H05 Class 1

**Agenda:**  
Agenda for Coaching Session (with Timing)  
  
Opening & Check-In (5 minutes):  
  
Brief discussion on how the coachee is doing and current challenges.  
  
  
Goal Review (10 minutes):  
  
Discuss progress on previously set goals and evaluate.  
  
  
New Learnings & Feedback (10 minutes):  
  
Provide insights, suggestions, and feedback for improvement.  
  
  
Action Plan Development (10 minutes):  
  
Create a clear, actionable plan for the coachee’s development.  
  
  
Wrap-Up & Support (5 minutes):  
  
Confirm next steps and what support is needed.  
  
  
  
Total Duration: 40 minutes

# Transcript

**Speaker\_04 - 00:00**Oh, thank God.  
What is the course name?  
What is the course name?  
Smart product design.  
What is the course name?  
Smart product design.  
Very good.  
 **Speaker\_04 - 00:30**So, what is design?  
No, you will tell the definition.  
This is a flute batch,  
no.  
Your juniors are bat batch, cricket bat.  
The projector is overheating.  
 **Speaker\_02 - 00:59**It  
 **Speaker\_03 - 01:05**has been like that since the last semester.  
 **Speaker\_04 - 01:14**So that is a mass distribution.  
So I am Dr. Jayachandra Bingi.  
Hope you know me.  
Okay.  
And this is Dr. Anu Deep.  
new faculty we are going to teach this particular batch the course which you said smart product design right so today I am going to complete the syllabus yeah today I am going to complete the syllabus so next week onwards we are going to interact 10 members group wise right so I think this is  
going to be our last collective class because today I am going to complete the syllabus.  
 **Speaker\_04 - 02:05**And in this what is the marks distribution?  
What is the marks distribution?  
So 25 for?  
One exhibition we are going to, exhibition means product exhibition.  
product exhibition we are going to conduct in each year, say April, okay.  
That is on April 12th, please note it down.  
When is the Heipasko exhibition or symposium?  
 **Speaker\_04 - 02:40**April 12th, it is fixed.  
How many marks we gave?  
25. So other 25 marks?  
 **Multiple speakers - 02:49**12. Weekly.  
 **Speaker\_04 - 02:52**interaction because my experience in last four years clearly indicating and Sara also validated because when we deal with 150 people it is only reaching 15 people, one five.  
So this year onwards I don't want to interact collectively.  
So this classroom model is not going to work for design.  
So in each design course you have to build something so that you gain that experience.  
right.  
So, for that how many marks we gave?  
25. So, total 50 marks for pre-end same.  
 **Speaker\_04 - 03:32**So, end same how many marks?  
50 marks.  
And when I come inside the class, people generally expect that it is going to be the open book exam.  
No.  
Okay.  
Here I am famous for that.  
Because I am the person who conduct open book and open internet exam.  
 **Speaker\_04 - 03:52**okay but here it is closed book exam because other batch is also there that's why okay so that other 50 marks that is in same exam how many marks 50 marks what is the mode of examination closed book that means you have to memorize something okay so that is the marks distribution and this week I am  
going to expect from you and last year you might have dealt with the different projects as a part of which course systems thinking what is system  
 **Multiple speakers - 04:42**anybody systems thinking is over what is system what is system We are not allowed to use the third bench middle.  
Yes, ma'am.  
 **Speaker\_01 - 04:56**You are thinking very deeply.  
 **Speaker\_04 - 05:00**What is system?  
Anybody else?  
Anybody else?  
What is system?  
What is system?  
I am asking you only.  
Anybody else?  
 **Speaker\_04 - 05:21**What is system?  
That is the impact.  
We completed systems thinking and what is mean by system?  
No answer.  
Two minute silence as if somebody died.  
So, this is the problem with the classroom model.  
So, whatever we are teaching actually not reaching because of the number.  
 **Speaker\_04 - 05:46**So, that is why this year onwards I completely be janking this model.  
Next week onwards, only 10, 10 members I am going to interact group wise.  
So, by next week I want you to create 10 batches sorry 15 batches total number is around 159 or 160. So, 10 members each batch please no doubt what is the group size 10 members group you have to create.  
10 members group you have to create by next week.  
So our TAs will share the form.  
You can enter the details.  
Whoever don't create, that's all.  
 **Speaker\_04 - 06:40**They can't interact.  
So forget about the 25 months and project 25 months.  
So by next week, you have to create groups.  
Number is 10. right so previous semester you might have been you may be dealing with some project right so how many members were there in the last semester six five to six right so how many people want to continue the same project  
How many people want to continue the same project?  
Some people actually don't even remember what was their project.  
 **Speaker\_03 - 07:28**I don't know, why is budget looking at us?  
Okay, anyway I'm not going to allow that.  
 **Speaker\_04 - 07:37**Okay, so if I allow that I'm not Jay Chandra.  
So I have to maintain my own thing.  
So 10-10 batch or 10-10 group.  
and you have to choose project from the metaphor I am going to give you okay that also I will share with you then metaphor you choose from that get inspiration and build something I need only one functionality I don't need full product single functionality you have to demonstrate on April 12th which  
appears to be smart that's all which appears to be smart.  
That is all.  
 **Speaker\_02 - 08:25**Only one functionality.  
 **Speaker\_04 - 08:27**I do not need the full device as if I show some dog as a metaphor immediately you think that oh I have to create the robotic dog within this semester.  
You need not to do.  
Boost on dynamics already created.  
So that is the thing.  
And today is a very good day.  
that we are starting our course.  
What about Spadex?  
 **Speaker\_04 - 08:57**Have you heard about Spadex?  
Some people thinking maybe it is a courier company.  
It is a ISRO's project.  
Space?  
Space docking, what is the name of the project?  
this fellow remember the functionality, forgot the name.  
That project name is Spadex.  
 **Speaker\_04 - 09:28**Maybe people heard about FedEx, right?  
Don't get confused with that.  
Spadex project got successful today.  
Spadex project was all about, Spadex project done by, done by Isro.  
That is the indigenous project.  
done by our own people.  
Isra means don't think that all our noble narrates.  
 **Speaker\_04 - 09:50**No, no.  
Ten normal people came together and achieved something great.  
That's all.  
Isra means that only.  
Normal people come together, achieve miracles.  
That's all.  
If you go individually and see that, you think that these people are scientists.  
 **Speaker\_04 - 10:10**You'll seriously think like that.  
No.  
It is a collective effort to actually making them win.  
Spadex is about space docking, nothing but smart system.  
It is a smart system.  
You can look into it.  
It is a smart robotic system that should work in space.  
 **Speaker\_04 - 10:32**At what temperature?  
Minus something.  
100. Anybody attended my classes last semester, sorry, the last year?  
 **Multiple speakers - 10:43**Yes, sir, all of us.  
 **Speaker\_04 - 10:45**Some faces are familiar only.  
So, that I would have told you.  
So, what temperature you have to achieve these actions docking all those things?  
27 degrees ah?  
Space temperature is very low right that was the challenge.  
So, smart system at lowest temperature that is cryogenic temperatures right that got successful today you should celebrate right.  
Yes?  
 **Speaker\_04 - 11:14**You have to congratulate Isra.  
So, that is the example for smart system which we got successful today India got successful.  
So, we are starting our course fortunately.  
That is why this semester I will give you the metaphor.  
You have to get inspiration from that and create a single smart functionality out of that metaphor.  
So, that covers another 25 marks, weekly interaction, another 25 marks end semester whatever the topics we will discuss throughout the semester is going to be on those topics.  
Next slide.  
 **Speaker\_04 - 11:57**So, that is the smart product design.  
Are they smart?  
What are they?  
What are they?  
One is bird, second is squirrel.  
What bird is doing?  
Drinking.  
 **Speaker\_04 - 12:18**Water.  
Second one is?  
Maybe February 14 is coming, preparing for breakup.  
No, I will bless you on that day.  
Don't worry.  
My tongue is very powerful.  
How many batches are there?  
 **Speaker\_04 - 12:45**So these two are, do you think smart?  
I used one word, right, metaphor.  
This is the metaphor.  
Metaphor means it's a kind of inspiration.  
Suppose if I ask you, can you gain something out of this particular system?  
What is the system?  
SquareL.  
 **Speaker\_04 - 13:07**What is the event?  
It is doing something.  
out of this can you draw one functionality related to smartness or intelligence?  
That is what you have to do.  
So what is the smartness there?  
You think, at least you can guess.  
What is the smartness in that particular event?  
 **Speaker\_04 - 13:40**Sorry, come again.  
Walking on two feet, it is not walking, it is standing, right.  
Standing on two feet is a smartness according to him.  
Anything else?  
That is a functionality.  
I will agree, fully agree.  
Anything else?  
 **Speaker\_04 - 13:57**One functionality.  
Yes.  
It is trying to smell, what is the purpose?  
To identify what it is or?  
Is it harmful to consume?  
Right?  
That is a purpose.  
 **Speaker\_04 - 14:16**So that you can define as a functionality.  
One functionality if you define like that and realize, I'm happy with that one metaphor.  
That's all.  
So what is the intelligence you see in the first image?  
Last bench people?  
Am I audible?  
Just 10 minutes over people are sleepy.  
