos e insumos proporcionados por la Universidad</b>	<ul style="list-style-type: none"> <li>Un computador por estudioso</li> <li>Conexión a Internet</li> <li>Enterprise Architect, NetBeans, Eclipse, Visual Studio. Microsoft Office.</li> </ul>
<b>Materiales del estudiante</b>	<ul style="list-style-type: none"> <li>Un computador por estudioso</li> <li>Conexión a Internet</li> </ul>

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	<ul style="list-style-type: none"> <li>Enterprise Architect, NetBeans, Eclipse, Visual Studio. Microsoft Office.</li> </ul>
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### Precauciones, nivel de riesgo y recomendaciones a considerar

El factor de riesgo para este laboratorio está clasificado como BAJO, debido a que la eficacia del conjunto de las medidas preventivas existentes es alta.  
En otras palabras, el riesgo está controlado

En todo caso se deben seguir las siguientes recomendaciones para minimizar los riesgos propios de la actividad:

1. Identificar y conocer el protocolo de seguridad de laboratorios de informática.
2. No navegar en internet sin autorización del docente.
3. No ejecutar programas sin autorización del docente.
4. No instalar en los equipos Software de ninguna índole.
5. No trasladar equipos de cómputo de su módulo sin autorización del personal del área.
6. Cuidar sus objetos personales.
7. Cada alumno tiene como responsabilidad recibir las actividades de cada clase y apropiarse del material necesario para el desarrollo de las mismas.
8. Está prohibido el ingreso o consumo de alimentos, bebidas, chicle... dentro de la sala.
9. Está prohibido el uso e ingreso de dispositivos como celulares, parlantes y memorias USB sin autorización.
10. No conectar ni desconectar dispositivos como teclados, mouse o conexiones, en caso de anomalía avisar al profesor para realizar cambios o conexiones.
11. El trabajo debe hacerse en silencio, evitando las reuniones o interrumpiendo las actividades de otros estudiantes.
12. Cuide el buen funcionamiento del equipo que la ha sido asignado, evite cambiar configuraciones o intervenir los programas y propiedades del sistema operativo, el auxiliar de laboratorio es el único autorizado.
13. Todo dispositivo (teclado o mouse) que se pierda o se dañe con intención deberá ser repuesto.
14. No portar maletines o morrales, estos deben quedar depositados en los lockers destinados para ello. En caso de duda pida el respectivo candado con los auxiliares de cada laboratorio.
15. No rayar mesas, sillas, paredes y equipos, cuidar el aseo y orden de su puesto de trabajo.
16. Se prohíbe el ingreso o exploración de páginas no autorizadas y pornográficas, es causal de sanción y expulsión (vetado) de la sala de informática por varias sesiones.

<b>CLASIFICACIÓN DEL RIESGO</b>	Muy alto <input type="radio"/> Medio <input type="radio"/> Alto <input type="radio"/> Bajo <input checked="" type="radio"/>
<b>FACTORES DE RIESGO</b>	<b>COMO MINIMIZAR LOS FACTORES DE RIESGO</b>
<ul style="list-style-type: none"> <li>Ergonomica</li> </ul>	<ul style="list-style-type: none"> <li>Manejar posturas correctas frente al computadora para las clases.</li> </ul>

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#### RECOMENDACIONES, CONSIDERACIONES PARA EL USO DE MATERIAL Y EPP

- Los mencionados en precauciones en el ítem anterior.

#### CONSIDERACIONES ÉTICAS

- En caso de ser necesarias.

#### Procedimiento de la práctica

Utilizar texto enumerado, diagrama de flujo, secuencia lineal o infograma del método a desarrollar en la práctica, en caso de requerir un montaje especial, diagramar.


1. *As a working group propose at least 3 project ideas. Evaluate advantages and disadvantages before making a decision. Show a comparison and justify your choice (consider technical aspects, the relevance of the problem to be solved, value delivered to the end user, etc.)*

2. *For the general definition of the software project take into account the following aspects:*

A. Definition of the problem: explain clearly and precisely the problem to be solved

**Today's world is globalizing and it is becoming more and more necessary that all the parts that make up this society are updated and are at the forefront with the others, for that reason always at the time of a creation we have to give recognition to people who make some creation of art, because a digital creation is also art.**

**The problem that we see reflected is that there are many pages of creations, but there is not one that is specified in css art, the requirement is to have a new computer system that replaces the gallery systems (an example Pinterest) as they are obsolete to put only this type of creations, there are also shortcomings in terms of editing on the same page or app, there are pages that only allow you to upload the image, without being able to create**

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one through the system itself.

