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Project Scheduling

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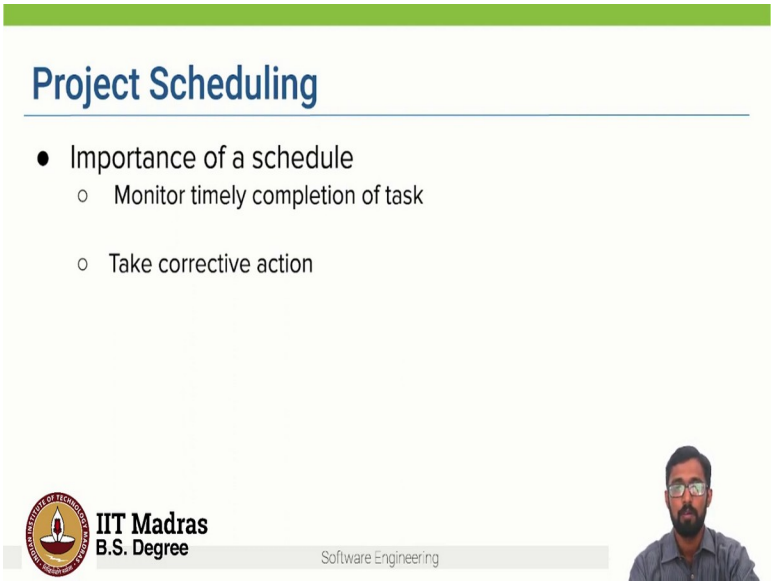

In the previous video, we looked at ways in which we can estimate the time and effort required to execute a project. So, having these estimations in place another important part of project management is to create a schedule for the project. So, why is this creating the schedule important? The schedule can help the project manager monitor the timely completion of each task. And let us say if we are falling behind, we can also take corrective action. And this enables the entire team to move forward.

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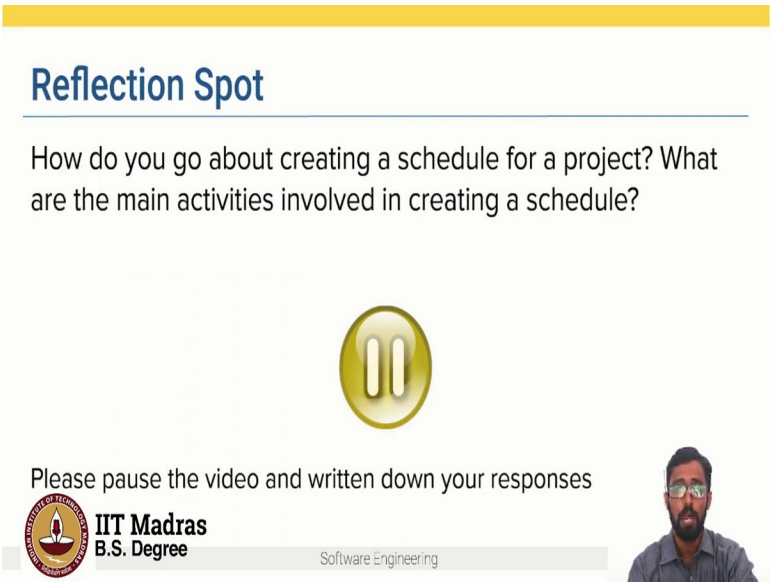

So, now let us reflect on this question of how do you actually go about creating a scheduled? So, what are the main activities involved in Project Scheduling? Can you think of some of these activities? You can pause the video and think about some activities before proceeding.

