Principles of Engineering System Design
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Lecture - 06
Team Development: Group exercises

We will continue the team building activity and team building team formation activities, what we discussed yesterday. So, today what we are going to do is to do some exercises, which will help you to understand the team building activity, and how the team building activity helps you to understand the team members and how to develop the relationship between team members using these team building activities.

So, yesterday we discussed about the team building activity, and we found that there are some specific characteristics for team building activities.

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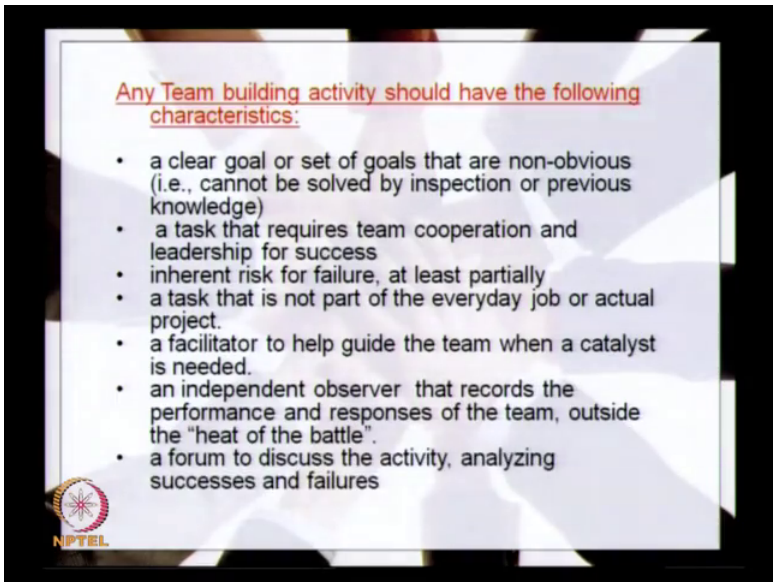

So, we discussed about that should clear goal or set of goals that are not obvious and a task that requires team cooperation and leadership for success; and inherent risk of fail risk for failure at least partially, then a task that is not part of the everyday job or actual project and a facilitator to help guide the team when a catalyst is needed, and an independent observer that records the performance and responses of the team outside the heat of the battle, and a forum to discuss the activity analyzing successes and failures.

So, what we are trying to do is to do exactly a similar task which is a team building activity, we will be having a task I will be giving you a task with a clear goal and there will be somebody to facilitate. So, one of your team members will be a facilitator and will be having an independent observer. So, Umesh or Vivek will be the observer, you will be observing the activity and analyzing successes and failures ok.

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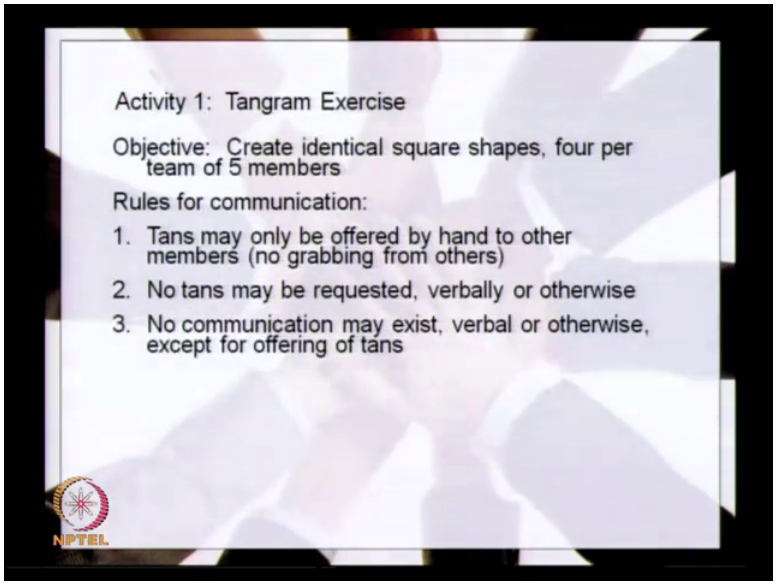

So, the first activity is going to be the tangram exercise, has you heard of tangram.

Student: (Refer Time: 01:50).

No. So, if you have not heard about it and you are not done it, then that is the best activity because you do not know about it and it is there is an inherent risk of failure in the sense that you are not able to complete that task. So, the rules for this tangram exercise basically what you need to do is to create identical square shapes, for per team of 5 members. So, you have to make a square shape using some tans. Tans are the small geometrical shapes. So, using these shapes you have to make a react as square shape; so the rules for communication.

So, I will be giving you 5 sets, which are mixed up together other pieces are mixed up. So, you do not know which piece actually goes into the square. So, you will have to work as a group. So, I will be giving you 28 pieces; so 7 pieces per square. So, all these 28 pieces are mixed up and then you need to separate them and then make a square. But

the conditions are that the tans may only be offered by hand to other members. So, you should not actually take a tan from other person, if we give you one you have you can take it ok.

So, otherwise you should not grab it from other person you should not ask for that also. So, if he feels that you need such a piece he will give it to you, otherwise if you feel that he needs another piece you can give that to him your partner. No tans may be requested verbally or otherwise, no communication may exist verbal or otherwise except for offering of tans. So, there should not be any communication other than exchange of tans. So, there is no verbal or otherwise communication except for offering of tans is that clear to you.

Student: Yes.

Now I want 5 members to come over here and then give you the pieces, then you can start I will give 5 of you can be here and I will give another set there also you can another 5 can work on that one . So, 5 members yes one lady come please. So, Umesh will be the facilitator or the observer here. So, please come and stand here, I will be here.

So, see there are 28 pieces in these two bags. So, you can take 7 each. So, one of you will be the facilitator. So, you will not be actually doing any work it will be one of you any one of you. So, you can decide who wants to be the facilitator.

Student: I will be.

Fine, so there is a facilitator for you now you have 28 pieces here, you can take 7 pieces each. So, any 7 and then you start making a rectangle sorry s square fine go ahead.

Student: (Refer Time: 04:37).

And another 5, if you want you can start there; they give the pieces to them. So, you can just follow the same instruction. So, 5 of you can sit together and then.

Student: (Refer Time: 04:49).

Or 4 of you can sit together this gives the back bench.

Student: (Refer Time: 04:50).

Just take it out.

(Refer Slide Time: 04:55)

Student: (Refer Time: 05:12).

I will give you 5 minutes time to start and to do it and if you are not able to do I will give you some clues, and then you can again go ahead with that. So, no communication not talking each one has to make one square. So, take 7 pieces.

Student: Only one square sir I mean.

Only once.

Student: (Refer Time: 05:33).

The identical squares; so all the 4 should have the same identical size of the square, you have to use all the pieces.

Student: (Refer Time: 05:42).

You should not ask for the tan, if you want you can give to others no not grabbing you are facilitator you should not take it.

Student: (Refer Time: 07:17).

I will also need to be had identical, everyone has to make the same size.

Ok.

Student: This is a square right (Refer Time: 08:35) this part is nobody give me anything.

Now, if you if that is the correct one then everyone should get the same size then it is correct.

Student: Ok.

Ok.

Student: Count the number of pieces.

You can actually have 7 pieces.

Student: 4, 5, 6, 7 its 7.

(Refer Slide Time: 09:01)

Ok.

Student: 6 (Refer Time: 09:05) 1, 2, 3, 4, 5, 6, 7 (Refer Time: 09:11).

This it cannot be.

Student: (Refer Time: 09:15).

An almost one it should be perfect one.

Student: (Refer Time: 09:16).

I can tell you there will be 5 triangles.