 **Speaker\_04 - 14:42**Sambhar is working it seems.  
So what is the intelligence in first?  
Sorry.  
Yeah, in the case of bird.  
Yes, somebody said according to him grip.  
Next.  
It's trying to open that tap according to him.  
 **Speaker\_02 - 15:04**It is not trying to open it is holding that as a group.  
 **Speaker\_04 - 15:07**These fellows visibility also less this fellows also gloomy.  
Visibility less because of the window.  
Africa.  
Yes, any other functionality?  
It knows that it will find water.  
Yes.  
Is that the intelligence feature?  
 **Speaker\_04 - 15:41**Functionality of intelligence?  
That's it.  
Knowing, gripping and drinking.  
Why it should drink water?  
Survival.  
So, maintaining survival is not intelligence.  
Suppose zomato closed, mess closed, everything closed, but can you maintain your survival?  
 **Speaker\_04 - 16:10**Yes, that's why you are intelligent, right?  
So, I just deactivate all your functionalities, hands, legs not working, then?  
Just with the remote I will do that, then?  
Intelligence is there.  
Still, you have to use other functionality.  
This is there, not powerful.  
So, you use that.  
 **Speaker\_04 - 16:39**So, according to the context, you are going to use the different functionality to fulfill your requirement.  
That is called intelligence.  
So, this is what I need.  
I will give you the metaphor, find out the intelligence feature or define the intelligence functionality then realize in reality.  
One functionality in next three months, very easy task.  
Next.  
Those are the topics.  
 **Speaker\_04 - 17:18**What is the first topic?  
definition of intelligence because we want to build artificial intelligence without understanding intelligence triple I did you won't do that mistake if you want to go to artificial intelligence first idiot first understand what is intelligence that's what our philosophies so you must understand  
what is mean by intelligence then you will realize that whether you are intelligent or not right second level of intelligence, dimensions of intelligence and in how intelligence is connected to information right.  
So, how intelligence is connected to information then bio inspired systems how you can take the concept of intelligence itself came from where bio systems that is why the famous topic in your AI that is at neural networks.  
inspired by if it is there right inspired by neural or brain right so like this we have nine topics we are going to cover week by week with respect to your project so I am going to discuss with you about these topics one week after other okay then with respect to your project right next.  
So tell  
me.  
 **Speaker\_04 - 18:59**Michael Jackson.  
Who is that fellow?  
What do you really see there?  
Dots.  
But that fellow is saying Michael Jackson.  
Do you think hangover problem?  
 **Multiple speakers - 19:16**No, right?  
 **Speaker\_04 - 19:18**Maybe.  
So, already afternoon.  
That fellow saying Michael Jackson, is it right or wrong?  
Then he is very smart.  
He is not looking at dots.  
He is looking at?  
He is looking at computer science people.  
 **Speaker\_04 - 19:38**Right word.  
He is looking at pattern.  
He is looking at?  
That is smartness.  
He is not looking at the individual dots.  
He is looking what these individual dots are actually making.  
Making into.  
 **Speaker\_04 - 19:59**So that is one form.  
That form is similar to Michael Jackson and that too Michael Jackson is known to him.  
Right?  
Maybe every day he is coming to his room.  
They are friends, maybe good friends.  
In front of our institute, what is there?  
Graveyard is there.  
 **Speaker\_04 - 20:23**So, Michael Jackson may come, 100 percent, do not worry, definitely will come.  
So, he found that it is Michael Jackson, similar to Michael Jackson, that is a similarity.  
Have you heard anywhere?  
Similarity function in mathematics.  
That is what the process happened in his brain now.  
So that's why we are calling that identifying the pattern instead of the dots is smartness.  
So identifying the pattern instead of the dots is a behavior.  
 **Speaker\_04 - 21:06**What functionality he is using to see that vision.  
So he is using functionality called vision and analyzing it in such a way that I don't want to see the dots but I want to see the form behind those dots or made by those dots.  
So this process is going on inside.  
Wherever you hear process mechanism, you must understand or define them as behavior.  
So smartness is a behavior.  
Smartness is always a behavior.  
It is not simply function tell you the function, function bring the smartness.  
 **Speaker\_04 - 21:52**No.  
How you are using that function in order to achieve something is a behavior.  
That mechanism of that event.  
So the smartness is a behavior.  
So next.  
Smart.  
Now tell me what is system, product or system.  
 **Speaker\_04 - 22:20**This fellow came back again.  
Because you completed systems thinking.  
My habit is gone.  
Is it audible?  
No, I don't get the feel of speaking.  
That is another behavior.  
I want feedback.  
 **Speaker\_04 - 22:47**That's why I want to keep it close.  
Tell me.  
What is system?  
Okay, not remembered.  
You go, Padma.  
Okay.  
Next.  
 **Speaker\_04 - 23:08**That's all I can tell.  
Tell me, now you define the system.  
 **Speaker\_03 - 23:13**How individual components are connected with each other?  
 **Speaker\_04 - 23:17**Define the system.  
What are all there?  
What different blocks indicates?  
 **Speaker\_03 - 23:29**Different functionalities.  
 **Speaker\_04 - 23:30**Are you a system?  
You are composed of?  
Muscle.  
Different organs.  
Different parts.  
So do you find the parts there, different blocks represent?  
 **Unknown speaker - 23:47**Parts.  
 **Speaker\_04 - 23:49**What about the arrows?  
Relationship.  
Relationship or you call it as connections.  
What do you call them as connections?  
So parts are there, connections are there.  
Now these parts and connections together what they do?  
They will bring out a purpose.  
 **Speaker\_04 - 24:09**They will bring out a purpose externally.  
So, that is what system means.  
System means the entity which has parts, connections, then purpose.  
So, that is why you please remember PCP.  
P, C, P, the entity which has parts, connections and purpose.  
If any entity has that even that bike, let us assume, that bike has parts, connections have, otherwise you can't connect to one part with the other, they have connections also.  
That may be electrical connection or mechanical connection or something else also, through Wi-Fi also, information connection is there.  
 **Speaker\_04 - 25:11**Purpose?  
It has.  
That's why you have to call that as system.  
Any entity for that matter from the galaxy to earth.  
Any entity has these three things, you must define that as system.  
So, I kindly request you don't forget now onwards.  
So, what is the system?  
 **Speaker\_04 - 25:36**Loudly.  
 **Speaker\_03 - 25:38**An entity high.  
 **Speaker\_04 - 25:39**Any entity which has?  
 **Speaker\_03 - 25:41**Parts and connection.  
 **Speaker\_04 - 25:43**Parts, connections and purpose.  
This you can apply any system and understand the system.  
So, are you a system?  
Yes.  
You are a system.  
You have different parts and different connections.  
That is why when somebody bit, joint will dislocate.  
 **Speaker\_04 - 26:00**because you have connections, right?  
So, this is the system.  
Now, smartness is over, smartness is a behavior in a particular system.  
Next.  
Now, the bigger term.  
We are in an Indian Institute of Information Technology, Design and Manufacturing, Kansipuram, right?  
Very big name.  
 **Speaker\_04 - 26:26**I think biggest name in India.  
our institute only okay so we have design our karma is like we have design in the institute name itself so what is design tell me a don't read there  
now we are building a behavior in a particular system for a particular requirement for a particular requirement.  
Who will find that requirement?  
Designers only job is finding requirement and propose a good system and good behavior.  
That's why this is smart product design.  
So design is always finding a correct requirement for a correct condition.  
 **Speaker\_04 - 27:23**I can't give the Chennai person a sweater in month of me what happens?  
Suppose if I order you in the month of me you all have to come with the sweater then you won't sweat you will be fried that's all deep fry you know you will become that so it's always the condition or the context decides the real requirement.  
That's why you should not say that's why they say that I went to Tirupati.  
You will understand, right?  
I went to Tirupati.  
Just I am entering.  
One board is there.  
 **Speaker\_04 - 28:16**Those who are having breathing issues, BEP, then other something they wrote, heart related things, kindly don't climb.  
What does it mean?  
So, systems which have those deficiencies cannot undergo that condition.  
Am I right?  
So, there is a condition.  
So, can I climb?  
Of course, I can climb.  
 **Speaker\_04 - 28:48**So, if anybody having the problem cannot climb.  
So, you have to design a system in such a way that matches the condition and requirement.  
It is not only requirement.  
It's a condition also.  
So please point to be noted.  
Requirement should be defined.  
Requirement should be defined as per the condition or context.  
 **Speaker\_04 - 29:18**The condition is called context.  
That's all.  
So once you find the requirement, then accordingly you propose a good behavior for a particular system, then that smart product design.  
So, without considering the condition if you build something, that product is going to fail.  
If you had seen in the first semester, have you seen some bad designs in the foundation course?  
playing golf in front of the toilet sheet.  
Have you seen somewhere?  
 **Speaker\_04 - 30:01**Playing golf in front of the toilet sheet in the first foundation course.  
Half of the fellows left it seems.  
Right?  
So, or maybe having a fan with the chopsticks.  
Have you seen?  
Those are all designs only.  