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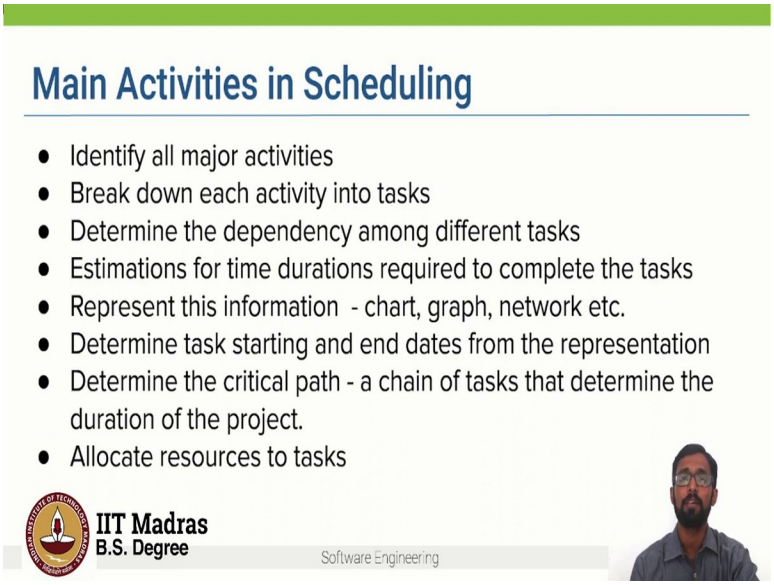

So, let us look at some of these activities. So, one is we have to identify all the major activities which need to be carried out to complete this software project. And once we have done that, we have to break down each of these activities into smaller tasks. And some of these tasks may be dependent on each other. So, we have to determine the dependencies among these different tasks.

So, for example, Task B can start only after task A has been completed. Or let us say Task B, C, D can happen in parallel. So, such dependencies have to be determined. And then we have to also estimate the time duration for each of these tasks. And having these dependencies and time duration, now we have to represent this information so that all members in the team will be aware of these dependencies and time durations.

And we will be looking at some representations in this video. Then we go more concrete and start, we think about the start dates, the end dates for each of these tasks. And then what we do is we determine the critical path. So, critical path is a chain of tasks that determine the duration of the project. So, we will be looking at what a critical path is. And finally, we allocate resources people or equipment or other things to these particular tasks. So now, let us look at how we can identify and break down each activity into tasks.

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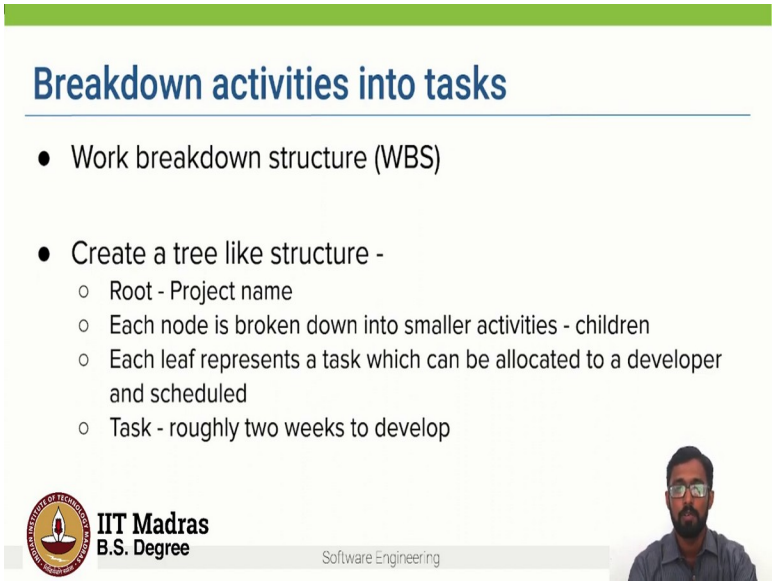

So, one way to do it is to create what is known as a work breakdown structure or a WBS. What it does is it breaks down the project activities into a set of tasks. And usually this is done by creating a tree like structure. So, the root will have the project name and each node is broken down into smaller activities, which are the children of the node.

And then finally, you come down to the leaf and each leaf it represents a task which can be allocated to a developer and which can be scheduled. And each task takes roughly two weeks to develop of development time. So, let us look at a work breakdown structure for the Amazon Seller Portal.