Student: (Refer Time: 09:20).

One square and one parallelogram.

Student: (Refer Time: 09:24).

So, now it probably you will be able to do it.

Student: (Refer Time: 09:28) three triangles.

Five triangles.

Student: 5 (Refer Time: 09:30).

Yeah.

Student: One triangle.

One square and one parallelogram.

Student: (Refer Time: 09:35).

Which not you should not take someone has to give you.

Student: (Refer Time: 09:50).

So, it is 5 triangles one square one parallelogram

Student: No (Refer Time: 10:12).

Five triangles one square, one parallelogram, that should make one.

Student: (Refer Time: 10:26).

Square.

Student: (Refer Time: 10:28).

In a group activity you should not work alone, you should look for others help or you should try to help others.

Student: (Refer Time: 10:54) we should not communicate at all.

We should not communicate you should not talk, but you should try to see what the help your partner needs and whether you can help him or not.

Student: (Refer Time: 11:15).

Do you need any more clues? Probably the next clue you will be a able to do each with the next one more clue.

Student: So.

Yes.

Student: (Refer Time: 12:03).

Use 5 triangles one square and one parallelogram any progress there.

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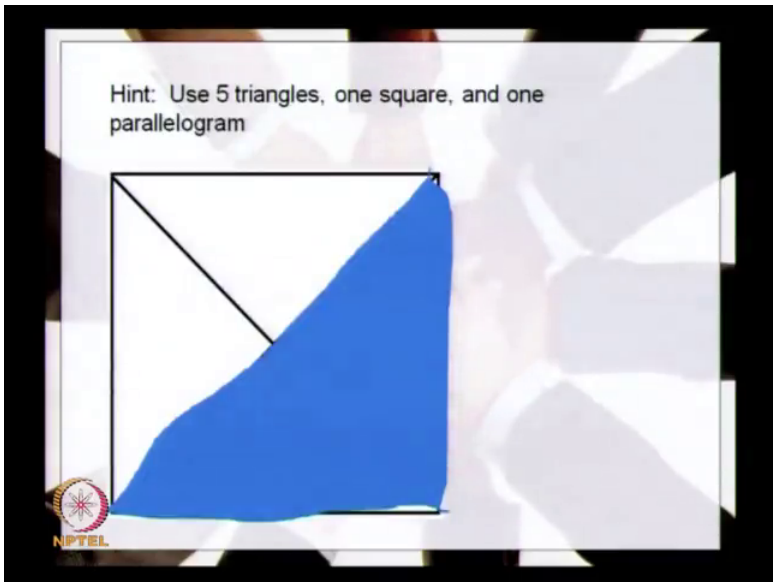

Student: (Refer Time: 12:20).

Not yet ok.

Student: (Refer Time: 12:22).

Probably I will give one more clue because we do not want to spend.

Student: (Refer Time: 12:32).

Too much time on this.

Student: (Refer Time: 12:36).

Look at here this one there are many ways to do it this is one of the ways to get rectangle a sorry the square. So, if you look at this, you will be able to start with that two triangles no more clues.

Student: (Refer Time: 13:50) will have (Refer Time: 13:51).

Yes.

(Refer Slide Time: 13:35)

Student: (Refer Time: 13:55).

I have I do not have any more sets, I will give you later I will give you another exercise we have one more exercise for you.

Student: (Refer Time: 14:12).

Done.

Student: I did it 8 pieces.

Eight pieces; so you are actually grabbing one from the other person.

Student: (Refer Time: 14:23).

You cannot use 8 pieces; then the other person would not be able to do it you have to use only 7 pieces. So, that is why others are not able to make because you have taken an extra piece.

Student: No took it right now.

Um you should be able to make it with 7 pieces.

Yeah.

Student: (Refer Time: 14:44).

You are almost there

Student: (Refer Time: 14:51).

Should I wait or should we will be go for the solution.

Student: (Refer Time: 15:15) wait a second sir.

Fine let us see.

Student: (Refer Time: 15:21) no (Refer Time: 15:22) it do not work not at all Refer Time: 15:47).

See here is a person who is almost there, but you are not helping him.

Student: (Refer Time: 15:55) there will be made to 8.

Other you will be make to 8 then it is not correct.

Student: This is (Refer Time: 16:03).

You want more time.

Student: Yes sir (Refer Time: 16:07).

They are almost finishing fine.

Student: (Refer Time: 16:15).

Good they are done it.

Student: (Refer Time: 16:37).

Done.

Student: (Refer Time: 16:43).

Good. So, how is it?

Student: (Refer Time: 17:00).

So, who helped others?

(Refer Slide Time: 17:00)

Student: Harish (Refer Time: 17:04).

He helped others and who was working on their own without helping anybody.

Student: (Refer Time: 17:10).

How can it be?

Student: He founded first (Refer Time: 17:15).

No before that one who was trying to change the tans.

Student: (Refer Time: 17:21) give me (Refer Time: 17:22) help this sir.

So he was working on his on.

Student: Yeah.

Then what is your observation?

Student: All are pretty fine have not observe.

Ok.

Student: (Refer Time: 17:34) may work Refer Time: 17:35).

What about that team who work for others please move to this side ok.

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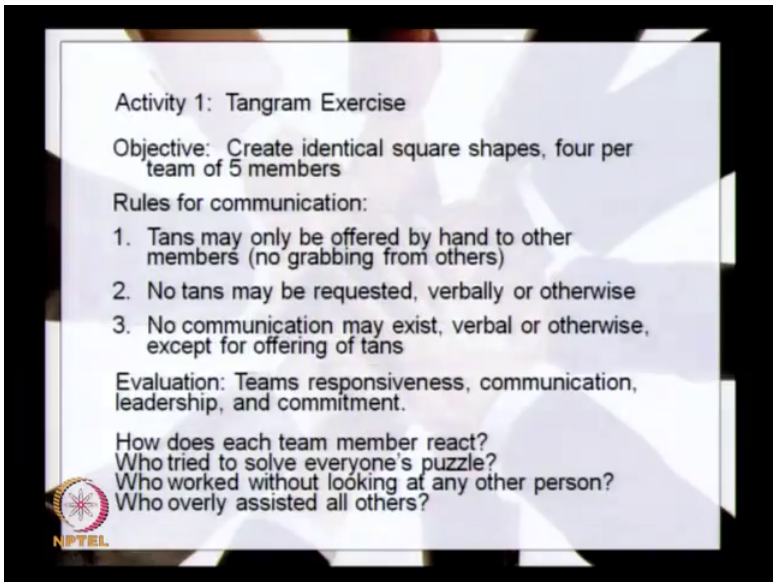

So, the questions are how does each team member react, who tried to solve everyone's puzzle, who overly assisted all others, who worked without looking at any other person

is there anybody like that who did not cooperate with others or he was just worried about his 7 pieces only ok.

So, these are the thank you very much. So, when we have a team activity we have to look at that, how the each member react for that particular problem and who is actually trying to help others, who work without looking at any other person these are basically to observe the people and how they behave. So, all these characteristics can be improved. So, just by doing this kind of exercise we will try to understand each, how the person who is the person who actually tries to help others, who actually wants to solve by himself. This actually will tell you the team composition and help you to improve the relationship at the later stage ok.

So, this was one exercise, which I think all of you enjoyed and we will do the one another say simple exercise it more fun.

