COMSATS University Islamabad (CUI)

Assignment-01

(CLO-01)

Project Proposal

(SCOPE DOCUMENT)

for

Project Title

(Valid title reflecting scope and objectives)

Version 1.0

By

Student Name 1 **SP20-BCS-xxx**

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BCS-4-A/B

Supervisor

Supervisor Name

Bachelor of Science in Computer Science (20xx-20xx)

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Project Category: (Select all the major domains of proposed project**)**

☐ **A-**Desktop Application/Information System	☐ **B-**Web Application/Web Application based Information System	
☐ **C-**Problem Solving and Artificial Intelligence	☐ **D-**Simulation and Modeling	☐ **E-**Smartphone Application
☐ **F-**Smartphone Game	☐ **G-**Networks	☐ **H-**Image Processing
☐ **I-** Augmented Reality	☐ **J-** Virtual Reality	☐ **K-** Other (specify category) _____

Abstract

Write a one paragraph abstract keeping in view the following guideline:

Rational: Provide the reason you are creating the proposed software/project. [1 sentence]
Existing system: Discuss the current state of the world. [2 sentences]
Targeted challenges: Problems/opportunities the proposed project is going to resolve. [2 sentences]
Grey area: Identify the gap that will be addressed by the proposed project. [1 sentence]
Objectives: Discuss the goals that the proposed project is going to achieve. [3 sentences]
Significance of this project: Discuss the key benefits of the proposed project in terms of product. [1 sentence]

https://www.projecttopics.org/write-abstract-final-year-project.html

The abstract SHOULD NOT contain:

- Lengthy background or contextual information
- Redundant phrases, unnecessary adverbs and adjectives, and repetitive information
- Acronyms or abbreviations
- References to other literature [say something like, "current research shows that..." or "studies have indicated..."]
- Using ellipticals [i.e., ending with "..."] or incomplete sentences
- Jargon or terms that may be confusing to the reader
- Citations to other works
- Any sort of image, illustration, figure, or table, or references to them.

1. Introduction

Specify the purpose of this project proposal document along with the description of the system background in detail.
[Usually in 10-12 sentences]

2. Problem Statement

Provide a problem statement in a concise paragraph describing
Why are you developing this software system?
What problem your software system is going to solve?
[Usually in 10-16 sentences]

Example:

Employees at the company Process Impact presently spend an average of 65 minutes per day going to the cafeteria to select, purchase, and eat lunch. About 20 minutes of this time is spent walking to and from the cafeteria, selecting their meals, and paying by cash or with credit card. When employees go out for lunch, they spend an average of 90 minutes off-site. Some employees phone the cafeteria in advance to order a meal to be ready for them to pick up. Employees don't always pet the selections they want because the cafeteria runs out of certain items. The cafeteria wastes a significant quantity of food that is not purchased and must be thrown away. These same issues apply to breakfast and supper, although far fewer employees use the cafeteria for those meals than for lunch.

3. Problem Solution/Objectives of the Proposed System

Describe the application of software being specified including objectives and goals keeping in view the problem statement listed in Section 2.
[Provide list of objectives]

[Usually in 14-16 sentences]

Example:

Many employees have requested a system that would permit a cafeteria user to order meals (defined as a set of one or more food items selected from the cafeteria menu) online, to be picked up at the cafeteria or delivered to a company location at a specified time and date. Such a system would save employees time, and it would increase their chance of getting the items they prefer. Knowing what food items customers want in advance would reduce waste in the cafeteria and would improve the efficiency of cafeteria staff. The future ability for employees to order meals for delivery from local restaurants would make a wide range of choices available to employees and provide the possibility of cost savings through volume discount agreements with the restaurants.

3.1 Objectives

Example:
BO-1: Reduce the cost of cafeteria food wastage by 40%.
BO-2: Reduce cafeteria operating costs by 15%.
BO-3: Increase average effective work time by 15 minutes per cafeteria-using employee per day.

4. Related System Analysis/Literature Review

Write about the existing/similar systems related to your proposed project.
Do not use more than 4 sentences for explaining a single system/application.

Briefly provide an analysis of the related system which may help you to specify the contribution of the proposed project.

Table 1 Related System Analysis with proposed project solution

Application Name	Weakness	Proposed Project Solution
• The name of related application(s).	• Weaknesses may include limited features, low quality functionality and processes.	• The way the proposed project mitigates the weaknesses.