Solution offered: what is the system to be developed; needs covered by the system (what is the expected product?, what is it for?)

- B. Justification: explain the value generated by the project (why is it worth doing?).


**The product as we talked about in the problem will be focused on the population that develops art creations in css, so the system will help people who upload their gallery to be more recognized because it is focused on something more specific, at this time the scope that we will give will be to a population of Bogota, this software serves not only to upload your gallery but to create the design on the same platform, this can be very helpful for improving times in terms of creation and would generate simplicity for artists.**

- C. End User: Describe the people or entities that will use the system or part of it (to whom is it addressed?)

**It is necessary to make this project for people who love css and their creations, it is almost a community, where this type of art is welcomed, but it should be clarified if anyone wants or is interested in making a creation can do so on the page and upload your gallery.**

- D. Utility: explain how a return on investment could be achieved for the project

**The investment of the project consists of 5 million approximately since the cost of the elements of the computer plus the passive expenses achieve an expense of that caliber, what are elements of hardware that can be damaged we will put a budget of 1.000.000 and for the passive expenses monthly could be 80000, the return of the investment is increased due to the amount of users in the platform between more users would be more viable and we would have more profits since that is one of our objectives.**

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### 3. *Workspace.*

- A. Create a repository for the project. All members of the group must be linked to the repository
- B. Build a page to store documentation. It is recommended to use tools such as GitLab pages, GitHub pages or Read the docs.

### 4.

A:

<b>APP</b>	<b>Feature-1</b>	<b>Feature-2</b>	<b>Feature-3</b>	<b>Feature-4</b>
Pinterest	It has variety in photos, images, wallpapers, photography, and animated images.	Allows users to create and manage on personal, themed, hobby boards, and more.	Based on the recent activity of their users they recommend certain options according to their needs and tastes.	It has an amazingly comfortable user experience as it helps to get where you are looking and thanks to its multiple functions you reach a.
Pexels	Offers over 3.2 million photos and videos from free files	It offers high quality photos plus they are labeled; they are easy to find.	Users can share various photos and images which help others with their business idea and even themselves.	Here designers and photographers upload their photos and help others easily create attractive products and designs.
Xtrafondos	It offers high number of images that the user can download, and all are of high quality	It also has backgrounds in 4k, and this is one of its best features since its resolution contains more than 3840 by 2160 pixels	The submitted images remain the property of the original author's rights. images are for personal and non-commercial use	it has several categories for all types of users which helps to have more variety and scope on the images and backgrounds provided


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#### A. Functional requirements:

<Id>001	Users must use an account with a password individually.
Version.	V1(31/02/2022)
Dependencies.	NA
Description.	Each user can create a personal account for the entry and use of the platform, if the user does not have an account can create one through a registration form.
Importance.	It is important that each user has their personal account to be able to show them information such as their preferences in images and backgrounds.
Priority.	High.
State.	Analyzed.


<Id>002	The system must store the personal data entered by users such as their name, email, and password.
Version.	V1(31/02/2022)
Dependencies.	Account of each user.
Description.	The system will store the registration of users in the database, the password being a confidential data will be encrypted with an algorithm.
Importance.	The level of importance is high, since the information stored in the system will be used to keep track of users, templates, favorite images, and uploaded images.
Priority.	High.
State.	Analyzed.



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<Id>003	The User may authenticate by means of his email and password, previously established.
Version.	V1(31/02/2022)
Dependencies.	Register.
Description.	The user authenticates with his email and password, so the system will allow or not the entry depending on whether the data is valid.
Importance.	The importance is high, since without this functionality users will not be able to enter the platform.
Priority.	High.
State.	Analyzed.

