1. Embedded Software:

Embedded software is application software that works inside a device such as a robot, washing machine etc to control its operation. It typically resides in the ROM

1. Linkers Function:

It  takes one or more [object files](https://en.wikipedia.org/wiki/Object_file) generated by a [compiler](https://en.wikipedia.org/wiki/Compiler) and combines them into a single [executable](https://en.wikipedia.org/wiki/Executable) file, [library](https://en.wikipedia.org/wiki/Library_(computing)) file, or another object file.

1. Layers from OUTSIDE most layer first:
   1. Computer Hardware: Keyboard, CPU
   2. Systems Software: OS, compiler
   3. Application Software: MS word, MS Excel, MATLAB
2. compiler, interpreter, compiler, interpreter,

Part 2

1. a. Various Phases:
   1. Initiation: Project charter, vision statement
   2. Requirements Gathering: BRD, project plan
   3. Design: Wireframes, architecture and design docs
   4. Implementation/development: help docs, java docs
   5. Test: test plans, integration test plans, test data doc,
   6. Maintenance: deployment and maintenance plan
2. Methodology: A set of principles

Model: Selected methodology/process

Framework: structure

Process: set of steps

1. Layered diagram
   1. Quality Focus: organizations focus to quality
   2. Process Model: glue that holds all layers and enables timely delivery
   3. Methods: how to do requirement analysis design, modeling, construction etc (framework)
   4. Tools: automatic or semiautomatic support for the process and methods, such as computer aided software design.
2. Sprint vs Backlog:
   1. Used in the In the Scrum method of Agile software development.
   2. The sprint backlog is a list of tasks identified by the Scrum team to be completed during the [Scrum](https://www.mountaingoatsoftware.com/agile/scrum) sprint. A sprint is a  repeatable work cycle, known as a sprint or iteration.
3. programming [in pairs](https://en.wikipedia.org/wiki/Pair_programming) is a key activity in XP.
4. Agile Methodoogy: It helps teams respond to unpredictability through incremental, iterative work cadences, known as sprints. Agile methodologies are an alternative to waterfall, or traditional sequential development. It is a group of [software development methods](https://en.wikipedia.org/wiki/Software_development_methodologies) in which requirements and solutions evolve through collaboration between self-organizing,[[1]](https://en.wikipedia.org/wiki/Agile_software_development" \l "cite_note-Collier_2011-1)[cross-functional teams](https://en.wikipedia.org/wiki/Cross-functional_team).
5. Software projects need to be managed to take care of proper resource allocation, budget constraints, to meet deadlines of delivery.

The management process is an engineering process to make it a systematic and organized process. It helps providing guidelines to how to design and manage complex engineering projects over their life cycles. Issues such as reliability, logistics, coordination of different teams, evaluation measurements, and other disciplines become more difficult when dealing with large, complex projects.

1. We presented the Adaptive software development , Incremental development and Dynamic software development model. All these are part of the Agile Methodology.

Dynamic software Dev: Dynamic systems development method (DSDM) is an [agile project delivery framework](https://en.wikipedia.org/wiki/Agile_software_development), primarily used as a software development method. DSDM fixes cost, quality and time at the outset and uses the MoSCoW prioritisation of scope into musts, shoulds, coulds and won't haves to adjust the project deliverable to meet the stated time constraint.

Incremental: The incremental build model is a method of software development where the product is designed, implemented and tested incrementally (a little more is added each time) until the product is finished. It involves both development and maintenance

Adaptive: Adaptive software development replaces the traditional waterfall cycle with a repeating series of ''speculate'', ''collaborate'', and ''learn'' cycles. This dynamic cycle provides for continuous learning and adaptation to the emergent state of the project. The characteristics of an ASD life cycle are that it is mission focused, feature based, iterative, timeboxed, risk driven, and change tolerant.

Other team members: Niharika and Rahul

1. VCS terms
   1. Repository: the database where your changes are tracked
   2. Working set: your local files with potential changes not yet in the repository
   3. Branching: make a copy of your entire repository and work on this in a private sandbox. We can then add changes back into the main portion of your source code.
2. Centralized vs Distributed
   1. Centralized: It uses a single true Source repository. Enables Checkout from that source, and then facility of user to add their changes to the centralized repository.
   2. Distributed: One repository is as good as any other. It merges from one repository to another. The repository that should be trusted is imposed from the outside by process.

if your project or organization wants centralized control, then used centralize repo. If your developers are expected to work all over the globe, without secure broadband connections to a central repository, then Distributed repo is needed.

Part 4:

1. It is used to maintain the integrity of the system and Identify all related parts of the system It contains information regarding how to control the changes of different system environment and rebuild a system from the start, as well as handle disaster recovery techniques.

Information normally stored in this doc includes: Database connection , Operating systems, IP address, port number, etc.

1. 2 types of the licesnse:
   1. have minimal requirements about how the software can be redistributed (BSD, MIT licenses)
   2. Aim to preserve the freedoms that are given to the users(GNU license)
2. Copyright license
3. UML stands for Unified Programming Language. It is not a programming language but a standard language for modelling software systems using a high layer OOAD abstraction.

Its merits: It lowers dev costs, working with new developer is easier, helps in decision making and mitigating risks.

Part 5:

1. MySQL is used is XAMPP.
2. A webserver is a computer program that accepts HTTP requests and return HTTP responses with optional data content. It can also be used to denote the computer system that performs the above operation. Web Application is an application that is served to the user by using a web server.

Eg: Web server, Apache Tomcat, JBoss EAP

Web application: Facebook, Twitter

1. Httpd is a software program that runs in the background of a web server and waits for the incoming server requests. The daemon answers the request automatically and serves the hypertext and multimedia documents over the internet using HTTP. HTTP itself is a set of protocols that provides guidelines for client-server communication using uniform interface such GET, PUT methods etc.

The ‘d’ stands for Daemon.

1. In server side processing the application receives the dynamic web page page request and performs the processing necessary to create the dynamic web page and sends the generated web page to the client

Client side involves some processing needs to be done by the browser, either to form the request for the dynamic web page or to create or display the dynamic web page.

Eg. Server side: PHP, ASP

Client side: JavaScript, MS Silverlight

1. Dynamic Web Pages: Dynamic web pages are those whose contents can change based on the user input and instant of time. Each website page does not actually exist but is created on the fly.

Static web pages: Static pages are pages that actually exist on the server. The code/contentfor each page is exists . Change must be made manually.

1. Server Stack: A server stack is the collection of software that forms the operational infrastructure on a given machine. An Example would be the MEAN stack that uses Node.js server engine along with MongoDB in the back end while the client end infrastructure is handled using AngularJS.

Optional Questions:

1. Stored as binary numbers
2. Assembly level language
3. 5 generations:
   1. Machine level
   2. Assembly level
   3. High level
   4. Very high level
   5. Natural level
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. LEAN Model
   1. LEAN model was first used by Toyota.
   2. It is a systematic method for removal of unnecessary things that exist in a manufacturing system.
6. CMM stands for Capability Maturity Model. Its purpose is to provide a benchmark for measuring Software process optimization. It is NOT a SW project management model.
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Yes a server stack can run without a client stack because, it is independent of the client stack as client stack will interact using HTTP protocol with the server.
10. CSS file is used for styling and layout of the web page. Html file can have multiple css file. Its advantage is to provide separation of concerns between the content of the page and its styling.
11. Stateless means the server does not contain any information regarding the clients of the system. It is decoupled from the clients. In stateful session between multiple HTTP requests of client-server, the server maintains information about the clients state.