fulfilling the requirement but it's not as per the condition right so that's why requirement should be addressed or requirement should be defined as per the condition or a context you should not give the double sugar tea with a diabetic patient as simple as that So, requirement is always as per the  
 **Speaker\_04 - 30:51**condition or context.  
Who will find that condition or context designer?  
That is why we call this as a design course.  
So, we are not only worried about the system, not only worried about the behavior, we are always worried about system and behavior matches with the condition and requirement.  
That is why we are designers.  
If you are engineer you need not to think that much some fellow will come and give specifications throw on your face you have to build something whether it work or not doesn't matter for you but for designer it's not like that it has to work according to condition and requirement that's why designer  
always define conditions and requirements right so that's why smart product design next  
 **Speaker\_04 - 31:46**So when you go deeper into the design, what are the three important things you find?  
Form, structure, function, behavior.  
In order to define them or in order to achieve them, you must understand context first.  
Then you can define which form, which functionality or which behavior.  
These all things you can define based on your understanding of the condition.  
Next.  
So, first let us understand what is intelligence.  
 **Speaker\_04 - 32:26**Next.  
So, there are too many definitions for intelligence.  
Mathematics fellows gave some kind of intelligence.  
Psychology fellows gave some kind of definitions and the physics fellows gave some kind of some definitions and other engineering people gave some kind of definitions.  
There are too many definitions but we have taken one definition standard.  
What is the definition?  
The definition by Leck and Hutter.  
 **Speaker\_04 - 32:54**So read there.  
What is the definition?  
You should not forget that.  
I will get irritated if you will get forget.  
Next week I will keep on asking these questions again and again and again.  
What is the definition of intelligence?  
It's a intelligence measure and agent's ability to achieve goals in wide range of environments.  
 **Speaker\_04 - 33:22**I kept some words in red color.  
What are those?  
environment agent means agent  
means agent means system agent means system and now in artificial intelligence they are calling that block of software is called agent now they are telling software time is over now agents will come agents will occupy all the software domain.  
They are saying that.  
So here agent means system.  
Agent means system.  
 **Speaker\_04 - 34:10**Ability means?  
Ability.  
How that fellow found it's a Michael Jackson?  
Ability means?  
How that fellow found Michael Jackson?  
Do you think Michael Jackson is coming his home every day or his room every day?  
Yes.  
 **Speaker\_04 - 34:36**Ability.  
Ability is always correlated to functionality.  
Ability means functionality.  
Ability means functionality.  
What is functionality?  
No, this is not new for me, don't worry because after six semesters of design courses also people actually think that what is functionality.  
So, it is not new.  
 **Speaker\_04 - 35:13**So, functionality means you write down there.  
In inverted commas you write.  
What system does?  
With ice, what you do?  
C. C is a functionality.  
What system does is called the functionality.  
Multiple functionalities are possible.  
 **Speaker\_04 - 35:42**What this hand can do or does many things?  
So, that is the many.  
Functionality means what system does.  
So, ability means always understand it is a functionality.  
Next, last another is there.  
What is that?  
You are all computer science people, you have to define that.  
 **Speaker\_04 - 36:12**What is environment?  
Environment.  
Stand.  
No,  
old people above EIT, you can sit no problem.  
It's okay, don't worry.  
Take deep breath and sound need not to come.  
 **Speaker\_04 - 36:46**Normally okay.  
Please sit up.  
Now some people may be feeling bad I didn't give the break right, that is the break.  
Now tell me environment.  
What happened now?  
In my environment?  
Changed.  
 **Speaker\_04 - 37:08**What changes came and who did that change?  
Who made that change or who contributed to the change?  
I instructed.  
That is anyway.  
I am bit sadistic only.  
Don't worry.  
I will do that kind of thing.  
 **Speaker\_04 - 37:25**But because of my instruction, what happened to my environment changed?  
You are fundamentally a system.  
That means what is my environment means?  
What is my environment?  
My environment is this classroom.  
the systems within this classroom and the other all systems not only human systems but also the electromagnetic systems everything this mic also system I am using I am interacting with it so you have to define environment like that whatever interacting with the system to be considered as part of  
environment.  
 **Speaker\_04 - 38:20**Now you take out your mobile phone, in your mobile phone now whether tower comes as a part of the environment of the mobile?  
Tower.  
Tower is there somewhere else.  
Is it nearby?  
No.  
But is there a interaction between this mobile and tower?  
Because interaction is there, you must consider tower as a part of environment of mobile.  
 **Speaker\_04 - 38:53**You got the point?  
So, that means environment means all the other systems and parameters.  
What are the important parameters of this room?  
Don't overaction.  
Up to 10th class you read all the physics.  
What are the parameters of this room?  
Number of seats.  
 **Speaker\_04 - 39:20**Number of seats.  
Okay, fine.  
Next.  
Size of the room, volume.  
Volume of the room.  
Next.  
Temperature, humidity.  
 **Speaker\_04 - 39:33**Sound acoustics.  
Sound acoustics.  
Right.  
Light.  
That is sound distribution.  
Amplitude distribution of the sound.  
Right.  
 **Speaker\_04 - 39:46**So there are many parameters right.  
So your environment also included with parameters.  
That means you have to consider all the surrounding systems which are interacting with you or in your surrounding and parameters.  
Is there a temperature effect on me?  
Yes.  
Equal temperature effect.  
There is no AC here.  
 **Speaker\_04 - 40:09**Pathetic thing.  
And next class I expect AC.  
Now go and ask.  
And next class I was not need any.  
In my room AC is there.  
Don't worry.  
Because 10, 10 member.  
 **Speaker\_04 - 40:25**That's the thing.  
So environment understood?  
So how you define the environment?  
All the surrounding or interacting systems and parameters together called as environment of a system.  
 **Speaker\_00 - 40:41**In this case I have the system.  
 **Speaker\_04 - 40:43**You are all environmental systems of my.  
right so this is the environment so your intelligence measure means how you are going to achieve goals in varying environments you joined last year tell me how first 10 days was like 10 days was like I want to go back even some fellows are coming these days and sorry I want to change the branch sir  
Right?  
So, these are all things happening because of your adaptation of the conditions.  
Some parameters may be you are not comfortable.  
These are intelligence issues.  
But you all are intelligent because you already adapted and settled down.  
 **Speaker\_04 - 41:38**No problem, sir.  
We will deal with it.  
That's why you are in the fourth semester.  
Right?  
Otherwise, people leave.  
That means that system is unable to achieve goals in that environment.  
That's why leaving.  
 **Speaker\_04 - 41:54**But you people already exhibited a intelligent property that you are able to achieve goals in this environment.  
You have that capabilities or functionalities.  
One important capability is sleeping in the class.  
Right?  
Somewhere we will complete that.  
Don't worry.  
Like that.  
 **Speaker\_04 - 42:15**So, that agent's ability or a system's ability to achieve goals in varying environments.  
Wide range of environments means varying environments.  
That's why suppose if you consider something that, sorry without considering the environment, I will build a system or build a product, it is going to fail.  
Example is Chandrayan 2. I already told in the first Chandrayan two failed just because of the one wrong consideration.  
What is that?  
Somebody said.  
Fellows who attended also forgot it seems.  
 **Speaker\_04 - 43:02**One wrong consideration.  
What is that?  
This fellow remembering that challenger accident.  
No, no.  
Chandrayan two.  
failed because of the temperature consideration.  
Your so-called electronics may not work at minus 140 or 160. Where you send your Chandrayan to?  
 **Speaker\_04 - 43:27**Which pole?  
South pole of the moon, the coldest part.  
Will your electronics work?  
You have to make sure all electronics work there.  
That is where it went back.  
We got the set back.  
So, without considering the environment if you are building something you cannot do that, that product will fail.  
 **Speaker\_04 - 43:54**Understand?  
That is why intelligence means it is a system's ability to use its functionalities to achieve goals in wide range of I am walking here to there without even looking at them.  
But do you think that I am not looking?  
So I will always my body make sure that there is something base so that I don't fall down.  
It is what you say that intrinsic intelligence already working.  
So I am using my functionalities accordingly, my stability accordingly.  
So this is called intelligence.  
 **Speaker\_04 - 44:39**achieving goals in varying environments.  
So, you have to remember that please analyze this definition.  
Next.  
So, what is the second concept?  
You can categorize the intelligence.  
How you categorize the intelligence?  
Like that.  
 **Speaker\_04 - 45:04**What is the first vertical?  
Levels of intelligence.  
What is the first one you see?  
Information handling we call it as passive means your pen drive.  