<Id>004	The system will display the images and the user will be able to select and download them in the format they want, be CSS and png.
Version.	V1(31/02/2022)
Dependencies.	Image menu.
Description.	The user will be able to choose a variety of images according to their need and taste in the categories.
Importance.	This requirement is of significant importance since it is the one that allows the user to select the images he wants to download.
Priority.	High.
State.	Analyzed.

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<Id>005	The user will be able to edit, download and delete images from their favorite template.
Version.	V1(31/02/2022)
Dependencies.	Template.
Description.	The system will allow the user to download, delete and edit images from their favorite template.
Importance.	This requirement is important as it gives the user freedom over their template.
Priority.	High.
State.	Analyzed.


<Id>011	The administrator will be able to view, upload, edit and delete the images in general.
Version.	V1(31/02/2022)
Dependencies.	Images and categories.
Description.	The system will allow the administrator to view, upload, edit and delete the images.
Importance.	This requirement is one of the most important, because this is the module that will allow the administrator to control the images that users upload as well as the duplicity of these.
Priority.	High.
State.	Analyzed.

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## B. Non-functional requirements:

<Id>016	All functionality of the image upload and download system must respond to the user in less than 20 seconds.
Version.	V1(31/02/2022)
Dependencies.	Hosting server.
Description.	The loading and download time of images requested by the user must not exceed 20 seconds.
Importance.	This requirement has a high priority since an optimal response from the server must be ensured.
Priority.	High.
State.	Analyzed.

<Id>019	The web application must implement responsive design techniques..
Version.	V1(31/02/2022)
Dependencies.	Web application.
Description.	The website must be accessible and adaptable to all devices that want to access.
Importance.	This requirement has a high priority since a satisfactory user experience must be ensured on any device, taking into account the availability of this.
Priority.	High.
State.	Analyzed.

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C. Scope of the system: The cost that has been budgeted for the project is five million pesos taking into account the passive expenses of electricity and internet and also the server and hosting services, the project will be carried out throughout the semester having between 2 to 5 hours worked by developer, the project will be working on a low scale for the users destined, you can download and upload images but many will be designed since we do not have the knowledge in design for these.

D. Selected technologies:

**MySQL, Laravel, JavaScript, CSS, Bootstrap, Hosting**

E. All information must be stored on the project page.

F. Build a presentation (format 10- 15 min) where you present your project idea (the presentation must contain the information of the points of points 1,2,3 and 4 in English)

*5. Update the information on the project page*


### To be taken into account

A. This activity corresponds to the first note of the laboratory

B. On Thursday, February 17, each group must make a presentation with their project idea

C. The project idea and an initial version of the presentation will be reviewed on a later Friday, if some group have some adjustments to be made.

D. The presentation of the project page is important, make sure that the information is well distributed and has a good presentation!

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## Evaluation

- 20 % oral presentation
- 20 % Adjustments according to recommendations
- 40 % Clarity in the definition of the project (scope, functionalities, justification, etc.)
- 20 % Creation of repository and project page

## Resources

How to prepare a pitch:


<https://blog.broota.com/2014/06/que-es-y-como-preparar-un-pitch/>

Additional tools:


- <https://readthedocs.org/>
- <https://pages.github.com/>
- <https://about.gitlab.com/product/pages/>

### INFORME LABORATORIO DE coloque el nombre de la asignatura No \_ número de la guía

Grupo	I n t e g r a n t e s	1.		4.		Nota
		2.		5.		
		3.		6.		

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Resultados obtenidos	
RESULTS.	
1	
2	
3	
4	
<p align="center"><b>Análisis e interpretación de resultados</b></p> <p>En este apartado se realiza el análisis de los datos obtenidos, estos pueden ser de forma cualitativa o cuantitativa según la naturaleza de la práctica. Puede hacerse por medio de pregunta orientadora, si el docente lo ve necesario.</p> <p>Según criterio del docente, también se puede incluir una pregunta orientadora que encamine al estudioso a plantear una aplicación de esta práctica de laboratorio a su futuro que hacer profesional.</p> <p>También se puede incluir una pregunta orientadora que lleve al estudioso a analizar las posibles causas de error.</p>	
<p align="center"><b>Conclusiones</b></p> <p>Este apartado incluye las conclusiones construidas como parte de los resultados de aprendizaje por parte de los estudiosos en donde, de manera breve, se sintetiza los puntos más importantes de lo observado, encontrado y analizado en la práctica; esto teniendo en cuenta las metas de aprendizaje (o competencias) planteadas al inicio de la guía de laboratorio. (Encabezado)</p> <p>Adicionalmente, y en aras de reconocer la conciencia metacognitiva de los estudiosos respecto al</p>	