5. Vision Statement

Write a concise vision statement that summarizes the long-term purpose, intent, and significance of the product. The vision statement should reflect a balanced view that will satisfy the expectations of diverse stakeholders. It can be idealistic but should be grounded in the realities of existing or anticipated markets. The following keyword template works well for crafting a product vision statement:

For [target customer]

Who [statement of the need or opportunity]

The [product name]

Is [product category]

That [major capabilities, key benefit, compelling reason to buy or use]

Unlike [primary competitive alternative, current system, current business process]

Our product [statement of primary differentiation and advantages of new product]

Here is a sample vision statement for the Chemical Tracking System, with the keywords in boldface:

For *employees* ***who*** *want to order meals from the company cafeteria or from local restaurants online,* ***the*** *Cafeteria Ordering System* ***is*** *an Internet-based and smartphone-enabled application* ***that*** *will accept individual or group meal orders, process payments, and trigger delivery of the prepared meals to a designated location on the Process Impact campus.* ***Unlike*** *the current telephone and manual ordering processes, employees who use* ***our product*** *(the Cafeteria Ordering System) will not have to go to the cafeteria to get their meals, which will save them time and will increase the food choices available to them.*

6. Advantages/Benefits of Proposed System

This section explicitly mentions the advantages and benefits of the proposed system. In other words, it is required to discuss advantage of the proposed solution to the existing problem. Generally, **5-7 advantages** need to be mentioned.

7. Scope

Write down the scope of your project in a paragraph. Briefly define the main functionalities of the proposed project. Scope defines the **boundaries and range** of the proposed solution, that what would be the part of your project. Write down in logical flow with consistency.
(Usually in 14-18 sentences)

8. Modules

Write down the modules of the proposed project.
Each module should **highlight features**, using bulleted/numbered notation.
When developing both a mobile app and a web app, group the modules according to the system types, such as, Client Web App, Client Mobile App, Admin Web App etc.

8.1 Module 1: Module Name

Brief description…
[List of features]

8.2 Module 2: Module Name

Brief description…
[List of features]

Example:

Module 1: Order Meal
FE-1: Order and pay for meals from the cafeteria menu to be picked up or delivered.
FE-2: Order and pay for meals from local restaurants to be delivered.

Module 2: Menu Operations
FE-1: Create, view, modify, and cancel meal subscriptions for standing or recurring meal orders, or for daily special meals.
FE-2: Create, view, modify, delete, and archive cafeteria menus.
FE-3: View ingredient lists and nutritional information for cafeteria menu items.

9. System Limitations/Constraints

Write down the limitations and constraints of the proposed project.

Example:

LI-1: Some food items that are available from the cafeteria will not be suitable for delivery, so the delivery menus available to patrons of the COS must be a subset of the full cafeteria menus.
LI-2: The COS shall be used only for the cafeteria at the Process Impact campus in Clackamas, Oregon.

10. Software Process and Design Methodology

Write down your adopted software methodology/software process that will be used for project development. Also, mention why you have chosen this methodology. The rationale of selecting the methodology should be clearly justified. **May be 10-12 sentences are sufficient.**

- Mention the software process methodology you will use for your project e.g., Incremental process method.
- Also Mention the software design methodology you will use for your project e.g., Object-oriented Methodology, or Procedural methodology
- Obviously, the choice of design methodology will affect choice of tools and technologies.
- Choice of methodology will affect nature of design (SDS document later on).
- Choice should be made depending on your expertise and your needs, e.g., most simulation and device level software can only be programmed in procedural languages.

11. Data Gathering Approach

Write down information and requirement gathering approaches for proposed project e.g., Interview, Questionnaire etc. [Usually 3-5 sentences]

12. Concepts

Mention the concepts that you will learn while doing the targeted project. For example: Augmented Reality, Virtual Reality, Algorithms, API''s Code injection, Closures, VI technique etc. Not more than 4 sentences for each of the concept. It is expected to briefly mention at least 3-5 concept.
The following is a general template to discuss each of the concept.
Concept-1: Concept Name E.g. Augmented Reality (Briefly give the overview of concept with respect to the targeted project).

13. Tools and Technologies

Mention all the hardware/software tools and technologies with version number which will be used in implementation of the project. Write about the APIs, language(s), SDK(s) etc. which you will use for implementation.

Example:

Table 2: Tools and Technologies for Proposed Project

	Tools	Version	Rationale
Tools and Technologies	Visual Studio Code	1.59	IDE
	MongoDB	5.0	DBMS

	Firebase	9.12.1	DBMS
	Adobe Illustrator	CSC 6	Design Work
	AR Core	1.24.0	AR SDK
	MS Project	2016	Project Management
	MS Word	365	Documentation
	MS Power Point	365	Presentation
	MS Visio	2013	Diagram Creation
	Figma	1.7	Mockups Creation
	Technology	**Version**	**Rationale**
	Python	3.9.0	Programming language
	JavaScript	2.2.0	Programming language
	Flutter	2.5	Framework
	TensorFlow	2.7.0	Library
	OpenCV	4.3.0	Library
	Node JS	14.17.4	Runtime Environment
	Express JS	4.17.3	Framework
	React	React 17	Library

14. Project Stakeholders and Roles

Write down the project stakeholders and their roles.