 **Speaker\_01 - 45:19**Storing data.  
 **Speaker\_04 - 45:20**Suppose some information you just put in your pen drive and a pen drive will say that ray I have this information will it say that no it just stay like that passive.  
Only information handling, just a memory part.  
That is also intelligent because it is storing.  
There is a functionality called storing.  
It is doing that.  
That is also intelligent.  
So, little higher level, what is that?  
 **Speaker\_04 - 45:53**Problem notification.  
Suppose if your pen drive says that, Ray, memory is full.  
don't put everything what you see in the internet if it is giving the notification to you that is another level of intelligence that means it is responding it is seeing its status I am full bus don't keep right so little bit more the higher level of intelligence is decision making from this what you  
know If you build a smart system or a intelligent system, you must have a memory device, you must have a communication device, you must have a decision making device.  
What is that decision making device you call?  
Hardware fellows.  
What do you call?  
 **Speaker\_04 - 46:46**Decision making device.  
CPU.  
Fully you can tell.  
CPU means?  
central processing unit, smaller version, processor.  
That is what you call as a micro processor or microcontroller.  
Then from there Arduino or Raspberry Pi?  
 **Speaker\_04 - 47:11**Right.  
So microcontroller only became Arduino.  
That Raspberry Pi.  
Right.  
So this is what?  
you have.  
So, if you want to make a decision making capability, you must use the controller.  
 **Speaker\_04 - 47:27**If you want to make have that capability of information handling, you must have a memory device and you must have the notification.  
Notification comes through communication device.  
Communication device one example, antenna.  
So, this is what?  
defines at different levels.  
Next, another vertical is there.  
What is that?  
 **Speaker\_04 - 47:54**Location of intelligence.  
Have you heard the word called master mind?  
Right, not coaching center.  
You may be thinking coaching center.  
No.  
What is mean by master mind?  
Master mind.  
 **Speaker\_04 - 48:13**Do you have the master mind?  
Hey, don't lie.  
But did you decide and joined here?  
Your mother, father would have just tell.  
Okay.  
In a different ways.  
Somebody beat with hand, somebody beat with leg, it's okay.  
 **Speaker\_04 - 48:33**Boys know very well.  
Suppose if you say dad I will do in music because this fellow might have seen in movie and say that my interest is there in music and you have to join engineering.  
truly you tell.  
Many people came like no, you may become good engineer, no doubt about it.  
But many people decided you were way forward, am I right?  
So that is mastermind.  
That means where decisions are made is not within the system.  
 **Speaker\_04 - 49:06**It is away from the system.  
You just see intelligence at object.  
From that concept, you got the embedded systems.  
So always embedded systems are included with processor or microcontroller within.  
So what do you call that kind of intelligence?  
Intelligence within the system.  
That means processing happens where decisions are made where?  
 **Speaker\_04 - 49:40**Within the system.  
Not outside the system.  
There is another thing.  
What is that?  
Intelligence in.  
network somewhere decisions are made, you will follow that.  
So, this  
 **Speaker\_04 - 50:01**is the location of intelligence where your processor is located decides what kind of intelligence it is.  
It may be embedded intelligence, it may be remote intelligence.  
So that is where the concept called embedded systems came in where you have to use microcontroller either within the system or away from the system because of that intelligence in network there is a concept called  
intelligence in network there is a concept what is that concept wireless have you heard cloud Cloud, these days became very costly, especially after this AI evolution.  
Cloud have you heard?  
Yes or no, loudly.  
You heard about cloud net?  
 **Speaker\_04 - 51:00**What is the cloud concept?  
You send it, whether your Google server is there with you?  
Where it is.  
Server may be in US, but who is processing?  
There.  
Who are seeing the results?  
You.  
 **Speaker\_04 - 51:17**So where decisions are made or processing happening?  
Somewhere else?  
So intelligence in network.  
But you?  
What kind of system you are?  
You are embedded system because all decisions are made within.  
Not joining engineering, don't worry.  
 **Speaker\_04 - 51:39**That anyway your parents has the right because you are minor.  
Next, what is the third?  
Vertical of intelligence, aggregation level.  
You just see?  
What is the first one?  
Intelligent item.  
That means please talk to your kidney.  
 **Speaker\_04 - 52:02**You just ask how are you and tell me the response.  
It is not working I think.  
We do not have a medical center also don't worry.  
This fellow talking it seems seriously.  
It won't respond, okay?  
So please talk to your liver?  
I don't think I don't go below that, okay?  
 **Speaker\_04 - 52:31**Please talk to your brain.  
Sir, brain only talking according to me.  
Then how I can talk to brain?  
You are not your brain.  
Do you know that?  
Because one routine dialogue is there?  
You are not understanding my feelings.  
 **Speaker\_04 - 52:53**Have you heard?  
Is it the brains or you call it as heart?  
 **Speaker\_03 - 53:02**So there are two entities.  
 **Speaker\_04 - 53:04**Brain is not reasonable for all the stupidity you do.  
 **Speaker\_03 - 53:07**Just because you go and break up doesn't make sense.  
 **Speaker\_04 - 53:08**No, it's not brain.  
 **Speaker\_03 - 53:10**So you can talk to brain.  
 **Speaker\_04 - 53:12**If you are able to communicate with your subsystems, then your intelligence is, what is that?  
Your item.  
Intelligent item.  
So intelligent item means you should be able to communicate with subsystems.  
So each subsystem is intelligent again.  
Do you find that kind of systems?  
Have you seen that kind of systems?  
 **Speaker\_04 - 53:46**Take out your mobile phone.  
Thank you, sir.  
Search for mantish shrimp.  
 **Speaker\_03 - 53:57**M-A-I-N-T-I-S. Shrimp you can type.  
Body also communicates now.  
What the hell?  
Sir.  
 **Speaker\_04 - 54:12**No, I do not get tired, these fellows get tired already sleeping.  
 **Speaker\_03 - 54:16**Yes.  
Sir, but body already communicates within itself.  
 **Speaker\_04 - 54:20**No, mantisrim, you open.  
Ah, have you open?  
Ah, what do you see there?  
Mantisrim, two eyes are there?  
Ah, very beautiful eyes.  
 **Unknown speaker - 54:39**Right?  
 **Speaker\_04 - 54:39**MIT, developed a camera also, not Madras Institute of Technology, Massachusetts Institute of Technology, developed a camera still they are achieving that it has polarization light, polarized capability to distinguish polarized light.  
But what is the important thing is two eyes are independent processors.  
Yes.  
left eye works on its own, right.  
In Telugu one proverb is there.  
You should not tell to your left eye or left hand.  
That is true with this mantishtim.  
 **Speaker\_04 - 55:31**Both eyes are independent.  
They process independently, so they have a local processing system.  
So now can the mantishtrim communicate with the eye?  
Yes.  
So that kind of intelligence is called intelligent items.  
That kind of systems already there in the nature.  
You may not be.  
 **Speaker\_04 - 55:55**So second one is intelligent container.  
Now you understood anyway.  
Only single processing unit somewhere.  
Whether it work or not, it doesn't matter.  
So, that is called intelligent container.  
So, these are, this is the categorization of intelligence.  
Next.  
 **Speaker\_04 - 56:17**Another important thing, what is that?  
Dimensions of intelligence.  
Because some people say introvert.  
What is mean by introvert?  
Introvert.  
I am not telling pervert.  
Introvert.  
 **Speaker\_04 - 56:37**Introvert means always it like this.  
He or she doesn't want to interact with the external environment.  
That is called introvert.  
Am I right?  
Reasons can be many.  
But if you collect his functionalities together, that will come as one dimension of intelligence.  
You cannot say that he or she not intelligent.  
 **Speaker\_04 - 57:07**Here she intelligent only but that category is a separate dimension.  
Like that way collectively some functionalities together form the basis for one dimension of intelligence.  
What is the first one?  
Cooperative.  
So cooperative intelligence means system cooperate with the environment and get the cooperation from the environment.  
Is that intelligence?  
Using functionalities only.  
 **Speaker\_04 - 57:42**We go and give shake hand.  
What is the meaning?  
What is the meaning of that functionality?  
It's a part of cooperative intelligence because you want to make a relation.  
You are giving hand.  
No, shake hand, I'm saying.  
Giving hand means?  
 **Speaker\_04 - 58:00**No.  
Okay.  
 **Multiple speakers - 58:03**Shake hand.  
 **Speaker\_04 - 58:04**So that's a functionality part of cooperative intelligence.  
Actually you become lesser because of her.  
Right?  
What is the second one?  
Adaptability.  
Adaptability means environment is something but you are adjusting to environment using your functionalities.  
You are adjusting to the environment using your functionalities.  
 **Speaker\_04 - 58:30**Third.  
reactive means  
system is there, environment is there, but who will change what?  
In this case you do not adjust to the environment, you will change the environment.  
Suppose door is closed, you will come.  
What do you do?  
You open the door.  
 **Speaker\_04 - 58:59**You open the door and go outside.  
That means one functionality you executed in such a way that you reacted to the condition.  
You changed the environment.  
Am I right?  
That is set of those functionalities called reactive intelligence.  
Next.  
Now this is very interesting.  
 **Speaker\_04 - 59:19**Tell me what is mean by personality.  
Hide way to breadth length.  