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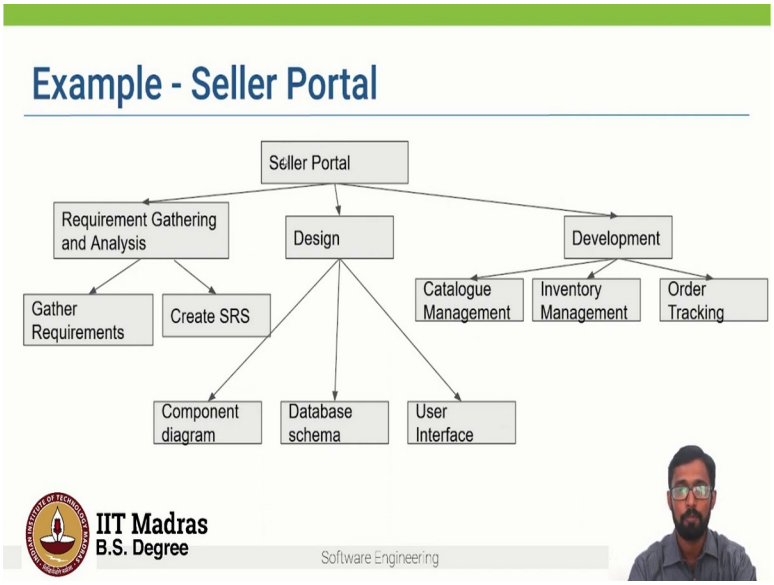

So, this is the name of the project which is the root and then you have different nodes for let us say requirement gathering, for design, for development. And each of the leaf as we saw earlier it represents a task which can be allocated to a developer. And so, for example, some people will start working on the component diagram, others will start working on the database schema. And if we look at just the design and the development, so, we can see that in the design you create the component diagram, the database, the user interface, and the development involve all the modules or the requirements, which we identified in previous videos.

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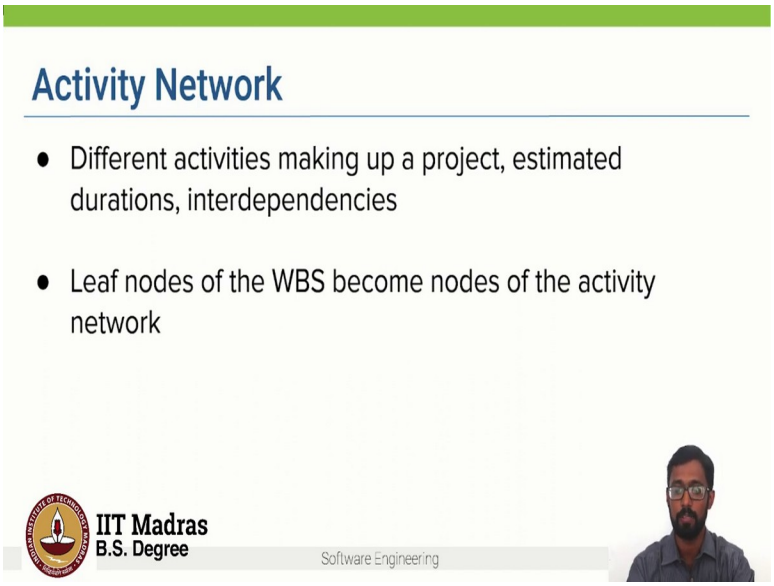

So, now that we know what these different tasks are, now, what we have to do is to create what is known as an activity network, which is nothing but now that we know what are the different tasks now we have to determine interdependencies, how are these different tasks dependent on each other, what are the estimated durations, how much time will it take. So, all this can be done by creating what is known as an activity network. And the leaf nodes of the work breakdown structure which we saw earlier, these becomes the nodes of the activity network.

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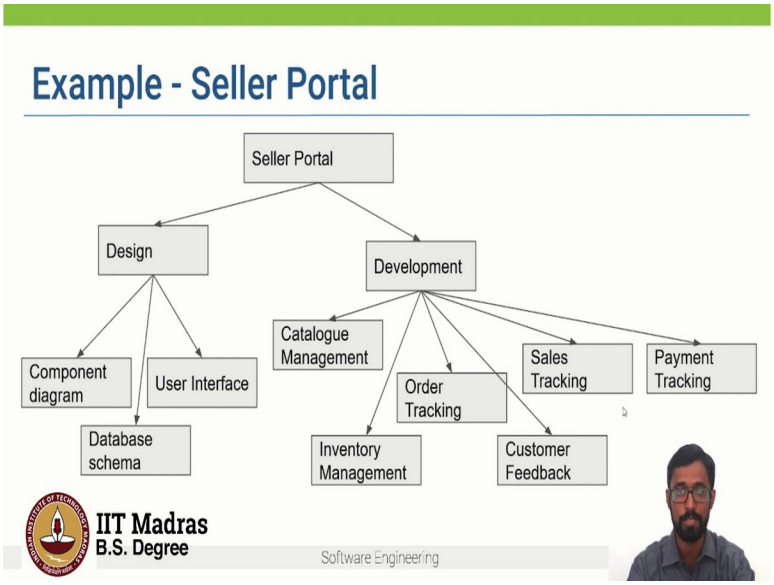