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saber hacer dentro de la práctica de laboratorio, el docente establecerá ***una(s) pregunta(s) orientadora(s)*** que permitirán reflexionar a los mismos frente a los aprendizajes adquiridos.

Pregunta orientadora


**QUESTIONNAIRE.**

**Rubrica de evaluación**


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EVALUATION RUBRICA								
INDIVIDUAL			EVALUATION CRITERIA					NO
ilit ,	student		0 to 1.5	1.6 to 2.9	3.0 to 3.9	4.0 to 4.5	4.6 to 5.0	
	1.							
	2.							
	3.							
	4.							
	5.							
	6.							
GRUPAL		%	0 to 1.5	1.6 to 2.9	3.0 to 3.9	4.0 to 4.5	4.6 to 5.0	NO
p r o c e d u r a l  ( t o l e a r n t o d o )	Organizes the results obtained through the use of drawings, graphs, tables and formulas.	30%	They are not accurate or do not help the understanding of the topic	They are organized and sometimes help understanding the issue	They are organized and help the understanding of the subject	They are accurate and help understanding the issue	They are organized, accurate and help the understanding of the subject	
	Makes proper use of the concepts apply when the experimental practical proposal		It is limited to the collection of information requested	It refers to information in practice	It makes basic relationships of information practice	Analyzes related information with practice	Infers the information obtained and related to its reality	



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			<b>FECHA: 18/junio/2021</b>

c o g n i t i v e  ( L e a r n i n g t o k n o w )	Enumerates the steps for the development of software can determine differences and the importance of each to the success of a project.	3 0 %	Not identified	Identifies some, though not the difference or does not indicate its characteristics	It identifies some and determines its characteristics	Identifies all, but only appoints some of its features	Identifies and indicates the characteristics of all	
	Develops teamwork skills, prioritizing decision-making and listening to different proposals		Not part of the proposed work by the team	Partly proposed work is part of the team	basic parameters of the proposed makes the team work according	Participates in the work proposed by the team responsibly and timely	actively participates proposed by the team work responsibly and timely	
a f f e c t i v e p a r t n e r  (l e a	Care respects and demands respect against interaction with peers and teachers	f i f t e e n %  f i f t e e n %	Often complains work peers and teachers, and justifies its shortcomings in the groupware	Sometimes shows a favorable attitude towards the class and limited to account for basic working conditions	It shows a favorable attitude towards the class and occasionally interact with peers and teachers	It shows a good attitude to class and interact with their peers and teachers	It shows an outstanding attitude to class and often interact with peers and teachers	
	Practice using written language as a means of identification and differentiation in reporting		Not build the lab report	Build the lab report incomplete	Build the lab report in accordance with the minimum	Build a good way lab report	Build outstandingly lab report	

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r n t o b e )					requirement s			
c o m m u n i c a t i v e ( T o l e a r n t o l i v e t o g e t h e r )	Technical language used to refer to different concepts relating to experimental practice		Does not use technical language appropriate for lab	Occasionally it makes use of an appropriate technical language for lab	It makes use of an appropriate technical language for lab	good use of technical language appropriate for lab ago	outstanding use of appropriate technical language for lab ago	
	Literature search performs reliable sources that can respond to situations evidenced problem prior consultation and the lab report	f i f t e e n % 1 0 %	Information sources are few or absent. If you use them are unreliable and do not contribute to the construction of the central axis	The sources of information are restricted or low diversity. In addition they are outdated and contain little relevant information	The sources of information are relevant and informative. Acceptable parameters presented by the teacher	Information sources are varied and informative. They are reliable and contribute further to the topic	Information sources are varied and relevant. They are also updated and contain information relevant to the topic	



**FECHA: 18/junio/2021**

# Investigativa