Table 3 Project Stakeholders for Proposed Project

Project Sponsor	Mention your project sponsor. Default option will be: COMSATS University Islamabad, Islamabad Campus
Stakeholder	Mention your stake holders with their roles and responsibilities. Default option will be • Students' names • Project Supervisor Name: Mr./Miss … • Final Year Project Committee: Evaluation of project

15. Module based Work Division

Table 4 Team Member Work Division for Proposed Project

Student Name	Student Registration Number	Responsibility/ Module / Feature
Student 1 Name	Student 1 Registration Number	For each module and respective feature, assign responsibility to a team member E.g. Mr. Ali (Module1- Feature 1-3) Augmented reality and Databases tasks.

16. WBS and Gantt Chart

Create the WBS and Grant Chart and provide estimated start and end dates of all proposed modules/tasks for each team member. Expand WBS to level 2 only.
Identify the dependencies (which tasks cannot be started/completed, until the dependent task is completed). WBS and Gantt chart can be created using MS Project.

Example is given in Appendix A.

17. Mockups

Insert minimum mockups (Usually 4-6 mockups) which show the major modules mentioned in the scope section of the document. **Do not include mockups for Login, Signup, Forgot Password, Contact Us, About Us etc.** If the project is a Web or a Smartphone Application, then include at-least three mockups from each part of the project.
Each mockup must give explanation about the screen.
3-4 Web mockups
3-4 Mobile Mockups
Total 7-8 (minimum) Mockups required.

NOTE: You can design mockup in any design tool for example pencil tool (https://pencil.evolus.vn/) or Balsamiq (https://balsamiq.com/) or the best one is https://www.figma.com/

Example is given in Appendix A.

18. Conclusion

Conclude this document and the targeted project. Usually, one to two paragraphs **(3-5 sentences).**

19. References

Mention the books, research papers, web links by following given guideline.

Book
Author(s). Book title. Location: Publishing company, year, pp.
Example:
W.K. Chen. Linear Networks and Systems. Belmont, CA: Wadsworth, 1993, pp. 123-35.

Article in a Journal
Author(s). “Article title.” Journal title, vol., pp, date.
Example:
G. Pevere. “Infrared Nation.” The International Journal of Infrared Design, vol. 33, pp. 56-99, Jan. 1979.

Articles from Conference Proceedings (published)
Author(s). “Article title.” Conference proceedings, year, pp.
Example:
D.B. Payne and H.G. Gunhold. “Digital sundials and broadband technology,” in Proc. IOOC-ECOC, 1986, pp. 557-998.

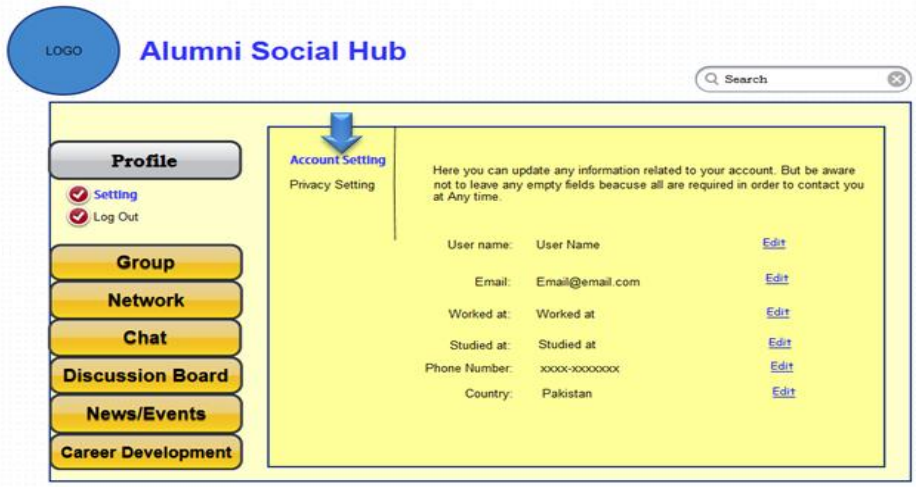
World Wide Web
Author(s)*. "Title." Internet: complete URL, date updated* [date accessed].
M. Duncan. "Engineering Concepts on Ice. Internet: www.iceengg.edu/staff.html, Oct. 25, 2000 [Nov. 29, 2003].

20. Plagiarism Report

Attach the Plagiarism report of your project scope document from library staff of Turnitin tool (http://turnitin.com)

Appendix A

Mockups



Description: This screen shows the admins' home page containing options for profile setting. To change setting user shall select the 'settings' link and account details will be opened in editable mode.

Description: This displays the home page of website with navigable links for 'About us,' 'News.'