Personality means.  
It's a dick size.  
Yeah, personality is a intelligence.  
Don't laugh.  
Some people are laughing.  
 **Speaker\_04 - 59:39**It's that personality, what is intelligence.  
No, personality is a intelligence.  
It's the product of your options.  
Only or unknownly, it's a intelligence.  
Personality means, what do you think?  
 **Speaker\_02 - 59:55**Behavior.  
Product of a behavior.  
Like you behave in some way and people categorize you.  
 **Speaker\_04 - 01:00:03**That fellow withdrawn his statement.  
Personality means in your opinion what?  
That's what I'm asking.  
No, don't expect I don't leave up to five o'clock.  
Because today I want to complete the syllabus.  
Personality means what?  
Stand.  
 **Speaker\_04 - 01:00:35**You don't need not to, okay.  
The EA got fed up and she left.  
This fellow saying that up to five o'clock I won't leave.  
 **Speaker\_05 - 01:01:01**Hey  
 **Speaker\_02 - 01:01:08**yo, Africans became American.  
 **Speaker\_04 - 01:01:12**Here all switches are on only.  
 **Speaker\_03 - 01:01:14**Yeah, there, that side.  
Personality.  
Nika, Nika.  
No, all are switched on.  
I don't know.  
 **Speaker\_04 - 01:01:38**That is not personality.  
Personality means.  
Personality means your opinion.  
Just tell your opinion, that's all.  
What is mean by personality?  
How you?  
 **Unknown speaker - 01:01:58**Okay.  
 **Speaker\_04 - 01:02:00**Give me that water bottle.  
Close tightly  
and give.  
Those fellows are  
 **Speaker\_05 - 01:02:26**sitting there, we will play.  
 **Speaker\_04 - 01:02:27**That is personal.  
What do you observe?  
His functionality is again and again and again same.  
That's why personality means credible character.  
Credible character.  
So, credible character means characters always associated with functionalities.  
Today I say I know, tomorrow I say no, I don't know.  
 **Speaker\_04 - 01:03:06**Day after tomorrow I say maybe.  
Next day I will say yes I know.  
That means my decision making is something wrong.  
Today I can lift 5 kgs.  
Tomorrow no I cannot lift.  
Day after tomorrow again I can lift 3 kg.  
Day after next day I can't lift 5 kg again.  
 **Speaker\_04 - 01:03:29**So your lifting functionality is not credible.  
So credible character generally known as personality.  
That means you should be able to believe that.  
Repeatedly it should execute in a same fashion.  
The functionalities must come out in a same way.  
So today it should not show one kind of behavior or tomorrow it should not show another kind of behavior.  
So that credible character is called personality.  
 **Speaker\_04 - 01:04:06**That credible character is always associated with credible functionalities.  
Right?  
So, in your system that is why testing is there?  
Software people know very well and mechanical people also know very well.  
Why testing is there?  
There is a separate person to test your software or hardware.  
Why?  
 **Speaker\_04 - 01:04:28**Then they will give a certificate quality control passed.  
Why?  
Ah, what they are testing?  
 **Multiple speakers - 01:04:35**Fail proof.  
 **Speaker\_04 - 01:04:37**That's all.  
They are just testing the personality, whether these functionalities are credible or not, durable or not, reliable or not.  
That is where reliability, durability came into picture.  
So if some system is actually exhibiting that credible character, then you have to see it as it has a personality intelligence.  
Personality is a intelligence.  
Next.  
What is the intelligence?  
 **Speaker\_04 - 01:05:14**Dimension.  
Human-like interaction, that is important for us.  
That is why we kept it as a dimension.  
So, human-like interactions.  
One.  
Second.  
Third.  
 **Speaker\_04 - 01:05:31**Come.  
People are looking whom I am calling.  
You pat that fellow?  
don't hit that pat only, pat generally calling your friend that's what you do right that's a mode of communication so these are all human like interactions previously how was your phone what a keypad but now touch screen touch is experiential to you as a user that's what you have sign what do you  
call that feature that emoji biometric face recognition next emotion recognition is there or sign language you'll do that right open CV that feature came from where generally when I come I'll do like this right so this is a sign language now what is the meaning of this according to mathematics  
according in the context of bathroom in the context of restroom it is a pass right in the context of cricket out in the context of mathematics same thing with the context of meaning is same this is human-like interaction.  
So, human-like interaction is what humans are experiential in terms of interaction, that is all.  
 **Speaker\_04 - 01:07:21**So, that is what the features come in your mobile phones or machines or somewhere, somewhere.  
So, if you accumulate all functionalities which are interactive to the user, collectively you call them as human-like interaction, intelligence.  
We have that.  
That's why you are able to communicate with others.  
Interact with others.  
Right?  
Next.  
 **Speaker\_04 - 01:07:50**Last one.  
Autonomy.  
We know automatic.  
Don't make autonomy and automatic same.  
Automatic is different.  
Your automatic is a single functionality.  
Yes or no?  
 **Speaker\_04 - 01:08:07**But autonomy is different.  
Right?  
So, your friend actually participated in a bank theft.  
Beside fellow.  
Bank theft.  
He participated in that.  
He said that you are my best friend.  
 **Speaker\_04 - 01:08:22**I am going to tell your name also.  
That time, your autonomy says that, no, I am not your friend.  
No, you will go to jail otherwise.  
So, autonomy is all self-decisive capability or self-decision making capability, right?  
According to the situation.  
Suppose your friend got the Nobel Prize and he is about to say that I am going to put your name also in the research paper so that you will get also get the share.  
Immediately what you say?  
 **Speaker\_04 - 01:09:03**Yes, please.  
Yeah, because we went for tea together.  
That time only idea came and I paid for tea.  
What anidhi?  
Yeah.  
So, this is the thing.  
Depending on the context and condition, your decisions may change.  
 **Speaker\_04 - 01:09:26**That ability is called ad hoc link.  
Right?  
So, if you give that functionality, set of functionalities to the system, if it is exhibiting autonomy what spadex did today, their autonomous bodies too went and attached it together, stayed correlated their communication systems then came out.  
That is, these are the different dimensions of intelligence.  
Please remember dimension of intelligence means not single functionality.  
It is a set of functionalities to exhibit that behavior.  
Right, next.  
 **Speaker\_04 - 01:10:11**Have you seen this diagram?  
Somewhere, what is that?  
Simply I will speak, if you are making any system Depending on the form, depending on the structure, the behaviors will change.  
If the behavior change, intelligence also change.  
That you remember, that's all.  
If the behavior change, intelligence also will change.  
Now the good question is, how intelligence depends on information?  
 **Speaker\_04 - 01:10:45**Because you made a form or structure to receive information through sensors.  
How they are correlated?  
That I will tell.  
Next.  
Have you seen these two?  
In tenth class or intermediate?  
What is equilibrium?  
 **Speaker\_04 - 01:11:08**What is equilibrium?  
Hey, you all know equilibrium means.  
That is the eighth class concept.  
Equilibrium means?  
Net force is zero.  
That means system is at stable.  
Stable state.  
 **Speaker\_04 - 01:11:31**Right?  
You always want to be in stable state or unstable state.  
Stable state right?  
That is why intelligence is there.  
Otherwise intelligence not needed.  
Suppose you want to be in any state I am happy.  
Then why intelligence is needed?  
 **Speaker\_04 - 01:11:51**Not needed.  
right so your system always wish to keep at stable state that's why there is a virtue existing called intelligence okay so in your material I already shared right I think dr. Anadip shared with you in that material one reading material is there by ash bay the scientist name is ash bay he explains  
the intelligence Drive I shared now already.  
In that drive one reading material is there.  
That is by Professor Ashbe.  
He is a scientist.  
He wrote, he explained intelligence with respect to simple mechanical terms.  
 **Speaker\_04 - 01:12:41**Why intelligence is there?  
Because your system always wish to maintain stability.  
That is why intelligence is there.  
Otherwise, intelligence is not needed.  
So, what is the basis of intelligence, the intention of the system to maintain the stability?  
That may be economically, that may be socially, that may be educationally, that may be personalist.  
Anything for that matter, health-wise, you always system wish to maintain the stability.  
 **Speaker\_04 - 01:13:23**That's why equilibrium concept is the basis for intelligence.  
What is the second one?  
Equilibrium, oh sorry, second one amplification.  
What do you need to amplify to maintain the intelligence?  
What do you need to amplify?  
You are all computer science people, not.  
There is another branch called IT, what is that?  
 **Speaker\_04 - 01:13:50**Information technology.  
These two are different?  
Computer science, engineering and information technology or both are same?  
Now what is this question mark faces?  
Whether IT and CSE both are same or different?  
Loudly.  
Different, right?  
 **Speaker\_04 - 01:14:19**Now tell me what is amplification.  
amplification means what you are going to increase the increase the oh you might have seen right a square equal to sorry I equal to somebody wrote a frequency I equal to a square so on so what is this a square A is amplitude, right?  
 **Multiple speakers - 01:14:55**So, what is I?  
 **Speaker\_03 - 01:14:57**Intensity.  
 **Speaker\_04 - 01:14:58**Ah, that means in the amplification what you are doing?  
Increasing the amplitude.  
Amplitude of what?  
Intensity.  
Information.  