So, let us look at one example, the same example. So, this was the WBS or the work breakdown structure which we created. Now, all of these leaf nodes become part of the activity network.

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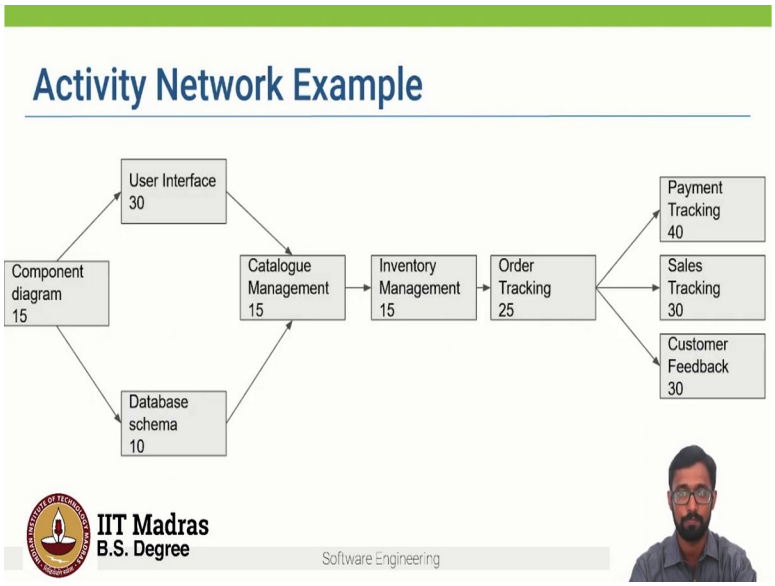

So, this is one example. And here you can see the arrows also determine the dependencies. So, if you see the catalog management, which is part of the development, that can start only after you create the component diagram, the user interface and the database schema. And so, this graph like structure, it determines the dependencies between different tasks. And it also tells us how much time or how many days are required for each task.

So, here you can see that catalog management has to be completed before inventory management can start and order tracking can start only after the inventory management is completed, but then we see that payment tracking, sales tracking, and customer feedback can happen in parallel. So, this is one example of an activity network.

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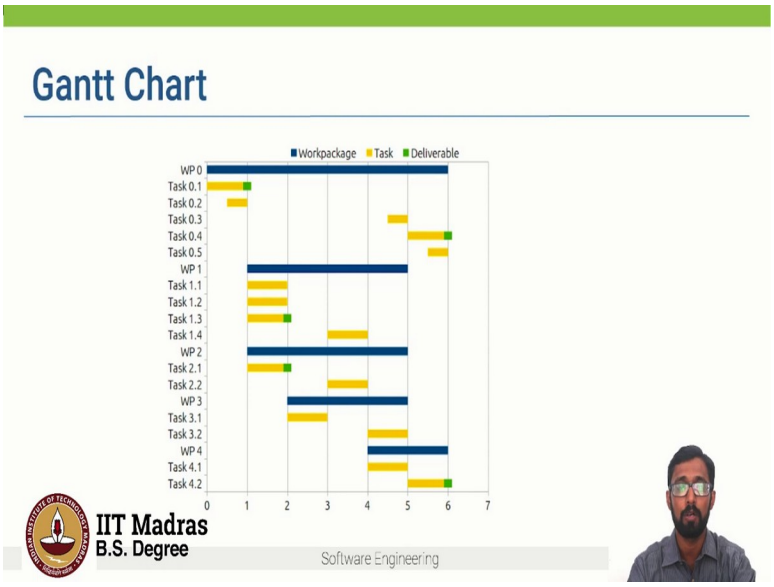

So, another way to represent this information is to create what is known as a Gantt chart. So, Gantt chart is a special type of bar chart. And you can see that each bar it represents an activity or a task and the length of each bar is proportional to the time duration planned for that activity.

