Hello guys, Hope you enjoyed the last video.

This week we'll be learning what a well-posed learning problem is.
We'll design a Learning System and learn about the perspectives and issues in Machine Learning.

Okay dokie. So let us begin by considering a learning task.
Consider a computer program that learns to play checkers.
Now listen carefully.
It might improve its **performance** as measured by its ability to win at the **class of tasks** involving playing checkers games, through **experience** obtained by playing games against itself. In general, to have a well-defined learning problem, we must identify these three features : the class of tasks, the measure of performance to be improved, and the source of experience.

Read through the content provided to gain an in-depth understanding of what a well-posed learning problem is and answer the questions on the slide.

< Task 2 >
Now let's move on to designing a learning system.
While designing a learning system, the type of training experience we choose will have a significant impact on success or failure of the learner.
For example, in learning to play checkers, the system might learn from

direct training examples consisting of individual checker board states and the correct move for each. Alternatively, it might have available only **indirect** information consisting of the move sequences and final outcomes of various games played. In this later case, information about the correctness of specific moves early in the game must be inferred indirectly from the fact that the game was eventually won or lost.

Similarly the Target function chosen, representation for the Target Function selected and Function Approximation Algorithm adopted will have significant impact in the performance of the machine learning system.

I would like you to learn about designing a learning system in more detail and in order to do so read through the content provided.

I would suggest you to pause the video now, go through the content provided first and then continue watching the rest of the video.

<Task 3>

Now that you have learnt about what a well posed learning problem is and how to design a learning system, let us learn about different perspectives and issues in machine learning.

One useful perspective on machine learning is that it involves looking through a very large space of solutions to determine the best one that fits the observed data and any prior knowledge held by the learner. In case of checker's problem, the learner's task is to search through the vast possible solution space and find the one that is most consistent with the available training examples.

The checker's learning problem also raises a number of generic questions about machine learning such as

how do we know which algorithm to choose given a training example?

Or

how much training data is sufficient?

Or

what is the best way to reduce the learning task to one or more function approximation problems?

The field of machine learning raises many such questions and the rest of the course is about answering those questions.

I would like you to get acquainted with many more such issues faced in Machine Learning. To do so go through the content provided. And don't you forget answering the questions on the slide.

That is it from me this time.

In case you have any doubts drop a mail.

Thanks for watching the video.