Virtual University	**Assignment No. 02** **Semester: Spring 2022** **CS605 Software Engineering II** **Solution**	**Total Marks: 15** **Due Date: 22-08-202**

Assignment no. 2 covers Lec#23 to Lec#32.

Objectives of Assignment:

- You will learn the different concepts relevant to software engineering.

Uploading instructions:

- Your assignment must be in .doc format. (Any other formats like scan images, PDF, Zip, Rar, BMP, D etc. will not be accepted).
- No assignment will be accepted through email.

Rules for Marking:

It should be clear that your assignment will not get any credit if:

- The assignment is submitted after the due date.
- The submitted assignment does not open or the file is corrupted.
- Your assignment is copied from the internet, handouts, or from any other student (Strict disciplinary action will be taken in this case).

Assignment

Question No 1: **10 Marks**

You are required to choose a suitable name/term against each description given in the below table. You are required to write only index numbers (No alphabet) of name/terms in the below table against each descriptio
Note: Solution according to the above guidelines will be acceptable only.

Name/Terms

1. Reliable and safe
2. Software Safety
3. Quality Control
4. Safe but less reliable
5. Software Quality Assurance
6. Reliable but less safe
7. Software Quality Assurance (SQA) Group
8. Software Reliability

Note: Answer Sheet on next page (Scroll Down)

Answer Sheet

Note: Zero Marks if

- Create any other answer sheet format.
- Write any other alphabet (character) instead of the Numeric index number

Name / Terms	Descriptions
1.	Consider an old hedge clipper device consisting of one switch for its operation. The device starts immediately after the single switch is being pressed which assures its simplicity as compared to the modern hedge clipper devices which use at least two switches, and in addition probably some extra electronics. Both switches must be activated in order to operate the device, and the switches are arranged in a way that you would need both hands for activation. Additionally, modern hedge trimmers have a soft start which inherently serves as a kind of announcement for the operator. The downside effect of the modern ones is that it involves more electrical parts than the older ones. Based on the above data, what do you conclude about the safety and reliability of older hedge clipper devices?
8.	Consider constructing software for operating an automated door control system. One of the requirements is that, whenever the open or close button is pressed, the door should instantly respond accordingly, with a failure rate of less than 0.01%.
1.	Consider a scenario of level/grade crossing which is being handled by three independent but redundant controllers. Each controller would be able to handle the crossing on it's own. Under normal conditions, all three controllers would produce identical output signals from the same input data. If one controller

		fails, there are still two controllers left producing identical output signals, and therefore the system would still be able to keep the level crossing in working state. The failure of one redundant controller can be tolerated because two out of three controllers are still able to provide identical signals for accurate crossing.
	4.	Consider a smoke detector device placed in a building which produces many false alarms. As this device is producing many false alarms which means it announces dangerous situations while in reality everything is normal. The sensor element of this smoke detector may be too sensitive, and therefore a slight sensitivity reduction may improve its performance. What do you conclude about the safety and reliability of this device?
	2.	Consider constructing software for operating an automated door control system. One of the requirements is that, when the door is moving down and there is an object in its path, the door should halt immediately from moving downwards.
	3.	Working according to its basic principle is to minimize the change or variation as much as possible.
	5.	When we tend to apply these principles, processes, and practices resultantly it will increase the overall cost of the project, is far from the reality, and is actually considered a myth.
	7.	Performs quality assurance planning, oversight, record keeping, analysis, and reporting. Identifying documents to track deviations from the process and verify that corrections have been made.
	4.	Consider a text/document processing application that contains a lot of bugs and fails multiple times during its operation, on the other hand, this failure of the software does not usually cause any significant damage or financial loss.
	1.	Consider an old hedge clipper device consisting of one switch for its operation. The device starts immediately after the single switch is being pressed which assures its simplicity as compared to the modern hedge clipper devices which use at least two switches, and in addition probably some extra electronics. Both switches must be activated in order

		to operate the device, and the switches are arranged in a way that you would need both hands for activation. Additionally, modern hedge trimmers have a soft start which inherently serves as a kind of announcement for the operator. The downside effect in the modern ones is that it involves more electrical parts than the older ones. Based on the above data, what do you conclude about the safety and reliability of modern hedge clipper devices?

Question No 2: **05 Marks**

Consider a sample software project having two main phases.
Each phase consists of three main tasks:
Requirements, design, and development.
These steps must be performed sequentially. Requirements for phase two can begin immediately on completion of the requirements task for phase one, but the design for phase two must await satisfa development of the phase one design task. Requirements task is expected to take 4 weeks for phase one, a weeks for phase two, while the design is expected to take 3 weeks for phase one and 2 weeks for phase Development is expected to take 2 weeks for both phases.