Amplitude of information.  
How it is related to your so called intelligence?  
 **Speaker\_04 - 01:15:20**Yes?  
In the levels of intelligence what is the first one?  
What is the first one?  
 **Multiple speakers - 01:15:32**Information handling.  
 **Speaker\_04 - 01:15:34**Second one?  
Problem notification.  
Third one?  
 **Speaker\_03 - 01:15:37**Decision.  
 **Speaker\_04 - 01:15:39**You connect a decision making with information intensity.  
Any ideas?  
If more information is there whether your decision will be right or less information is there whether your decision will be right.  
More information.  
More information that is a common sense right.  
That means in order to make a right decision you have to amplify the information.  
That is where the concept of artificial intelligence came into picture.  
 **Speaker\_04 - 01:16:17**because you have limited information but you have to process in different ways to get the different interpretations so that intensity will increase so that decision will be correct.  
So if you want to make a right decision information intensity should be high that means intelligence is proportional to information intensity.  
Next.  
So, intelligence is proportional to information intensity.  
If you want to be stable, you must have more information amplitude and equally preempt to maintain your system stable.  
Now, all the intelligence came from biosystems.  
That is what I told already, because you are basically intelligent system.  
 **Speaker\_04 - 01:17:17**Everybody agree with that.  
Because not because you have brain.  
Brain is also part of intelligence system.  
Next.  
You read those lines.  
Words.  
Self-aware, self-configuration, self-organization, self-optimization.  
 **Speaker\_04 - 01:17:38**I already said the stand.  
Immediately what you did?  
took the instruction immediately what do you change?  
Configuration.  
You changed your configuration.  
So are you intelligent?  
Yes.  
 **Speaker\_04 - 01:17:57**You are intelligent.  
So next is organization.  
Is your bag with you?  
Is your bag with you?  
Are you awake?  
That also some doubt is there, sir.  
That fellow doing dhyanam actually, last half an hour.  
 **Speaker\_04 - 01:18:17**Deeper meditation.  
No, yoga is different.  
The fellow doing dhyan, deeper meditation, he's in galaxy actually.  
Roving somewhere.  
Right?  
So, self-organization means what?  
Have you taken food in the right time?  
 **Speaker\_04 - 01:18:40**Did you woke up in the right time?  
Did you come to the college in the right time?  
Some deviations will be there, don't worry.  
The deviation because of the some corrupt things added to your mind, that's all.  
Okay?  
Have you brushed in the morning?  
Sir, don't ask that question.  
 **Speaker\_04 - 01:18:59**Yes, right?  
That is organization.  
That means you are able to do your daily activities or not.  
That's all.  
Self-organization.  
Next, optimization.  
Is your chair comfortable for you?  
 **Speaker\_04 - 01:19:16**Is your chair comfortable for you?  
This fellow is also sleeper.  
So, it's so comfortable.  
I know that.  
And one fellow is in a deeper meditation.  
See, people are struggling.  
Mahakumbamela, that mehla, this mehla.  
 **Speaker\_04 - 01:19:32**This fellow sitting in triple IDDM, he is meditating.  
No kumbamela is needed.  
That's the thing.  
Okay?  
So, yeah, Mahakumbamala is intended for that purpose.  
That is only for deeper meditating, who aspiring to meditate deeper?  
Okay?  
 **Speaker\_04 - 01:19:53**But that fellow sleeping, don't take it serious.  
That fellow says not meditation.  
Optimization means,  
optimization means, can you pick right?  
That's all.  
Can you pick right?  
That's all.  
 **Speaker\_04 - 01:20:13**That is a word.  
That is a sentence.  
Can you pick right?  
Can you pick the right posture for chair?  
Could you do that?  
Yes.  
That's why you are able to sit.  
 **Speaker\_04 - 01:20:26**Could you pick the right college?  
Okay, don't ask that question.  
Sorry, sorry.  
Don't ask that question.  
Could you pick the right book?  
This is the optimization.  
That means selecting something right decision again depends on information intensity.  
 **Speaker\_04 - 01:20:54**Next.  
So, what is the basis of everything now?  
Now, intelligence we discussed, system we discussed, we are going deeper inside the system, we said optimization, this one, that one, everything.  
you have to consider the fundamental thing is feedback loops.  
So, how decision happens?  
Hit up.  
Oh, it is very difficult.  
 **Speaker\_04 - 01:21:36**You come.  
This fellow first here.  
No, I actually met you in the other birth also it seems.  
Take the bottle.  
Because all faces are very familiar.  
 **Speaker\_03 - 01:21:52**Record, record.  
 **Multiple speakers - 01:21:55**No, I don't want that water to spill on me, that's why.  
 **Speaker\_04 - 01:22:00**Open the cap lid.  
Okay.  
Close it.  
Now people may be expecting some magic, right?  
No, no.  
Don't expect that.  
I am also sleepy.  
 **Speaker\_04 - 01:22:14**Okay.  
Turn 180 degrees.  
Fine.  
Next, another 180. Open the lid.  
Turn 180. Turn 180,  
that was my instruction, am I right?  
But what does, why are you hesitating?  
 **Speaker\_04 - 01:22:45**Because my friend is intelligent.  
He is intelligent.  
Why he is not making the decision 180?  
If he is my real Shishya, he will do that.  
My guru told me, I will do that.  
but immediately disaster will happen right what stopping this person to execute that instruction if you understand that you will get the meaning of feedback loop so information is there or not there is another information that If he rotate 180 degrees, what happens?  
Water will come out.  
 **Speaker\_04 - 01:23:31**That information also is with him.  
Am I right?  
Immediately what is happening?  
There is a feedback loop.  
Don't do, don't do, don't do.  
Information is there, boss, don't do.  
There is a consequence.  
 **Speaker\_04 - 01:23:46**Consequence, related to the consequence, there is information.  
Again, he knows that.  
That's why that instruction is not executed.  
Got it?  
So, feedback loops or internal loops that helps you to decide executing functionalities and making decisions.  
So, while building the products, how to create a feedback loop?  
How to create a feedback loop?  
 **Speaker\_04 - 01:24:23**There is no other way, you have to use electronics or mechanical.  
components.  
That's why you don't hate them.  
You have to use electronics.  
It has to receive information and analyze is there any consequence, then execute.  
If there is a consequence, you should not execute.  
Am I right?  
 **Speaker\_04 - 01:24:43**So, somebody kept the football with iron.  
Iron football.  
You know that.  
Will you go and you hit it?  
You know what happens?  
Am I right?  
You are not going to hit it.  
 **Speaker\_04 - 01:24:58**So, information coming, but your feedback loop is saying that?  
Don't do.  
Negative.  
Go away.  
Away from that.  
So, that is why we have how many feedback loops?  
Two.  
 **Speaker\_04 - 01:25:15**Positive feedback and negative feedback.  
Next.  
So, what is positive feedback?  
You read them.  
Positive and negative feedback loops are also natural in biological system that is known.  
Positive or self-reinforcing feedback amplifies the current change in the system.  
Now he is stable right stand he will play.  
 **Speaker\_04 - 01:25:46**He is stable right that is He is making change in the system to achieve the goal.  
That means actually holding like this is not the natural state.  
He changing his state and executing that functionality to achieve that goal.  
Am I right?  
So what is that is the meaning?  
Current change.  
Amplifies the current change.  
 **Speaker\_04 - 01:26:16**Giving.  
Be ready.  
Is the system undergoing amplification?  
One more challenge.  
Ready?  
I will throw on the face.  
See, that fellow already is doing like that.  
 **Speaker\_04 - 01:26:34**What does it mean?  
It's a positive feedback.  
That means system is reconfiguring on its own to achieve the goal.  
That fellow know already the consequence.  
So that is positive feedback.  
That is reinforcing the change in the system.  
reinforcing the change in the system.  
 **Speaker\_04 - 01:26:55**What is negative feedback?  
Negative feedback.  
That fellow seriously writing, what you are writing?  
Oh, good point.  
No, you called it.  
This fellow not writing.  
Not good bad, bad boy.  
 **Speaker\_04 - 01:27:17**You stand in the corner, like this.  
Half foot, it should go like that.  
Ready?  
One, two, three.  
What happened?  
He fell.  
Again?  
 **Speaker\_04 - 01:27:36**Hey, this fellow not playing properly.  
I thought he will fall down.  
Hey, don't hurt my ego.  
I'll cut ten marks, okay?  
Yeah.  
Hey, you should not hurt the professor's ego.  
You know that, right?  
 **Speaker\_04 - 01:27:50**That's a fundamental rule.  
Ready?  
One, two, three.  
What he is doing?  
He is resisting the change.  
He means that system.  
System has natural tendency to resist the change.  
 **Speaker\_04 - 01:28:15**That is negative feedback.  
Got it?  
So that's why they say that you please recover from one fellow, love broken fifth time.  
He broke up fifth time without any shameless fellow feeling bad.  
Is there any meaning?  
Or one super senior is there, don't worry.  
That's what I'm saying.  
 **Speaker\_04 - 01:28:45**Fifth time broke up, then you are feeling bad.  
Here 130 times, no feeling?  
What do you call that response?  
What?  
What do you call that response?  
Positive feeling.  
Right?  
 **Speaker\_04 - 01:29:08**So, you say console.  
Console means?  
Console means?  
Telugu people know very well.  
Console means what?  
You are slowly bringing the system to normal state.  
That means what feedback loop you are creating?  
 **Speaker\_04 - 01:29:32**Negative feedback.  
Right?  
You are motivating.  
 **Speaker\_01 - 01:29:37**Positive.  
 **Speaker\_04 - 01:29:40**Personality development.  
You can achieve.  
You can do it.  
Many things they will tell that is positive.  
understand?  
These are all related to mind.  