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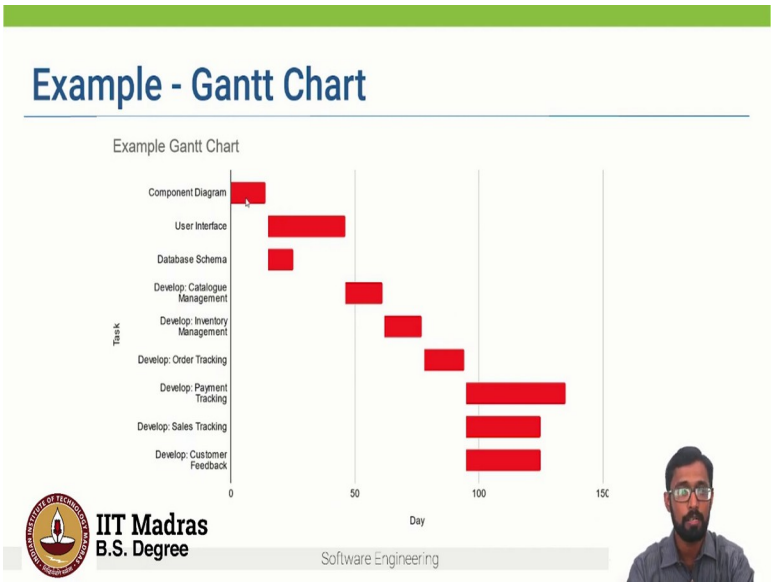

So, in the case of the Amazon Seller Portal, we saw that the user interface and database schema can start together parallelly. User interface takes longer than the database schema. Here, we see that these three modules the catalog management, inventory management and tracking can happen only one after the other.

But once order tracking is done, payment and sales and customer feedback all can happen in parallel. So, these representations provide the software manager as well as all the members of the team a visual representation of how the project is scheduled and what are the different tasks which need to be done.

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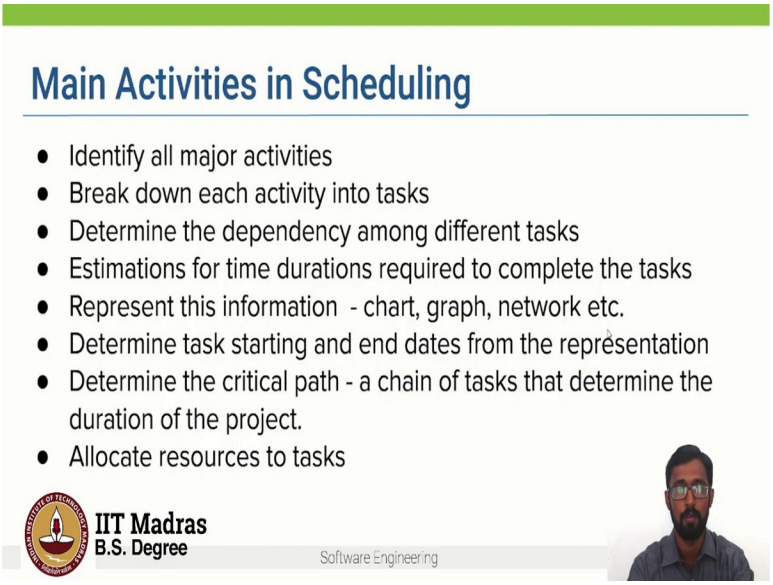

So, to summarize, in this video, we looked at the main activities and scheduling. First, we need to identify all the major activities and break down all these activities into tasks, which can be done by the work breakdown structure. And then we saw the activity network representation which can help us determine the dependencies and the time durations and representations like the Gantt chart can help us represent all of this information, so that all members in the team will be aware of the schedule of the project.