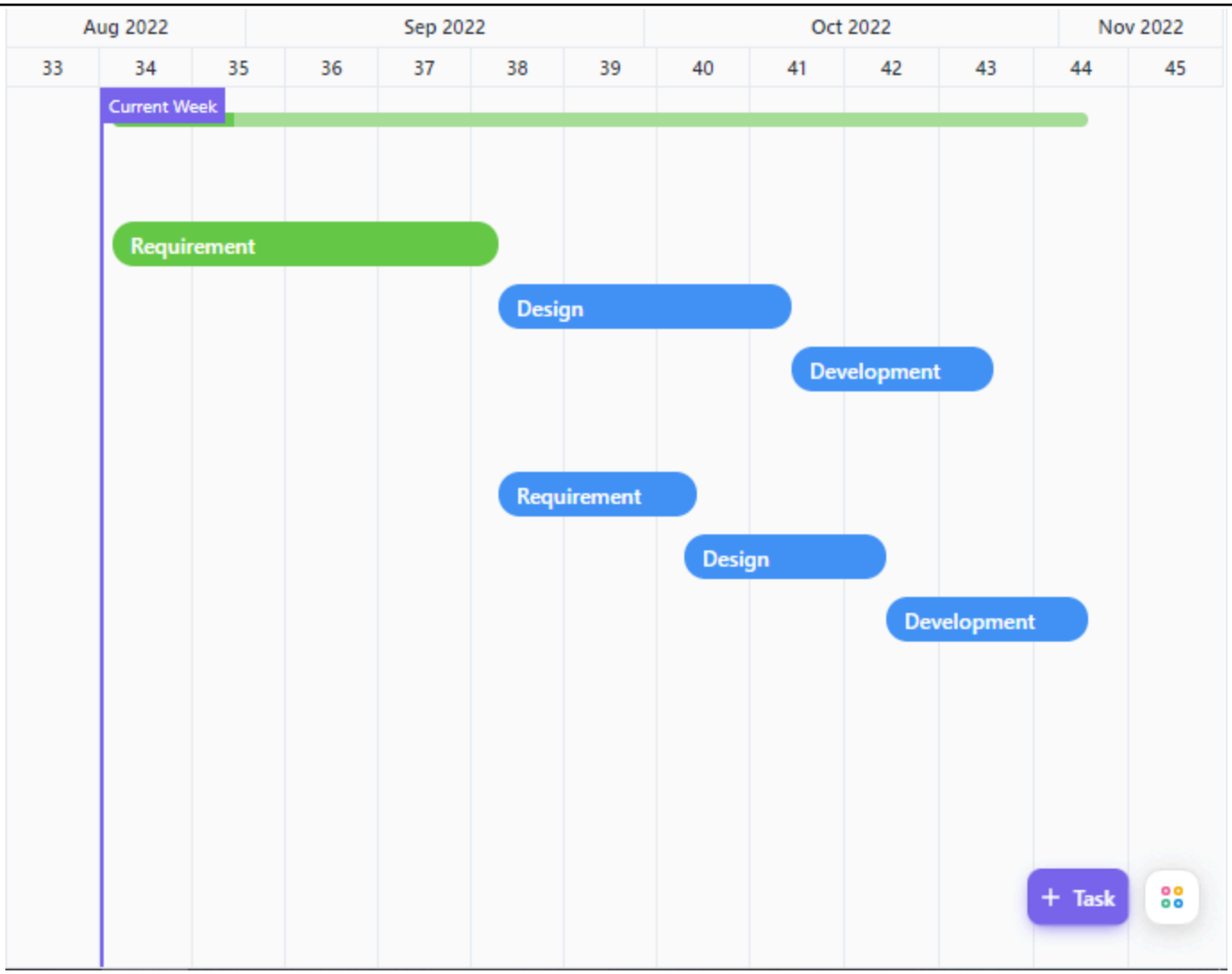
Your task is to develop a Gantt Chart based on the above-mentioned scenario. After Developing it, you ha submit a screenshot of the drawn Gantt chart. The screenshot must include the current date and time.

The recommended link for creating the required Gantt chart is given below you need to open the given li any browser on your PC. After logging in you can create it freely without any cost/charges.

Link to the Online Tool for creating Gantt Chart:

Login (clickup.com)

Paste your screenshots here:



Note: You can develop the required Gantt Chart as asked in Question #2 using any freely available/unpaid to your choice.

Don’t forget to subscribe our channel

Deadline: Your assignment must be uploaded/submitted on or before 22-08-2022