Next.  
 **Speaker\_04 - 01:29:55**So, the if and but that programming things you know right while writing the code feedback loops how you will create simple thing is if.  
Next.  
Yeah now over intelligence is over levels over dimensions over then we went inside the system, system want to maintain the stability.  
It has to receive more and more information to take a good decision.  
So, for these decisions what are the basis feedback loops, positive feedback, negative feedback.  
So, we are inside the system now.  
Inside the system in order to make a decision there should be processing right.  
 **Speaker\_04 - 01:30:43**In order to make a decision there should be processing, there should be amplitude.  
amplification of information.  
So, how you amplify the information?  
Five years back your super senior came.  
He said that sir I am going to make a bike.  
I felt very happy.  
Somebody want to make a bike.  
 **Speaker\_04 - 01:31:07**Very good.  
Then he said that I am going to mount 24 sensors on that.  
How many sensors you have?  
You means human being.  
How many sensors you have five?  
In your system how many you want to mount?  
24. So that much information you want to grab then yours will not be like a bike.  
 **Speaker\_04 - 01:31:39**It will be like a stray dog.  
It will not be like a bike actually.  
So that many sensors can you use in order to increase the information intensity?  
You can use 3 or 4 max.  
Right?  
Even high end cars has only 4 to 5 sensors.  
That's all.  
 **Speaker\_04 - 01:32:01**They manage.  
So there you should not increase the sensor number, but you have to increase the information or interpretation.  
Same information you have to use for different kinds of interpretations or different kinds of decisions.  
right so that is where these techniques will come into picture AI techniques so AI techniques helps you AI means ah now we can talk because we know what is intelligence okay artificial intelligence techniques where they are going to be useful where you have less number of sensors credible sensors  
please remember please hello please remember There is a absolute misconception that without any sensor AI is going to work.  
Without sensor AI is useless.  
Useless.  
 **Speaker\_04 - 01:33:07**If you say that without understanding the sensor, I am going to build a AI algorithm, it's going to be disastrous.  
You please remember always.  
Data should be credible.  
If data is not credible, AI going to create a disaster.  
How many accident happened?  
Aeroplane crashes because of the AI mismanagement.  
Oh, you don't know that?  
 **Speaker\_04 - 01:33:44**Because our fellows, Boeing fellows, maneuvering algorithms, they wrote in AI.  
sensor is vertical, but this is thinking horizontal.  
Sorry, sensor is vertical and algorithm is thinking sensor is horizontal.  
Actually plane is going vertically down, three accidents, massive accidents after that only Boeing repetition gone down.  
Massive accidents, just because of the algorithm problem, that is why I am saying without a sensor if you want to approach the AI, it is going to be disastrous.  
If you want to build a AI system, you must understand whole system.  
Form, function, behavior, everything should be understood.  
 **Speaker\_04 - 01:34:33**Don't say that separately, I will do the AI course.  
Nonsense.  
Even that yeah, advertisements also like that only.  
Oh, I am taking 40 lakhs per annum.  
That donkey do not even know what is the answer.  
Is this you are going to do?  
Be very careful.  
 **Speaker\_04 - 01:35:00**So, first technique.  
What is the technique?  
Rule based system.  
Stand up.  
Wave your hand.  
This is all happening.  
Hi.  
 **Speaker\_04 - 01:35:21**Please sit down.  
Yeah, this is all happening according to.  
There is a clear variation.  
Yes or no.  
Right.  
Now, those who are having name Appana, please get up.  
Why is that below half he just got up and that fellow half he just got up and sat off that's a confusion you just look at it fuzzy logic always there is a possibility there may be there may be a finite probability for not know also.  
 **Speaker\_04 - 01:36:13**There is a probability for yes, there is a probability for no also.  
Suppose if I say if your name is starting with A, but you should be more than 70 kilo.  
Now decision is little, decision can you make?  
Little difficult, right?  
Because you need must, you must need one parameter, what is that?  
So that kind of situations or the conditions will be there where you cannot use rule based because conditions are more than one it is not your name starting with a your name starting with a but your weight must be less than 70 or more than 70 conditions are increasing so probabilities also will  
switch here and there am i right so That's why fuzzy logics are always possibilities between 0 and 1. Possibility 0.4 means not possible.  
 **Speaker\_04 - 01:37:21**0.6 is there.  
But do you think 0.4 is correct, 0.6 is wrong?  
No.  
So that kind of conditions, the context you have, there you have to use fuzzy logic.  
The neural network, artificial neural network.  
Get up.  
 **Speaker\_03 - 01:37:50**Not all.  
 **Speaker\_04 - 01:37:53**Neural network is not working.  
No, these four fellows are thinking they are most intelligent in the world.  
 **Speaker\_05 - 01:38:00**Okay?  
 **Speaker\_01 - 01:38:05**Come.  
Close the door.  
 **Speaker\_04 - 01:38:10**He's going out huh?  
No, right.  
You have to write assignment, right?  
That's why clothing?  
Yeah, please go and see.  
Now what happened tell me?  
I gave instruction.  
 **Speaker\_04 - 01:38:33**Okay, what is there?  
He went to the door.  
Every step, is he making a decision or not?  
Every step, he has to make a decision.  
Am I right?  
Now, suppose, let us assume.  
I will tell you, please give your mobile phone.  
 **Speaker\_04 - 01:39:02**You need not to give now.  
Don't throw on me.  
Mobile phone.  
I will give you only 10 rupees.  
How much?  
10 rupees.  
And you have your shirt and paint.  
 **Speaker\_04 - 01:39:17**Then, you have to go to Tirupati.  
How far Tirupati is from here?  
Okay, Tirupati is too far I think.  
You go to Ambatur.  
How much you have?  
10 rupees.  
And your mobile is also taken by me.  
 **Speaker\_04 - 01:39:37**Okay, data I will take it.  
Don't worry.  
So, mobile is taken, you have only 10 rupees with you.  
Then, what is your approach should be to go to Ambatur and come back again?  
We do not want to give holiday tomorrow if you do not come back.  
So, what is your approach should be?  
No, is it easy to do it or difficult?  
 **Speaker\_04 - 01:40:08**Why are you saying it is difficult?  
Suppose same thing I will do with the beggar.  
Outside beggars are there, I will just give him 10 rupees.  
You just go to Ambatur, touch this particular wall and come back.  
Will he do that or not?  
Do it.  
So for him it is not difficult.  
 **Speaker\_04 - 01:40:33**For you it is difficult.  
Why?  
 **Speaker\_02 - 01:40:35**If  
 **Speaker\_04 - 01:40:41**you understand that you will understand artificial neural network.  
Everything should be trained.  
Everything should be trained because you are not trained.  
You are not trained and you are not open for random changes.  
You may be open for changes, random changes, drastic changes.  
Right?  
That's why if you want to become entrepreneur, one particular rule is don't expect tomorrow.  
 **Speaker\_04 - 01:41:24**Tomorrow what happens, whatever happens if you are okay, you will become entrepreneur.  
Yesterday I read one article.  
about the micro max owner.  
Do you know micro max cell phone?  
You might have seen some 7 years or 8 years back.  
So it went to the peak at a point of time and it came down because of the 4G revolution.  
Because they made 3G phones, suddenly 4G revolution came, Indian company, micro max company went down.  
 **Speaker\_04 - 01:42:00**Can anybody expect after reaching 11,000 crores of business?  
After reaching 11,000 crores of business that means nearly $2 billion.  
Nearly.  
$2 billion business achieved.  
Then do you expect the sudden fall?  
But he didn't fell down.  
I was very happy to read that.  
 **Speaker\_04 - 01:42:32**He immediately... You have PhD, right?  
T-A-D-T, you have to come at 2 o'clock.  
You sit there.  
No, that fell on, new PhD.  
Don't worry.  
You have to come at 2 o'clock.  
What I was saying?  
 **Speaker\_04 - 01:43:01**Micromax.  
So that fellow didn't fail now.  
He immediately jumped into other business.  
I think related to some EV.  
And he sold it to Ratton India for some good profit.  
Then he started another company now.  
So tomorrow never be same.  
 **Speaker\_04 - 01:43:22**If that is the case.  
of your system then go for artificial neural network.  
That means you can't expect next step.  
If you cannot expect next step then you go for artificial neural network so that you can train it for changes.  
Training means not you are not giving the training it will train on its own.  
How to face the change?  
Training on not on the change, how to face the change.  
 **Speaker\_04 - 01:43:58**That is for artificial neural network, evolutionary competition also more or less same.  
So, these are the methods you are going to use by using Python or C language or whatever the coding language it does not matter.  
You are going to create algorithms for different conditions of your system.  
So conditions may be different.  
So some system which has to assist the administration people rule based is fine.  
If it has to assist in the laboratory, some system has to assist in the laboratory, you have to go to Fuzzy because you don't know the condition.  
Conditions may change.  
 **Speaker\_04 - 01:44:38**And if you are giving it to some hotel, restaurant, something, you have to go for neural network because different systems will come there.  
You can't define different functionalities.  
So, this is the way you have to use the algorithms to amplify or interpret the information.  
Information data is given, but how you are going to analyze the data and interpret something.  