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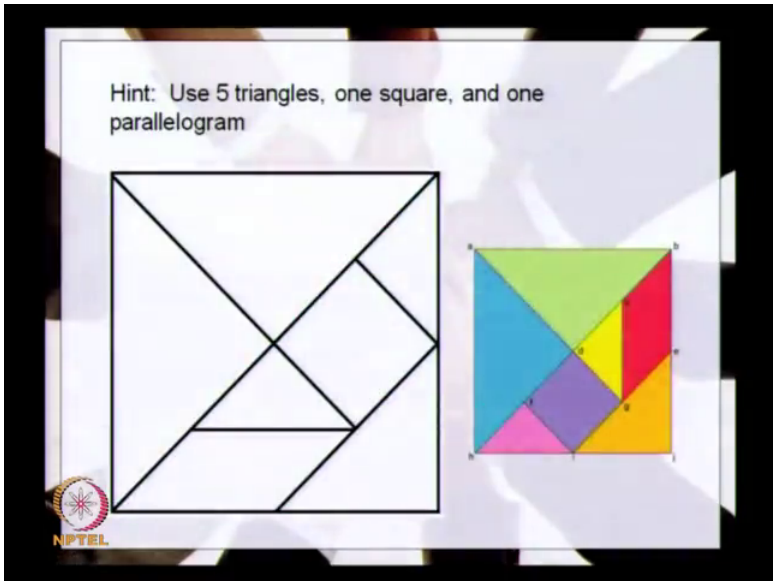

Actually this you can do in different ways. So, this is one solution this is another solution. So, we can have different ways of arranging the pieces, but still you will be getting the time then there are actually using this tan, if you go through the internet you will see let the lot of exercise can be done using tangram; you can make different shapes, you can have different geometrical shapes as well as some trees and birds and things like that ok.

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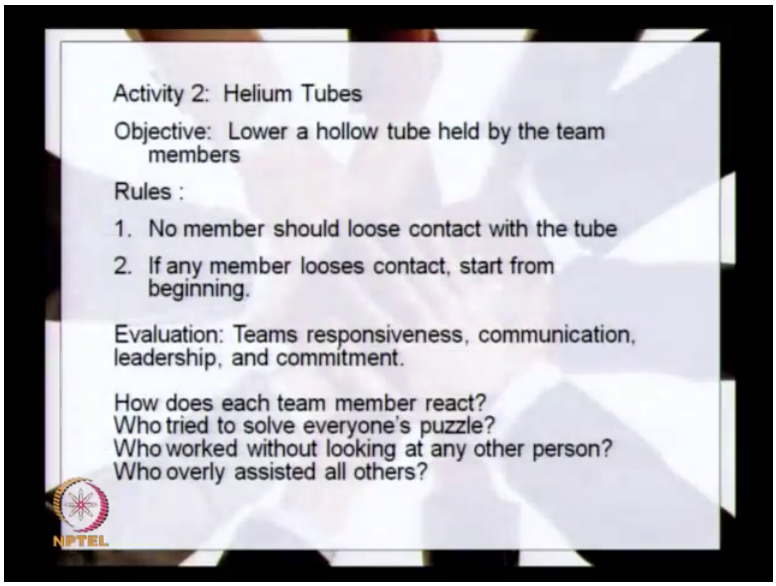

So, that was one exercise, we will do one more exercise this is known as helium tubes you know about helium right. So, what is the property of helium lightweight right? So, these tubes are actually filled with, there are two tubes here these are he filled with helium and if you try to lower this it will keep on going up right. So, I want 4 plus 4 8 people to come those who have done this exercise please do not come others, let others please come please come 4 plus 4.

Student: (Refer Time: 19:56).

Look at this what you need to do is, I will show you at one team you stand here two and two, two on this side and two one that side two come to this side facing each other stand there you two come this side and another two like that 4 no come this sides come stand here, stand here same way you also two and two ok.

Now, this stand to on this side, hold your finger like this and just touch the tube. So, one finger now you are finger there and now your finger here now your finger here balance it properly, if say if say no wait, do not do anything now just hold it let us see the position all of you are equally positioned to equally position just do not do not do anything just hold it like that. And the next team also the same way, stand two sorry two this side you come this side. Same way you hold just moves little bit away from the. So, that you do not heat them, just hold it no do not worry I will tell you what to do till then do not do anything ok.

What you need to do is to lower the tube do not start now, it will lower the tube and bring it back to bring to the ground. And you should never lose the contacts if one person loses contact; you have to start it again from the top. So, we have gabble see whether you are losing the contact if you lose the contact, you will have to start from again and Umesh comes, this said see whether anybody is losing the contact ok.

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So, the task is basically as a group you have to bring it down, down to the grounds without losing anybody's contact do not try to cheat if you lose contact you tell yes I want I lost contact. So, I want we want start again right.

Student: (Refer Time: 21:56).

Ok.

Student: (Refer Time: 21:58).

Clear.

Student: Yes sir.

Can you start?

Student: Yes sir.

Starts what is happening.

Student: Do not know (Refer Time: 22:12).

Do not loose contacts.

Student: (Refer Time: 22:17).

If you lose contact you will have to start again, you should hold it properly do not put like that.

Student: (Refer Time: 22:22).

Hold it properly.

Hold it properly our helium, helium is acting see it going up.

Start again.

Student: (Refer Time: 22:30).

Start going down.

Student: (Refer Time: 22:45).

You hold your hand straight (Refer Time: 22:50) straight.

Only one finger, ok.

Student: (Refer Time: 22:53)

It is going up.

Student: (Refer Time: 22:57).

That is why helium is there know I told you that is its filled with helium that is why it is going up see its going up.

Student: (Refer Time: 23:05).

Only one finger.

Student: I will knowing you know (Refer Time: 23:08).

Come on you have to take it.

Student: Going up (Refer Time: 23:12).

Going up if you lost contact then you have to start again.

Student: (Refer Time: 23:26).

You can communicate here no problem you can talk.

Student: (Refer Time: 23:30).

Only thing you should not loose contact.

Student: Do not (Refer Time: 23:36).

No you lost contact.

Student: (Refer Time: 24:06).

You lost contact do not cheat; you can do it you need a little bit of coordination.

Student: (Refer Time: 24:21) stand there Refer Time: 24:22).

Ready one two three go down.

Student: (Refer Time: 24:29).

So, we are to remove the helium from inside.

Student: (Refer Time: 24:42).

No, not that way you have to hold it properly, just and touching only see such a simple exercise you are for energetic guys.

Student: (Refer Time: 24:52).

So, it is going up, hey do not put it down only one finger.

Student: (Refer Time: 25:27) [FL].

Want to give up want to give up or

Student: (Refer Time: 25:055) one more time (Refer Time: 25:56) we will (Refer Time: 25:57) do not do not (Refer Time: 25:58) here.

I will give them one more minute.

Student: Sir.

To complete then we will haves for another team ok

Student: (Refer Time: 26:10).

Both of both the teams one minute more.

Student: [FL] (Refer Time: 26:51).

Thank you very much.

Student: Sir.

Those who are not done both the exercises other it is only, 4 of you want to come back.

Student: (Refer Time: 27:01).

Come.

Student: (Refer Time: 27:03).

Come fast come fast.

Student: (Refer Time: 27:05)

I will give you 2 minutes to do that. Now you know what to do only this way. So, do not put it finger like this ok one of you can put here like that ok.

Student: (Refer Time: 27:16).

Yeah.

Student: (Refer Time: 27:20) [FL]

Yes.

Student: [FL].

Ok.

Student: (Refer Time: 27:30).

Do not lose contact.

Student: (Refer Time: 27:33).

Whom yourself (Refer Time: 27:42).

Ready go.

Student: Do not to move [FL].

One minute more for you.

Student: (Refer Time: 27:49) use that (Refer Time: 27:55) push up (Refer Time: 27:56) go down go down go down Refer Time: 27:58) wait (Refer Time: 27:59).

