

Object-Oriented Analysis and Design
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Lecture – 27
Tutorial I
LMS

Good morning everyone. We are here to present the first tutorial of the courses object-oriented analysis and design. What we are going to do in this tutorial is that we are going to introduce a problem, the first level discussion of that problem between a client and a vendor. That is the first initial thing which happens for any object-oriented development. So, the problem is leave management system and this leave management system will be provided the all the requirements of this leave management system will be provided to the vendor by the client in this tutorial.

“Client – Vendor conversation starts”

Client: Hello, I am Tanwi, am acting as a client.

Vendor: Client yeah and I am Srijoni I am acting as a vendor. So, we will start the discussion then.

Client: Yeah so, I am coming from a company which need a leave management system to record the attendance and the leave of the employee. So, can you provide us automated software which can do this thing.

Vendor: Yeah fine I actually I have been sent by my company which has been contacted by your company to build this module.

Client: Hmm.

Vendor: I am here primarily to gather the requirements of you leave management system. So, we will start with this requirement analysis now. Firstly, can you give a brief overview of what you want your leave management system to do.

Client: Yeah actually in previously it was a manual task.

Vendor: Hmm.

Client: Employee used to emm give their attendance and and apply for the leave manually and the leave approval was also manually. So, we want a system by which we can use all this functionality by clicking a button only.

Vendor: Yeah.

Client: So.

Vendor: You want a automated leave management system.

Client: Yeah, we want a automated leave management system.

Vendor: So. Okay. we have some queries which we are going to ask you now. This is going to enable us to understand the system better because we need to understand all the requirements of the system to build it accurately for you. So, we will ask you the questions now.

Client: Yeah of sure.

Vendor: So, the first very important question about the system is that who will be using the system in your organization.

Client: All our employees are going to use the system.

Vendor: Okay, so are there any categories of your employees like they will be having some different access rights in the system like some may be doing something, some may be doing another functionality.

Client: Yeah.

Vendor: Okay.

Client: We have these categories.

Vendor: Okay.

Client: In the base level, we have executive.

Vendor: Okay.

Client: Executive employee can apply for leave only and they have they will give attendance. That's it.

Vendor: Okay.

Client: And then there is lead.

Vendor: Okay.

Client: Lead can approve the leave.

Vendor: Okay.

Client: Okay and the manager. Manager can credit, debit and adjust leave of the employee.

Vendor: Okay.

Client: And also, can approve the leave.

Vendor: Okay so what I understand that there are mainly three categories of employees in your organization.

Client: Yeah.

Vendor: Who will be only using this system to request for leaves and to give daily attendance.

Client: Yeah.

Vendor: The next level is lead and that the leads will be able to approve the leave of an employee of the

executive who is reporting to that lead and then above another level is a manager who will also be able to approve the leave and may be do some more functionalities.

Client: Exactly, exactly.

Vendor: And so, I think the leave and the manager all will be doing the the other task which the executives are allowed to do, I mean they will be.

Client: Yes absolutely.

Vendor: So, they will raise their leaves through the system and do whatever the employees are doing, the executives are doing but apart from that they have some extra responsibilities.

Client: Yes.

Vendor: And and obviously that is building up like for example for leave you have some extra responsibilities and then the managers will have all the responsibilities of the lead as well as some extra rolls which they want from the system. so kindly can you just know summarize what you actually wanted every category of employees to do.

Client: Yes, Yes, I have a written document let me look into it. Em a employee can can record daily attendance okay.

Vendor: Okay.

Client: Request for leave, cancel and approve leave, not yet avail.

Vendor: Okay.

Client: And avail a leave if it is approved only.

Vendor: Okay.

Client: Check and export own leave status for a period.

Vendor: Okay.

Client: This is the this is the functionality of employee.

Vendor: Okay.

Client: Okay, on top of it, a lead can approve or regret a leave, request from an executive.

Vendor: Okay.

Client: Okay.

Vendor: Okay.