You have to use these kind of things according to the situation.  
Next.  
So, finally you have to do this one.  
 **Speaker\_04 - 01:45:15**Okay.  
What I said?  
I will give you one metaphor.  
So I will give you one metaphor.  
You have to follow this procedure and build how many functionalities?  
One smart functionalities.  
I am not expecting too much from you.  
 **Speaker\_04 - 01:45:34**One smart functionality you have to demonstrate by April.  
So this is the 70% of your syllabus today completed.  
Next we converts, what I do is, now you should not say I do not know what is the definition of intelligence.  
Can anybody say what is the definition of intelligence?  
It is the agent's ability to achieve goals in wide range of environments.  
Do you know what is environment?  
Do you know what is system?  
 **Speaker\_04 - 01:46:15**Do you know what is ability?  
functionality means you have to create one functionality to justify sir this is smart okay so one example I will tell you just take out your mobile phone dog barking you just type that or barking dog look at your dog no our campus is full of dogs only no that's the second largest population  
after human being Working  
dog, go to images.  
You will get beautiful dog images, no?  
By friend sir.  
No, by friend is like dog only, it's okay.  
 **Speaker\_04 - 01:47:08**Dog images you got?  
Now just take five minutes, tell me.  
what functionality you define to justify a smart behavior right down define a functionality defined a functionality from the image  
and justify it as a smart behavior and justify it as a smart behavior in bracket first you write justify it as a smart behavior in bracket for a specific purpose  
or condition for a specific purpose or condition.  
Can somebody read it again?  
 **Speaker\_03 - 01:48:30**Condition or?  
 **Speaker\_04 - 01:48:37**Why if you would slow slightly that second, now these fellows will push  
it.  
Can you somebody read that again?  
define the functionality from the image and justify it as a smart behavior in bracket for a specific purpose or condition otherwise you can't become designer.  
So please do that in next five minutes then I will leave you.  
It's the greatest offer I can give you.  
 **Speaker\_02 - 01:49:17**You know different pictures have different meanings.  
consider this dog, you consider one dog tell which dog everything is this looks cute how does it look cute oh fuck no way I didn't see you talking okay this dog is bearing its fans to prevent injection raising its tail to indicate something.  
 **Speaker\_03 - 01:49:52**That is also smart.  
You are raising its tail.  
I like that only.  
See every dog has a raised tail.  
 **Speaker\_02 - 01:50:02**While barking you mean.  
 **Speaker\_03 - 01:50:04**See raised tail.  
 **Speaker\_04 - 01:50:04**So question is very clear please focus on that.  
Define the intelligent behavior out of one functionality that you can define from the image for a particular purpose or condition.  
Just  
I am curious to see whether you are going to achieve something in that or not.  
So same type of question if it comes to an exam you have to write not.  
Don't expect routine questions, what is intelligence?  
My question paper never be like that.  
 **Speaker\_04 - 01:50:58**Mostly analytical.  
It will test your analytical capabilities, not memory.  
So this is one example question, you please work it out.  
Another two minutes.  
and you should justify that it is smart behavior.  
Last one minute.  
Because last time I gave to your seniors, that is a smart dog, immediately these fellows went to build a robotic dog.  
 **Speaker\_04 - 01:52:09**I felt very bad.  
 **Speaker\_03 - 01:52:11**Why?  
 **Speaker\_04 - 01:52:12**And gave them less marks.  
Right.  
Yeah, tell me.  
So anyone voluntarily?  
Function, smartness and purpose.  
 **Speaker\_03 - 01:52:34**Function, smartness and purpose.  
 **Speaker\_04 - 01:52:35**Just three points.  
Anybody?  
 **Speaker\_02 - 01:52:39**Smartness is this.  
Yes.  
What is the function?  
This is the purpose.  
This is the function.  
 **Speaker\_03 - 01:52:48**Function is raising its tail.  
 **Multiple speakers - 01:52:50**To identify unknown personals.  
 **Speaker\_04 - 01:52:55**So identification is the functionality.  
Express hostility.  
To give notice to the owner.  
That is the basic thing.  
 **Speaker\_02 - 01:53:06**Why he has chosen that?  
 **Speaker\_04 - 01:53:08**Because we told.  
talk but it is barking function smart and no which is your functionality barking or identification I said only one functionality yes ma yes you only yeah barking is functionality I know that tell me opening mouth then Agalabia will release if I have both arrows, that's it.  
It won't close.  
Parking is a functionality.  
For what?  
Yes.  
To create sound for purpose.  
 **Speaker\_02 - 01:54:04**Bearing stands and creating noise to express its hostility to inform owners.  
 **Speaker\_04 - 01:54:10**So if you take the barking as a functionality, what is smartness?  
 **Speaker\_02 - 01:54:16**Hostility, expressing.  
What is smartness?  
 **Speaker\_04 - 01:54:19**Creating a specific sound.  
 **Speaker\_02 - 01:54:22**To express hostility.  
 **Speaker\_04 - 01:54:23**If it is full moon or no moon, sound will be?  
Yeah, take it.  
That howl sounding?  
If sound is changing a specific manner, barking sound is changing in a specific manner, can the owner identify some new fellow came according to him?  
Right?  
So if it is changing the barking sound as per the condition, then is that smartness or not?  
Purpose?  
 **Speaker\_04 - 01:54:56**Peculiar condition whenever it encounters, immediately it will change its barking state.  
right?  
You know one dog in my home, in Nandhyaal, in Andhra Pradesh.  
It will tell you before it, sir.  
Even it told us, train is going to miss.  
It has a sixth sense actually.  
You know one thing?  
 **Speaker\_04 - 01:55:24**That dog does upavasam every Friday.  
Afternoon it won't eat.  
Even if you feed the food, it will take and dig some soil, then keep that and close it.  
Will you consider it as intelligence?  
We do not know why it was doing like that.  
It died later.  
So, if the barking sound it is able to change that as smartness.  
 **Speaker\_04 - 01:55:54**Next.  
Any other thing?  
Because if sound need to be changed, the opening pattern should be different.  
That's why.  
Next.  
Sir already two things gone.  
One fellow said identify him which is the primary motto of dog.  
 **Speaker\_04 - 01:56:18**The second is barking that is also gone.  
What is the third functionality we have to tell?  
Is there anything else?  
Anybody?  
Don't tell who else.  
Tell functionality.  
survival of the fittest he is telling.  
 **Speaker\_04 - 01:56:33**What does it mean?  
Functionality you tell.  
Functionality is barking.  
Then?  
If functionality is dominant, what is smartness?  
See, sorry.  
Functionality is barking, then what is smartness?  
 **Speaker\_04 - 01:56:53**It will just fall under that what she said.  
To intimate owner, it will park in such a way.  
If it change something, it will be dominating other.  
It's like a barking pattern.  
That's all.  
You will see that.  
Directly you see when they are barking each other.  
 **Speaker\_04 - 01:57:16**Suppose some new dog comes, our triple IDDM dogs will bark in such a way.  
I don't imitate and show, okay, don't worry.  
You can observe.  
So that is what.  
So, this kind of metaphor you have to, now if I say you, you please build that functionality, demonstrate that smartness in reality.  
You use electronics coding and mechanical components, I do not mind.  
You build that same thing and realize by April 12th, that is what you have to do.  
 **Speaker\_04 - 01:57:50**That is all.  
Single functionality, smartness for a purpose.  
single functionality, arrow mark smartness, arrow mark for a purpose.  
So that is what I want in this semester because if I teach you every week you will be sitting like that only.  
This is what my experience is saying.  
Unless you experience the intelligence.  
unless you experience the smartness, you build something, you cannot learn.  
 **Speaker\_04 - 01:58:31**So, for this six, for next five months or four months kindly leave that hatred towards electronics, mechanical, these things, everything you use, be free, be open.  
Anyways, software is going to collapse, don't worry.  
By the time you complete the degrees, software will collapse.  
Do you know that?  
agents.  
You will please study on that how it is going to impact software you will come to know.  
So you have to update survival.  
 **Speaker\_04 - 01:59:09**So you please build experience so that skills will by default will improve.  
So that is the motive of this course.  
If you have any questions next two minutes you can ask.  
Thank you.  
So  
next week what you have to do?  
Any questions?  
 **Speaker\_04 - 01:59:46**Next week what do you have to do please write down already you wrote down it.  
Yes?  
No your metaphor is not barking dog I'm going to share one full folder with 50 images you can choose one out of that okay within next two days I will share with you okay and I will share with you the form Google form in which you have to enter ah team details how many should be there in the  
team loudly 10 members right so in that Google form you upload this you are chosen photograph also so that I will have a record so that at the end of the semester somebody cannot say that no you didn't assign something so group formation and choosing the metaphor should be done by next week got  
it that's all so next week onwards I am going to interact group wise So, just to improve the mutual knowledge, that is all.  
Because this 150 on 1 won't work, it is already collapsed.  
Because last 3 desks, first 2 desks all are sleeping only.  
 **Speaker\_04 - 02:01:16**I know that.  
So, this model is not going to work.  
So, we will make it 10 on 1. Okay?  
It's like a personalized interaction.  
So that impact will be high.  
Is that fine?  
 **Speaker\_00 - 02:01:33**Yes.  
 **Speaker\_04 - 02:01:33**Loudly.  
 **Multiple speakers - 02:01:36**Thank you.