So, Vivek they will do it or we will stop.

They will be doing.

Student: (Refer Time: 28:40) [FL].

Ok.

Student: [FL] slowly [FL] (Refer Time: 28:48).

These are not they will moving.

Student: (Refer Time: 28:50).

In the same position.

Student: (Refer Time: 29:08).

Well last two minutes.

Student: (Refer Time: 29:20) [FL] slowly (Refer Time: 29:22) [FL].

No.

Student: (Refer Time: 29:23).

I think you have done one exercise right

Student: (Refer Time: 29:26).

Anybody who has not done any exercise.

Student: (Refer Time: 29:28).

Only one.

Student: (Refer Time: 29:32) we will try once more (Refer Time: 29:33).

Oh you want to try once again I will think.

Student: (Refer Time: 29:36).

You will do it take another chance; we have an time limitation, I will give you two minutes.

Student: Sir (Refer Time: 29:41).

Four of you thank you very much.

Student: (Refer Time: 29:48).

Your time starts now two minutes only

Student: (Refer Time: 29:43).

Hold like this.

Student: (Refer Time: 029:55) move to the corner move to the corner (Refer Time: 29:56) (Refer Time: 29:57). [FL].

This team is still the same position; they are not going up or down.

Student: (Refer Time: 30:23).

Any way you can practice it when you go back to your hostel, take one tube and then try to do whether try to see whether you can do it.

Student: (Refer Time: 30:41) get a finger in the (Refer Time: 30:42) [FL] distance (Refer Time: 30:043) slowly.

Your finger is not in you should hold it in like this only, you know otherwise you are actually not applying any force.

Student: (Refer Time: 30:58).

You are just trying to contact it.

Student: (Refer Time: 31:00).

To change it change the shape.

Student: (Refer Time: 31:03).

Put that side only back side of your finger not

Student: (Refer Time: 31:05).

Yeah.

Student: (Refer Time: 31:06).

one minutes.

Student: slowly move (Refer Time: 31:09) one more (Refer Time: 31:10) do not go up you are sitting hand will going up (Refer Time: 31:11) wait (Refer Time: 31:12).

I think we will stop here.

Student: Wait sir, we will do that (Refer Time: 32:12) you also sit down (Refer Time: 32:13) sit down (Refer Time: 32:14).

Thank you can try it later on. So, you know you need a little bit of practice.

Student: (Refer Time: 32:41).

Another 30 seconds for you.

Student: (Refer Time: 32:45) [FL].

Thank you, thank you very much. So, as you can see here now, when we are doing a group work then you do need a lot of coordination whether it is for the tangram or it is for the helium tube, you need to have proper coordination between the team members to succeed in any team activity.

So, the purpose of this kind of team building activities is basically to understand the team members how do they react what kind of personality or whether they are helping mentality or they just want to do by their themselves. So, these are the objectives of this type of group activities and this will help you to when you start doing the real project of developing a product or a system, you know what kind of people are there with you and accordingly you can plan for the activities and that will help to make sure that the project succeeds at the end of the day ok.

So, that is the purpose of this kind of activities and when we whenever we do any kind of activity, we look at the responsiveness of the team the communication, leadership and commitment of the members for the success of the project.

So, that was about the team building and team formation team building, as I mentioned there are another activity of team project is basically to plan for the activity.

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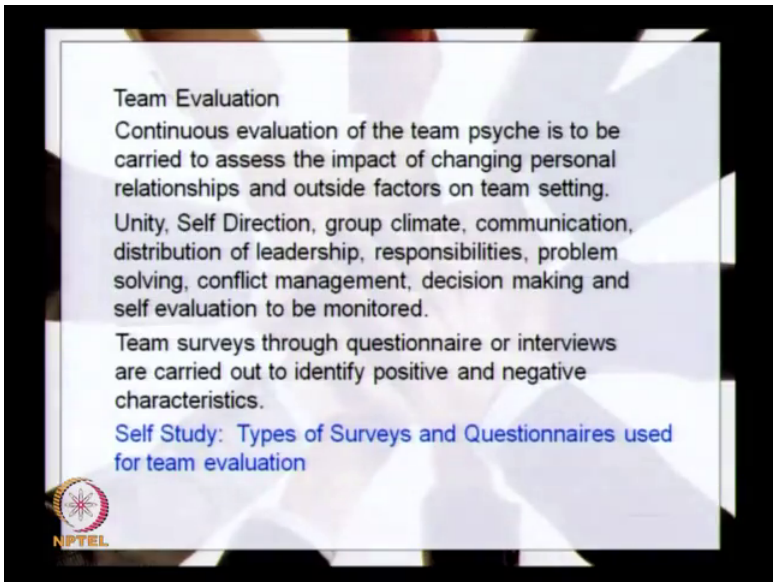

So, we do not really go to the team evaluation part at present, basically whether you form a team now and then just starts the team activities that are not the end of the team building. So, you will do a continuous evaluation of the team; basically as the progress with the project will keep on evaluating the team responsiveness and how the team actually works.

So, the unity self direction group climate communication, all those things will be continuously analyzed to make sure that the team actually has still behaves a cohesive team till the end of the project.

There are many ways to do this there are team surveys, through questionnaire or interviews to identify positive and negative characteristics of the team. So, these are this will be done any industry you will see that whenever the project is given to a particular team there, will be continuous evaluation of the team responsiveness and their cohesiveness through different ways of questionnaire or interviews of the team members.

So, this is a self study topic for you. So, you can actually try to find out what are the types of surveys and question is used for team evaluation. So, this is just for self study. So, you do not need to submit any port on this one.

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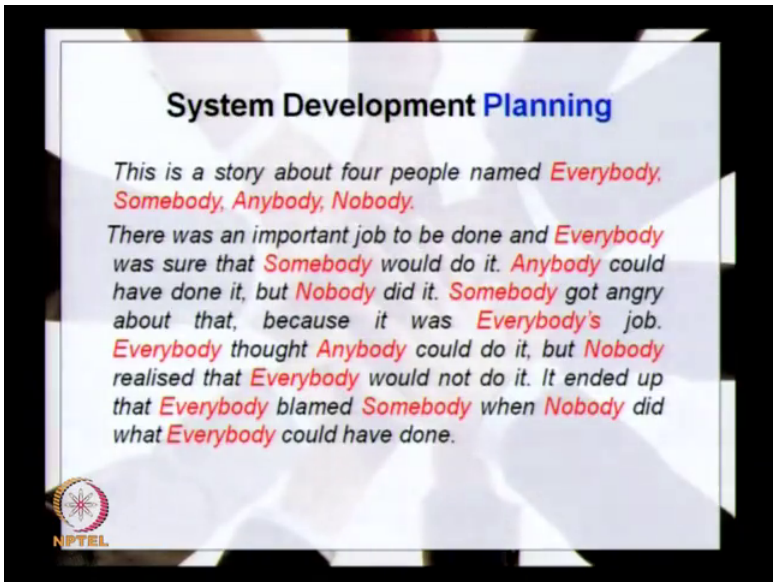

So, let us move to the next topic of planning; system planning or the product development planning. As I mentioned this actually is important task, we are actually we need to plan for the task ahead and then make proper arrangement for distribution of work as well as time schedules.

So, if you do not have a proper schedule or a time or a an assignment of tasks then the things will be something like this. So, this is story about 4 people named everybody, somebody, anybody and nobody. There was an important job to be done and everybody was sure that somebody would do it. Anybody could have done it, but nobody did it somebody got angry about that because it was everybody's job. Everybody thought anybody could do it, but nobody realized that everybody would not do it and it ended up that everybody blamed somebody, when nobody did that what everybody could have done. So, when you do not have a proper planning or a proper assignment of task, this is what going to happen. When you say think that it is everybody's job basically nobody does the job.