Client: And revoke and approve a leave from of an executive.

Vendor: Okay, okay, okay.

Client: And manager is on top of lead.

Vendor: Okay.

Client: Okay so manager has some other permission also like credit, debit and adjust leave for

employee.

Vendor: Right.

Client: And perform administrative functions.

Vendor: Okay, okay. So, which means that just to summarize and understand this is one major thing and your organization, we need to understand the employee responsibilities.

Client: Hmmm.

Vendor: And the functionalities they want from the system. So, your base level employees that is the executives they want around five functionalities from the system.

Client: Yes.

Vendor: And the lead wants these 5 functionalities and on top of it, they will be having 2 extra functionality.

Client: Yes, Exactly.

Vendor: To approve and to revoke any approved leave and the manager will have all these functionalities, on top of it they will also require some extra functionalities like crediting, debiting.

Client: Yeah.

Vendor: Leave adjusting and all these things.

Client: Yes.

Vendor: Okay so this is a detailed document, we will take it from you like but we understand the organizational structure like what responsibilities they would be having and what functionalities they would be wanting from this system. Okay, so now we have some questions about the leaves like all leaves are the same?

Client: No no no.

Vendor: Okay okay okay. So, do you have many categories of your leaves.

Client: Yeah.

Vendor: So like can you tell me how many categories.

Client: Yeah, we have 7 categories of leaves.

Vendor: Okay Okay.

Client: So.

Vendor: And can you name them?

Client: Yeah, Casual leave, earn leave, Duty leave, Sick leave, Maternity leave, Parental leave and leave without pay.

Vendor: Okay so these are the 7 types of leave which you give to your employees at present.

Client: Yes.

Vendor: So like can you just briefly describe any one of the leave may be a casual leave like what are the.

Client: Yeah.

Vendor: Features of those leaves on.

Client: Okay, so emm 10 causal leave are available in a calendar year. Okay, all causal leave is credited to an employee on first January. Okay. For employee joining in the middle of the year, the number of casual leave are propagated. Casual leave cannot be carried over in the next year. More than 2 casual leave cannot avail at a time. Okay and casual leave do not pre do not need pre-approval but must approve within 2 days of availing.

Vendor: Okay, so listening to your description about your leave, I think I have noted down some important basic point who based on which I can I think you can describe a leave. So, for example like if we do this thing for a earn leave now.

Client: Hmm.

Vendor: I will be asking you these basic points.

Client: Hmm.

Vendor: And you can reply me what the earn, for what earn leave falls for.

Client: Hmmm.

Vendor: And then we we maybe we can you know finalize these basic points based on which you will differentiate a leave.

Client: Yeah sure.

Vendor: For example, emm like can you tell me what is the duration of leave for an earn leave.

Client: Yeah, it is 15 here.

Vendor: Okay, Okay. So, this is a distinct feature of any leave that you will be having specific duration.

Client: Hmmm.

Vendor: Okay. This is one feature which we fix it now. Is the leave clubbable like in causal leave I think it was not clubbable? So, earn leave, it is clubbable.

Client: Yeah it is clubbable, casual leave is not clubbable emm rather than casual leave, all other leaves are clubbable.

Vendor: Okay, okay, okay. So apart from casual leave, all your other leaves are clubbable.

Client: clubbable yeah.

Vendor: Okay like if there is any holiday which is coming in between the leave duration taken, so will it be exempted for.

Client: Yes.

Vendor: For earn leave.

Client: Yes, it is exempted from for earn leave. But it is not exempted for casual leave.

Vendor: Okay, Okay.

Client: For all other leave, it is exam exempted.

Vendor: Okay, okay, so so this is an exemption policy which you qualify your leaves.

Client: Yeah.

Vendor: Okay does it have to be pre-approved? I think casual leave doesn't need to be pre-approved.

Client: Yeah but earn leave.

Vendor: Okay.

Client: earn leave need to be pre-approved.

Vendor: and.

Client: And all other leave except sick leave and parental leave, all other leaves are emm preapproved.

