**Problem Statement:**

CureMD decided to contribute in society by helping people to increase literacy rate. So, a project for online education is started where people can register for one to one session with teacher or enroll in video course. Student can attend course on the bases of self-pace but bound to cover whole curriculum of course during the max allocated duration. Course may have assignments, text content, Videos and quizzes. Student is allowed to register free, attend course, submit assignments and take quizzes. Student cannot enroll more than 6 credit hours at once and courses may have different credit hours as per HEC requirement. In case a course is offered by more than one teacher then student can enroll with any teacher of his choice and select the mode of study e.g online one to one session or prerecorded lectures.

On this forum teacher can edit content, upload videos, view and send messages through email, SMS to his students or block any student in case of malicious activities. Both teacher and students can update their profiles. Student will be awarded with certificate at the end of each successful completion that could be share on different social media platforms. In case of one to one session teacher will be marking assessment manually and enter it into system.

This whole system would be managed by Administration team of CureMD. That will have its own profiles and access rights. Administrator can block and suspend teacher or student after messaging and marking on the bases of severity. Can view the summary of all teachers and students registered in the system.

**Engineering road map:**

You have assigned as a software architect to make this project and has to ensure and follow all steps of SDLC to make this project e.g Requirement Engineering, Analysis, Design, Development and Testing.

# Requirement Gathering

Requirements elicitation (also known as Requirements Gathering or Capture) is the process of generating a list of requirements (functional, system, technical, etc.) from the various stakeholders (customers, users, vendors, IT staff, etc.) that will be used as the basis for the formal [Requirements Definition](http://www.inflectra.com/Ideas/Topic/Requirements-Definition.aspx).

Techniques that can be used include:

* **Interviews** - These are an invaluable tool at the beginning of the process for getting background information on the business problems and understanding a current-world perspective of what the system being proposed needs to do. You need to make sure that your interviews cover a diverse cross-section of different stakeholders, so that the requirements are not skewed towards one particular function or area.
* **Questionnaires** - One of the challenges with interviews is that you will only get the information that the person is consciously aware of. Sometimes there are latent requirements and features that are better obtained through questionnaires. By using carefully chosen, probing questions (based on the information captured in prior interviews), you can drill-down on specific areas that the stakeholders don't know are important, but can be critical to the eventual design of the system.
* **User Observation** - One of the best ways to determine the features of a system, that does not result in "paving the cowpath" (i.e. building a slightly improved version of the current state) is to observe users actually performing their daily tasks, and ideally recording the actions and activities that take place. By understanding the holistic context of how they perform the tasks, you can write requirements that will reinvent the processes rather than just automating them, and will ensure that usability is paramount.
* **Workshops** - Once you have the broad set of potential requirements defined, you will need to reconcile divergent opinions and contrasting views to ensure that the system will meet the needs of *all* users and not just the most vocal group. Workshows are a crucial tool that can be used to validate the initial requirements, generate additional detail, gain consensus and capture the constraining assumptions.
* **Brainstorming** - This is a powerful activity, which can be performed either in the context of a workshow or on its own. By considering different parts of the system and considering 'what-if' scenarios, or 'blue-sky' ideas, you can break out of the context of the current-state and consider visionary ideas for the future. Tools such as whiteboards or mind-mapping software can be very helpful in this phase.
* **Role Playing** - In situations where the requirements depend heavily on different types of user, formal role-playing (where different people take on the roles of different users in the system/process) can be a good way of understanding how the different parts of the system need to work to support the integrated processes (e.g in an ERP system).
* **Use Cases & Scenarios** - Once you have the high-level functional requirements defined, it is useful to develop different [use-cases and scenarios](http://www.inflectra.com/Ideas/Topic/Use-Cases.aspx) that can be used to validate the functionality in different situations, and to discover any special exception or boundary cases that need to be considered.
* **Prototyping** - There is truth to the saying "I don't know what I want, but I know that I don't want that!". Often stakeholders won't have a clear idea about what the requirements are, but if you put together several different prototypes of what the future could be, they will know which parts they like. You can then synthesize the different favored parts of the prototypes to reverse-engineer the requirements.

According to the requirement of my project I used following techniques from the aforementioned methods:

1. Interviews
2. Brainstorming
3. Observation

In the interview following questions were taken answers of:

1. Is one to one session restricted to one child per teacher only or would be an online class room?
2. Does the video lecture require any monitoring form the teacher?
3. How would the admin be able to mark the students or teachers?

By using brain storming, observation and extracting requirement from the client sent document following requirements were understood and noted down.

1. Student Side
   1. To be able to register free of cost.
   2. LogIn
   3. To be able to update his profile.
   4. To be able to take quizzes.
   5. To be able to submit assignment.
   6. To be able to attend courses.
   7. To be able to study from the teacher of his choice.
   8. To be able to choose the mode of study i.e. online or pre-recorded lectures.
   9. To be able to share his certificate on various social media platforms.
   10. To be able to select slots for the required course.
   11. To be unable to register in courses whose cumulative credit hours exceed 6 hours.
2. Teacher Side
   1. Can Edit the course content.
   2. Login
   3. Can Update his profile.
   4. Can Upload videos on the Website.
   5. Can View the messages sent to them by the administration.
   6. Can send message to his student via email or text message.
   7. Can block his student in case of malicious activity.
   8. Can add or adjust his slots.
   9. Can upload the assessment scores direct on the Website, in case of one to one
3. Administration
   1. Would have their own profiles: Login and access rights.
   2. Would be able to suspend or block both the teachers and students.
   3. Would be able to take actions against the illegal activities performed either by student or teacher; severity of the act would lead to repercussions proportional to the severity.
   4. Would be able to see how many teachers are serving and have they updated the course details or not.
   5. Would also be able to see how many students are enrolled and in which department are they enrolled.