So, in order to avoid this kind of situations, we need to have proper planning of the activities well ahead and assignment of task that is basically the planning of projects or project planning.

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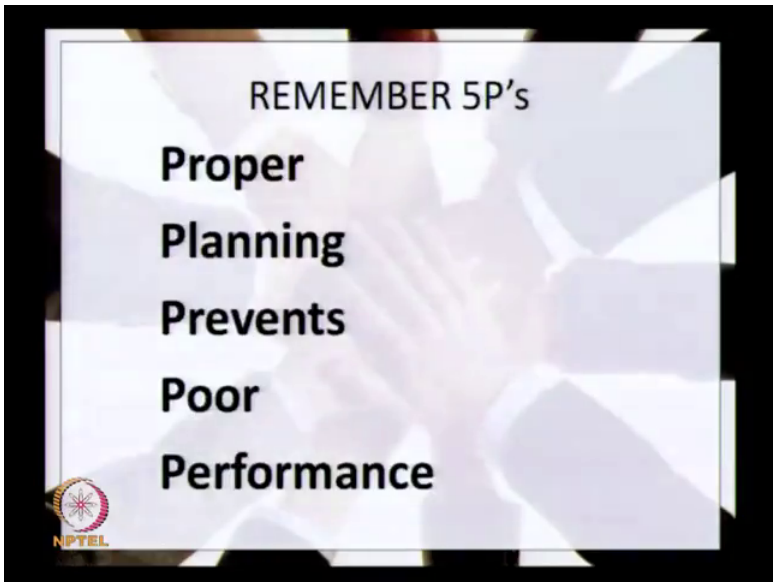

Remember that proper planning prevents poor performance. So, these are the 5 piece of planning, to have a proper planning which will prevent which can prevent the poor performance of the team.

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So, how do we do this product development planning? At the very basic level it entails a set of activities. So, we have a set of activities which need to be completed during the project and objective is to plan and manage these activities as a product development

team. So, any task will be having some activities be carried out. So, what we need to do is to plan and manage these activities as a product development team ok.

There are 4 basic aspects. So, what are the tasks to be done when it has to be done? So, these are the task and this is the schedule when it is be done, where the equipment and facilities what are the equipment and facilities needed to do this task and how. So, who will do this task people material facility and equipment cost. So, all these are need to be planned in the planning stage itself.

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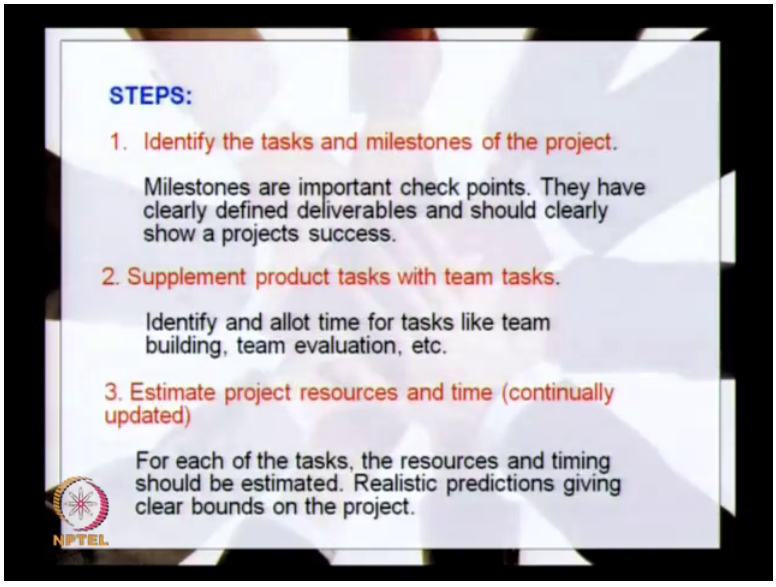

So, the steps involved are basically you identify the tasks and milestones of the project. So, task there are many tasks to be done and there will be some milestones to be achieved. You know at the end of one month you should have completed the requirement analysis of a project, then the after next month you should do the functional mapping and then you start the design.

So, these are the milestones at every stage you would be having some milestones. So, you complete this milestone and then identify this task and milestone of the project. Then we supplement the product task with the team task. So, identifying allowed time for tasks like team building team evaluation etcetera. Spot from the project tasks there will be some supplement tasks like team building evaluation. So, this also need to be accounted when we are planning for the task and then estimate the project resources and time

continually updated. So, we need to estimate for how much time it each project will take and what resources are available.

So, this has to be estimated for each of the task the resources and timing should be estimated, and a realistic prediction giving clear bounds on the project should be given. So, how much time it will take a realistic prediction of the time requirement and that should be projected as the estimated time of completion.

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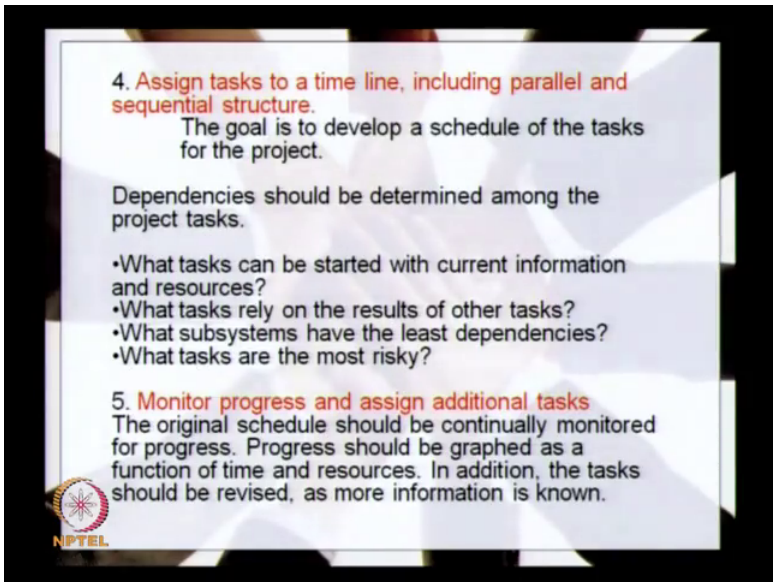

The other one is the assigned task to a timeline including parallel and sequential structure. So, the goal is to develop a schedule of the task of the project. So, an now you know about the task and the time schedule. So, you assign the task to your timeline including parallel activity. So, some of the activities can go in parallel. So, identify those parallel activities and then assign a task a timeline. Dependencies should be determined among the project task. So, there will be some dependencies like we have to complete one task, before you starting the other tasks. So, this kind of dependencies should be analyzed before we actually plan the project.

So, what task can be started with current information, what tasks rely on the results of other task and what subsystems have the least dependencies, what tasks are the most risky. So, these things to be analyzed and then finally, monitor progress and assign additional tasks. So, as you progress with the task you look at the time line what you prepare or the time schedule you prepared and monitor whether you are really reaching

those targets, if not you have to give you have to revise the schedules and sometimes additional tasks also will come. So, that also need to be incorporated in the timeline.

So, these are the 5 stages involved in the or 5 steps involved in project planning.

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So, what are the methods by which we do this project planning? There are different methods available. So, basically one is known as the GANTT chart the other one is CPM which is the critical path methods, then there are other methods called web program evaluation technical review.