Vendor: Okay okay, all your leaves are pre-approved and now like your leaves get carried over or like accumulated like earn leave, does it get carried over?

Client: Yeah earn leave gets carried over ehh and but not not all leaves are carried over.

Vendor: So, what is the encashment policy for an earn leave.

Client: Yeah, so yeah it is also written in my document. Okay, 1 and 1.25 25 earn leave is credited on the completion of a full month service. Okay.

Vendor: Okay.

Client: So earn leave can be carried over to the next year and accumulate up to 24 45 days. Okay.

Vendor: Okay.

Client: Once it crossed 45 days, then on the completion of the current quarter 30 days are encashed and paid to the employee.

Vendor: Okay, so I understand. So, this is your encashment policy which and obviously the leaves which will be allowed to be encashed will have a specific encashment policy and obviously I think you do not need any certification for earn leave.

Client: No no no, no certification is required for earn leave. But certification is required only for sick leave. Okay.

Vendor: I mean you need your medical certificates for them.

Client: Yeah.

Vendor: Okay. Fine. So, I, like what I understand is that way I.

Client: Sick leave.

Vendor: Yeah, yeah.

Client: There are some other leave also which needs certification.

Vendor: May be parental leave.

Client: Yeah parental leave and maternity leave.

Vendor: Yeah whichever there is a medical.

Client: Medical issue yeah.

Vendor: Medical issue involved, you will be needing certificates for that. Okay so now what I gather from your requirements is that your leaves, your you have 7 types of leaves in your organization and all these leaves, they have some basic features okay.

Client: Hmm.

Vendor: And like these basic features like which we discussed now, whether it is clubbable or whether it is holiday exemption, whether it can be pre-approved, whether it can be carried over, whether it can be encashed, whether it needs certificates. So, based on these basic points, we can actually describe your leaves.

Client: Yes.

Vendor: And differentiate between them. So, what we will do is that kindly we if you could give us any more document if I have missed out on any of your basic points and if you have any more.

Client: The written document which I have, I will give it to you.

Vendor: Yeah, okay so that would actually help us to understand the nature of your leaves because based on these basic points we can also differentiate between the leaves because this is important for us to build it, build these needs into the system because they are going to behave differently. So, we have to understand the behavior. Okay.

Client: Okay.

Vendor: So, based on that we can I mean give you a proper system. so I understand that you are 2, you have 2 major modules of your leave management system. One is the employee module where actually we have understood that there are 3 categories of your employees. They will be having different responsibilities; some responsibilities are common all throughout and some have extra responsibilities. So, these responsibilities which will be built as a functionality in our leave management system.

So, they will be having access to extra functionalities and the data on which it is going to work is the leaves okay.

Client: Yeah.

Vendor: So, the behavior of the leaves are been, we just now described like how are the leaves going to behave, what are the different types of leaves. Okay, how do we differentiate between the leaves

because they are going to enter the leaves, so we need to understand behavior and give them options to you know fill in the required detail which we require. So, I think this is a fair enough discussion, so kindly can you share with us the document.

Client: Yes, I will share the document with you and you gave me the specification whatever you have extracted from our written document.

Vendor: Yeah, yeah sure we will give a.

Client: And we check whether you have missed out anything.

Vendor: Yes yes, once we get a formal document from you, we will do the requirement specification document and provide it to you. Thank you very much. Yeah.

Client: Thank you Srijoni.

Vendor: So, good, Hello everyone. So, what we discussed here was the requirement gathering of leave management system.

So, hi I'm Srijoni, I'm a TA of this course and am Tanwi, I am also a TA of this course and we will be sharing with this document which we have written down like basically yeah to you know explain the leave management system. We have everything written down, what we discussed. So, we will be sharing it to you for you know which you can refer and we are going to use this example all throughout the course like whenever we understand any aspect of object oriented systems, we are going to relate to this example.

Yeah. Okay. Yeah fine. Thank you.

Thank you.