WBS and Gantt chart:

A Work Breakdown Structure is a method of organizing and completing work in a project. With each increasing level, we increase the details. Basic structure is given in figure A-1, while detailed example is provided in Table A-1

Tabular Structure View of WBS

Level 1	Level 2	Level 3
Task 1		
	Subtask 1.1	
		Work Package 1.1.1
		Work Package 1.1.2
		Work Package 1.1.3
	Subtask 1.2	
		Work Package 1.2.1
		Work Package 1.2.2
		Work Package 1.2.3
Task 2		
	Subtask 2.1	
		Work Package 2.1.1
		Work Package 2.1.2
		Work Package 2.1.3

Figure A-1 Basic Structure of WBS

Table A-1 – Example of a WBS for software development project

ID		Task	Duration	Resources
1	**Analysis**		**8 d**	**Rita; William; Tyler; Wenger; Steve**
2		Requirement Meetings	4 d	Rita; William
3		Communication with Stakeholders	2 d	Rita; William; Tyler; Wenger; Steve
4		Document Current System	2 d	William
5		Analysis Finished	1 d	
6	**Design**		**18 d**	**Steve; Yvette; Zoe**
7		Design Database	5 d	Steve
8		Software Design	6 d	Yvette
9		Interface Design	3 d	Zoe
10		Create Design Specifications	7 d	Steve
11		Design Finished	1 d	
12	**Development**		**22 d**	**Tyler; Wenger**
13		Develop System Module	12 d	Tyler; Wenger
14		Integrate System Module	7 d	Tyler
15		Perform Initial Testing	3 d	Wenger
16		Development Finished	1 d	
17	**Testing**		**17 d**	**Vicky; Mike**
18		Perform System Testing	8 d	Vicky
19		Document Issues Found	6 d	Mike
20		Correct Issues Found	3 d	Mike
21		Testing Finished	1 d	
22	**Implementation**		**15 d**	**Tyler; Mike**
23		On-Site Installation	1 d	Tyler
24		Support Plan for the System	15 d	Mike
25	**Completion**		**9 d**	**Rita; William**
26		System Maintenance	9 d	Rita
27		Evaluation	9 d	William

WBS with Gantt Chart

ID	Task	Start	Finish	Duration	Progress	Priority	Resources
1	Analysis	2018-10-01	2018-10-10	8 d	98.9%	1	Rita; William; Tyler; Wenger; Steve
2	Requirement Meetings	2018-10-01	2018-10-04	4 d	100%	1	Rita; William
3	Communication with Stakeholders	2018-10-05	2018-10-08	2 d	95.5%	3	Rita; William; Tyler; Wenger; Steve
4	Document Current System	2018-10-09	2018-10-10	2 d	100%	3	William
5	Analysis Finished	2018-10-10	2018-10-10	1 d	0%	1	
6	Design	2018-10-11	2018-11-05	18 d	14.9%	2	Steve; Yvette; Zoe
7	Design Database	2018-10-11	2018-10-17	5 d	62.4%	1	Steve
8	Software Design	2018-10-18	2018-10-25	6 d	0%	2	Yvette
9	Interface Design	2018-10-26	2018-10-30	3 d	0%	4	Zoe
10	Create Design Specifications	2018-10-26	2018-11-05	7 d	0%	2	Steve
11	Design Finished	2018-11-05	2018-11-05	1 d	0%	2	
12	Development	2018-10-11	2018-11-09	22 d	22.5%	3	Tyler; Wenger
13	Develop System Module	2018-10-11	2018-10-26	12 d	41.2%	1	Tyler; Wenger
14	Integrate System Module	2018-10-29	2018-11-06	7 d	0%	1	Tyler
15	Perform Initial Testing	2018-11-07	2018-11-09	3 d	0%	2	Wenger
16	Development Finished	2018-11-09	2018-11-09	1 d	0%	3	
17	Testing	2018-10-29	2018-11-20	17 d	29.4%	4	Vicky; Mike
18	Perform System Testing	2018-10-29	2018-11-07	8 d	62.5%	3	Vicky
19	Document Issues Found	2018-11-08	2018-11-15	6 d	0%	4	Mike
20	Correct Issues Found	2018-11-16	2018-11-20	3 d	0%	1	Mike
21	Testing Finished	2018-11-20	2018-11-20	1 d	0%	3	
22	Implementation	2018-11-20	2018-12-10	15 d	0%	1	Tyler; Mike
23	On-Site Installation	2018-11-20	2018-11-20	1 d	0%	5	Tyler
24	Support Plan for the System	2018-11-20	2018-12-10	15 d	0%	4	Mike
25	Completion	2018-11-21	2018-12-03	9 d	0%	2	Rita; William
26	System Maintenance	2018-11-21	2018-12-03	9 d	0%	3	Rita
27	Evaluation	2018-11-21	2018-12-03	9 d	0%	1	William