So, there are many methods we will not go through all these methods we will just understand ones method, which is known as the GANTT chart. GANTT chart is named after henry GANTT. So, this is nothing, but a bar chart that relate product or system development tasks and activities to time.

So, basically you do not identify all the other aspects, only the task and the timeline. So, what are the tasks to be completed and what is the timeline for this task will be analyzed in the GANTT chart.

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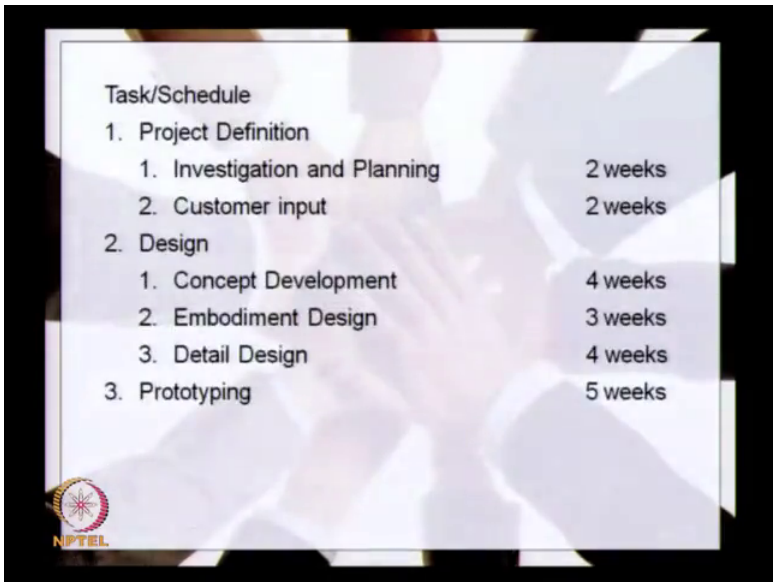

I give you an example. So, if you want to do a GANTT chart first we will try to identify the task and the scheduled. So, suppose you take the design of a product, you know that the project definition the investigation planning may might two weeks customer input may take another two weeks the design of the concept development take 4 weeks embodiment design takes three weeks detail design 4 weeks prototyping 5 weeks.

Suppose you identify are these task and the estimated time then you can start developing the GANTT chart. So, basically you identify the task with the timeline then you are getting a GANTT chart.

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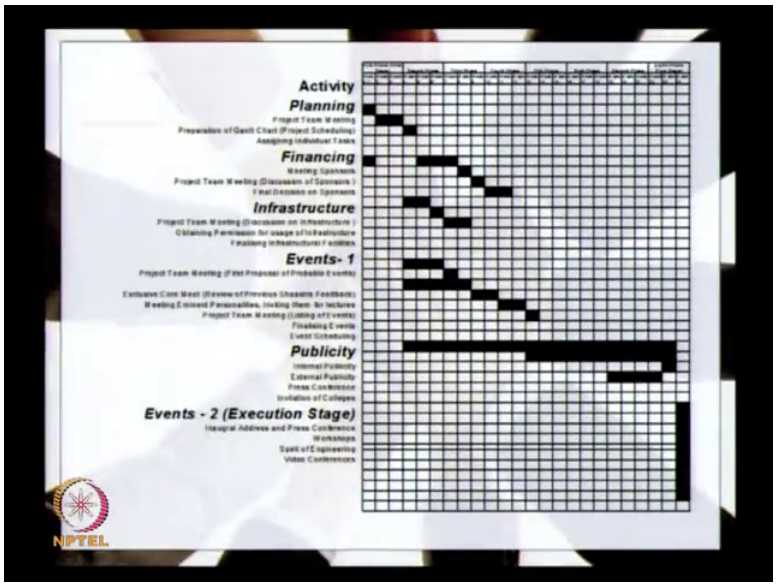

So, one example for the GANTT chart is shown here. So, here you write down all the activities and then here you write down the periods in terms of months or weeks or hear; you write down this week I am line over here and then activities then identify what are the activities which has to be started in the beginning.

So, you can see here that some of the activities can actually be parallel. So, you can see that this one and these are parallel you can start this two activities together, similarly this will be the serial activities of once completed this you will go to the next one, and after this only you can start the next activity here. So, like you can see that the parallel and serial activities are all marked in the chart.

So, here that line should be given and these are the activities. So, any kind of any activities along with its timelines, if you park it in a bar chart then it actually becomes a GANTT chart. So, it is a very simple planning tool if there are software's available for doing this, most of this commercial software's, mail processing software and the software's are actually coming with a toolbox for doing the timelines also or the GANTT chart.

So, this is actually very easy to use, anybody can actually if you understand the activities and the timelines you can actually prepare a GANTT charts.

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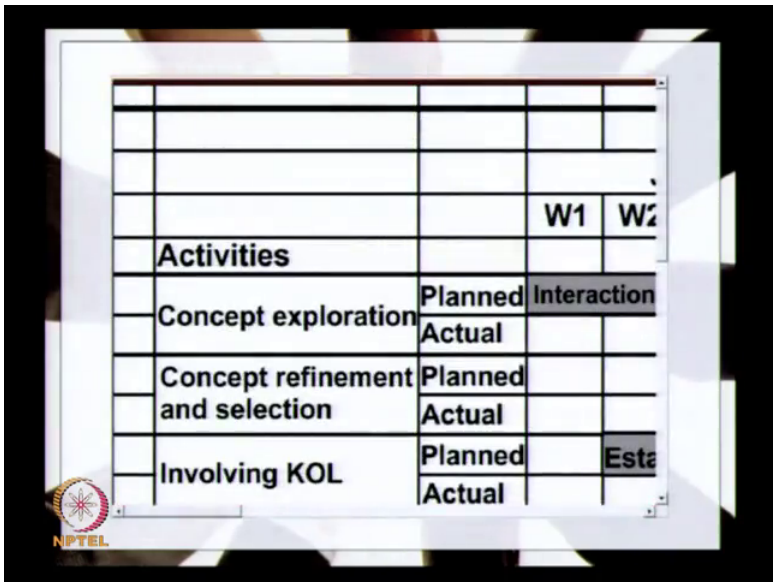

So, this is actually showing another GANTT chart with little bit more detail. So, you can actually see that this is for a product development, see here is at weeks and months are given here.

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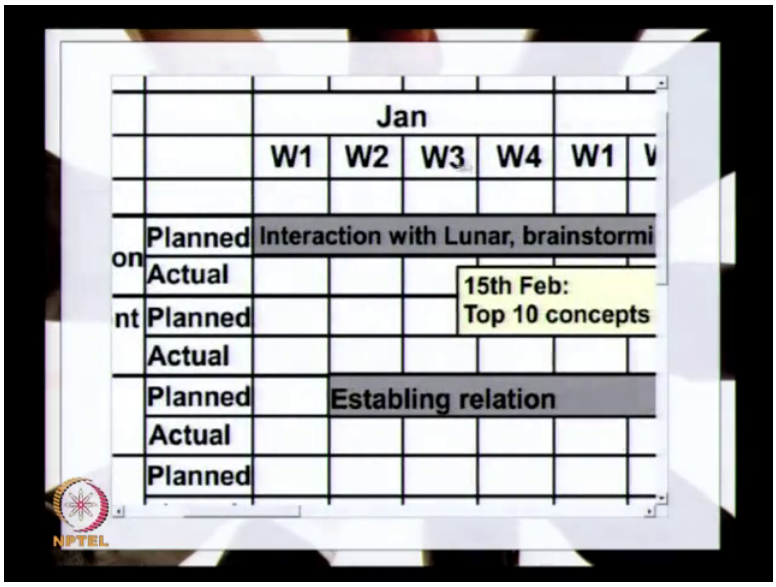

So, January week 1, 2, 3, 4 and then you have this February March like that is given up to June.

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So, to June it is given for a particular project and then every week what are the activities to be done we can write down.

So, here you can see that the activities are listed here concept exploration, the planned one is given as here. So, this is the planned one interaction with design agencies and brainstorming. So, for six weeks as assigned for this particular task and at the bottom of this one it is given that actual. So, once you complete this or once the period is over you can see, where actually you are whether you are reaching this point or you are causing this particular limit.

Similarly, you can see that there some important milestones are written here 15th February there should be top ten concepts identified.

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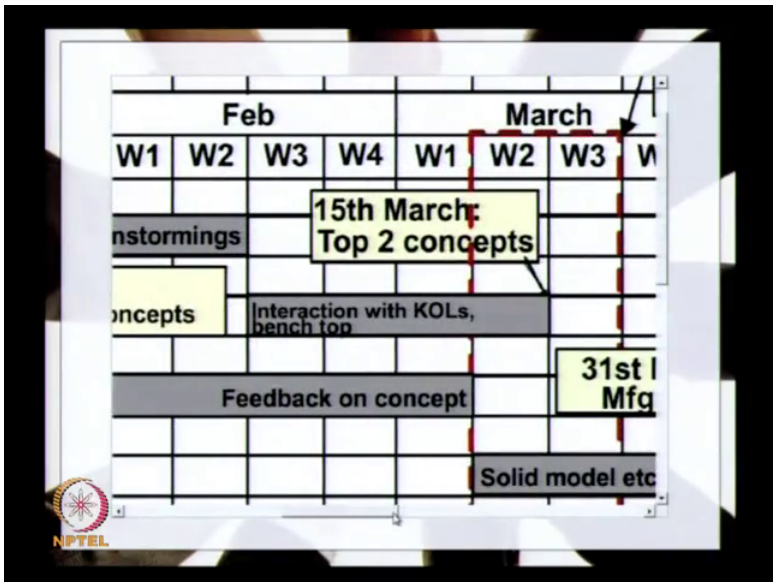

And same way you can see here after that interaction with key opinion leaders for the assessing the concept where a validity, then 15th march you will get from the 10 concepts, you reach the two concepts and then there are other activities also here.

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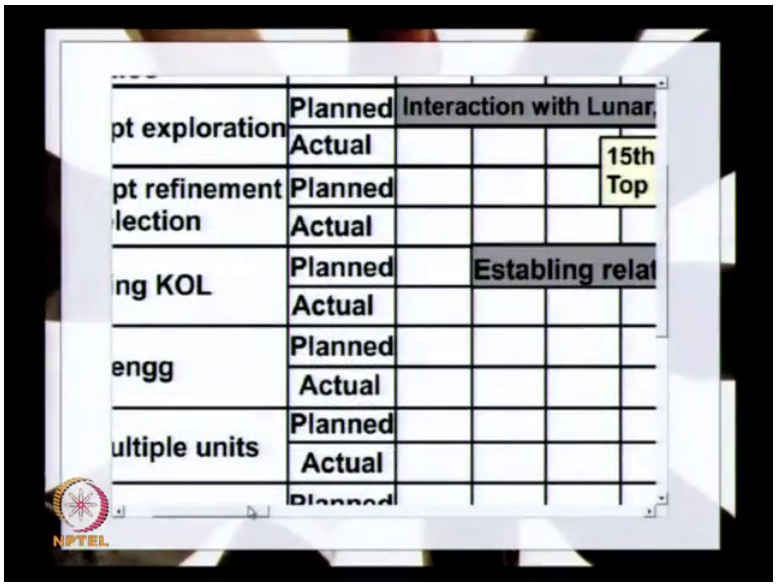

You can see here establishing relation with others feedback on concepts from the users or the consumers then after these concepts are ready.

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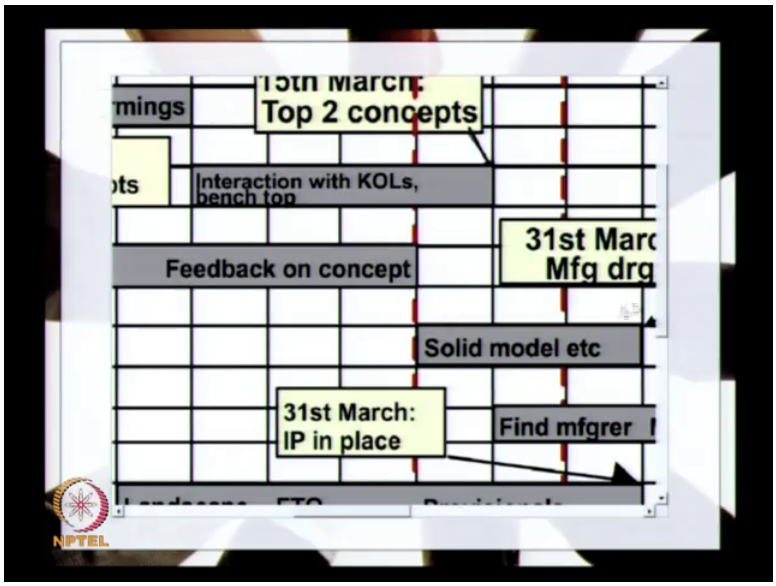

Then you go for the solid modeling or the actual design of the product, and then you will have the provisional patent filing then clearances for testing, evaluation market strategy.

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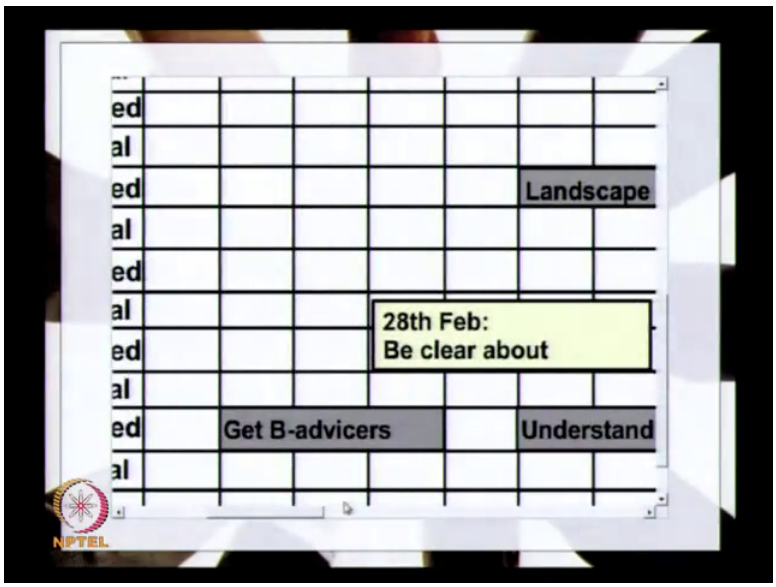

So, some of the things are actually you can see these are parallel activities the business advisors understanding market, evaluate market strategy these things can actually be parallely going.

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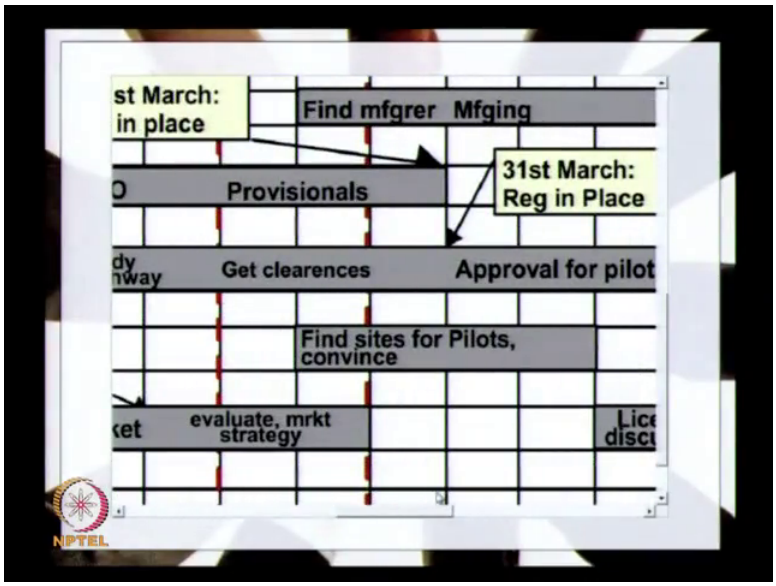

So, most of the things what are you need to know about the project and actually be incorporated into this chart, important milestone can be marked here and then you can actually have a the evaluation whether you are really reaching you can have another row over here to see whether you are really reaching out or not.

So, at every stage of the project, you that go back to this the chart and then see whether you are really reaching the target or not. If not you have to revise the schedule or you have to find out what is the reason why you are not able to meet the schedules. So, this type of chart actually helps you to have a proper planning of the project.

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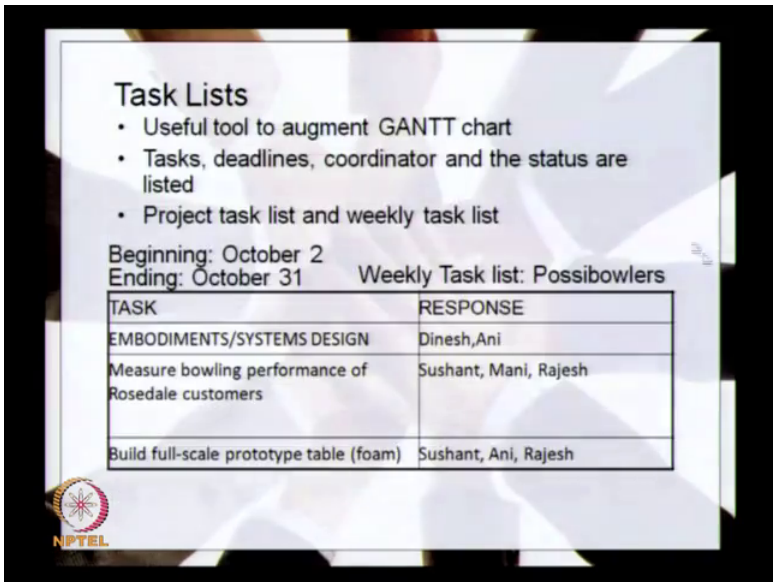

So, apart from this planning I mean this time schedules, will actually add the other things like task list which actually will augment to the GANTT chart. So, GANTT chart basically tells you the task and the timelines, but here if you augment a task list it will actually give a little bit more explanation about particular task and who is going to do this. The embodiment or system design who is going to do this the responsibility is given to person and similarly the next task is given to another person the three people like this you can actually assign the task to a particular person also. So, that the timelines are also there as well as the person who is actually going to do the task is also listed.

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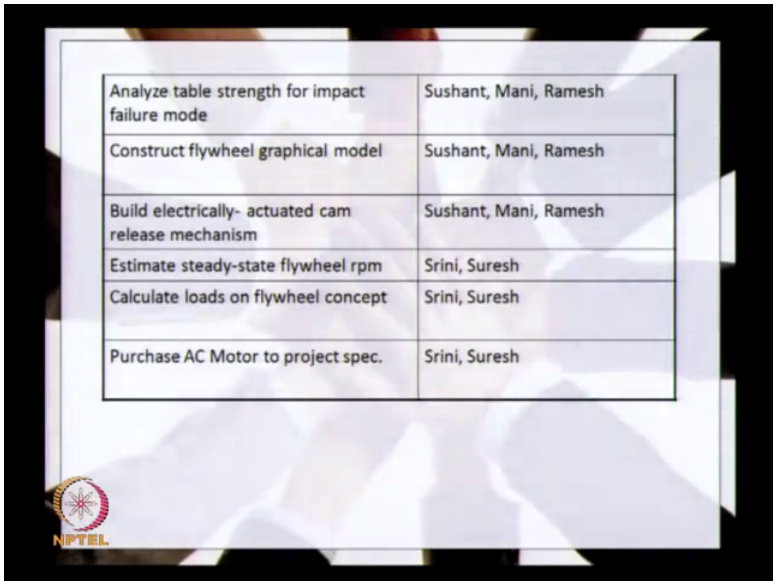

So, this is the task list, which actually augment to the can be used as an augment to GANTT charts similarly all that activities are assigned to individuals or the other group of people so that they will take care of this particular activity. So, there is no confusion who is going to do that particular activity everything is assigned to individuals, so that you can make sure that the particular task is being carried out by these people within the scheduled time. And if they are not able to do it in the scheduled time we will have a review of this task and task the list as well as the schedule; to ensure that problems are identified and then they are sold so that the delays are actually eliminated at the later stage ok.

So, that is about project planning these are the other activities ok.

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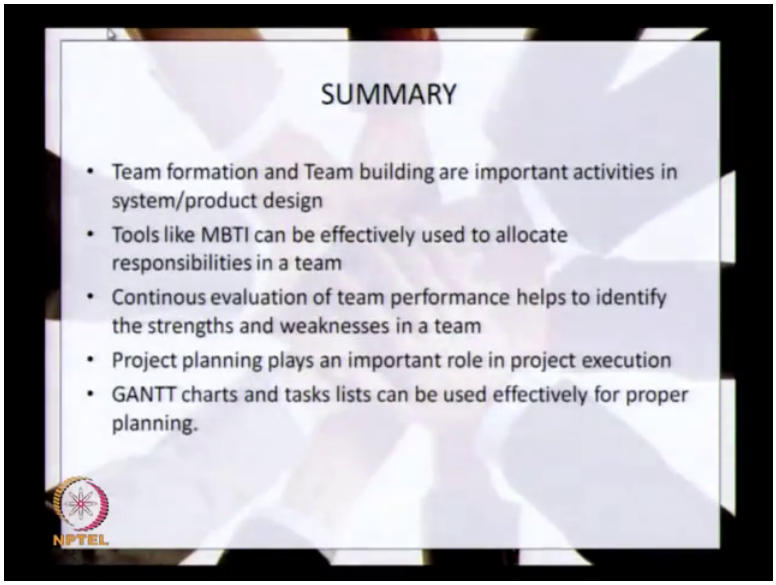

So, to summarize these two lectures, we found that the team formation and team building are important activities in system or product design. So, we need to measure that for any activity like a product design or a system design, we need to have a team this is a team work and there should be proper team formation as well as team building to ensure that the project succeeds.

Then the tools like MBTI that is the Myers-Briggs type indicator can be effectively used to allocate responsibilities in a team continuous, evaluation of team performance helps to identify the strengths and weaknesses in a team. So, you to have a continuous analysis continuous evaluation of the team performance, to make sure that the team the cohesion

is team the interaction with the team or their relationship within the team is maintained properly.

And then the project planning plays an important role in project execution GANTT charts and task this can be used effectively for proper planning. So, this was a main topics we covered in these two lectures. Any questions on this part or to know more about any of these activities or you have any specific question on this, you are welcome to ask any questions then.

Thank you very much for your patience. We will see next week.

Thank you.