MEETING 11
SMARTER ARTIFICIAL INTELLIGENT

A. LEARNING OBJECTIVES

In this chapter students will use adverb clause in sentences, Able to identify adverb clause in an article, Able to write sentences by using adverb clause , Able to speak about Smarter AI: Machine learning without negative data, understand reading text about Smarter AI: Machine learning without negative data and understand listening text about Smarter AI: Machine learning without negative data

B. DESCRIPTION OF ADVERB CLAUSE

A group of words that is function as an adverb in a sentences is called adverb clause. Adverb clause can describe verbs, adverbs, and adjectives. In common, adverb clauses add information that related to when, where, why, how, how much and in certain condition the action of sentence take place. adverb clause can be placed at the beginning of the sentence, in the middle of sentence or at the end of the sentence, depending on where is should be placed.

Example:

- ❖ In industrial revolution 4.0 you have to learn about computer technology <u>whether you like it or not.</u>
- ❖ Artificial intelligent takes important rules in every sector, i<u>f you want to make business</u>, you have better learn computer technology.
- ❖ <u>Unless you study hard,</u> you will pass the test.
- ❖ <u>Once they start the game,</u> they won't stop until their parents ask them to stop

Commas is need when an adverb of clause is placed in the middle.

Example:

- ❖ Students, <u>when they are requested to submit assignment,</u> are often requested extra time..
- ❖ Apple MacBook, <u>although is very expensive,</u> is very popular.
- ❖ Programming languages, <u>because they are machine language ,</u> can be difficult to understand by computer users.
- ❖ The computer programmer said, although coding is little complicated, is fun and easy to learn.

Adverb clause when it is put at the end of the sentence, it does not need punctuation.

Example :

❖ The lecturer stop explaining for a while <u>in case there is question from the students</u>.

❖ The artificial intelligent system is easy to understand <u>once you read few books about it.</u>

❖ I suggest you to start installing software <u>before you enter the coding class</u>

❖ the lecture explain the coding lesson <u>until the students understand.</u>

C. EXERCISES

1. Structure

1.1 Underline the adverb clause in sentences below

1) Since I'll be working hard, I'll turn off my phone.

2) Now that everyone has left the class, we need to leave soon too.

3) I never knew how complicated the machine language is until I take computer science majoring.

4) What we love about the civilization is the artificial intelligent.

5) While science fiction often portray artificial intelligent as robotic with human like characteristic, artificial encompasses anything that modern people need.

6) The crucial question is that what would happen if Artificial Intelligent system is better than human at thinking.

7) The creation of strong Artificial Intelligent might be the biggest even in human history that artificial intelligent can create super intelligent which can help human to eradicate war, poverty and disease

8) Where to start the lesson. It is clearly explained by the teacher.

9) Although artificial intelligent system is already used in daily life, computer users don't understand how does artificial intelligent work.

10) Students who think coding is hard are given clear explanation by the computer programmer.

11) The systems in computer look simple from the outside but there is actually very complicated system inside which computer science students need to know

1.2 Complete the sentences below from the words or words phrase in the box

> a. performance and productivity
> b. machine learning and deep learning
> c. cognitive science
> d. solving problem system
> e. artificial technology
> f. expert system
>
> g. spell corrector
> h. automation industry
> i. minimum time

1) It is suggested theory that _____ in school improved mentor by programming a computer that mentor will watch students problem solving skill.

2) Artificial intelligent technology tools include_____ which provides an argument report to upgrade explication of studying, reflecting, thinking, problem solving and learning.

3) Expert system in industries can save labor cost, reduce errors and give maximum out put in _____ because robots don't need lunch time and break time.

4) The main purpose of artificial intelligent system is the competence to find out what make people improve their _____ over time.

5) The expert system in _____ is extensively employed in 80% of its manufacturing process.

6) With _____ a mentor would show the students and recommend them in each part of his or her breakthrough to avoid making mistakes.

7) The expert system is extensively used in _____

8) One of the most popular expert system in Artificial technology is _____ and spell checker.

2. Speaking

2.1 practice the conversation below!

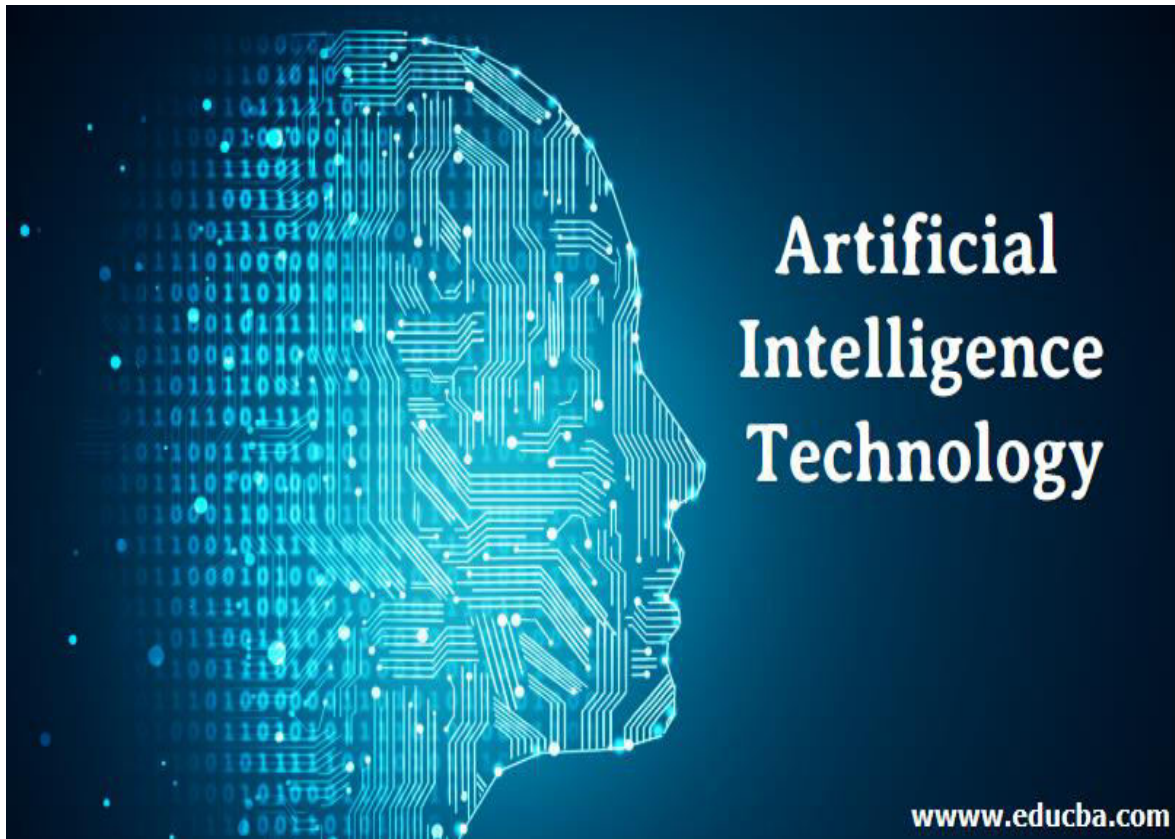|	
Jill	What is artificial intelligent?
Jack	To understand Artificial intelligent is easy, it is computer system that design to perform intelligent like human to be able to make solution and decision.
Jill	Why does call intelligent
Jack	Because it design to be smart like human.
Jill	Can you give me example of artificial intelligent that are use these days?
Jack	Personal assistant called Siri that offer by iPad and iPhone, Tesla is self driving car in automobile, Netflix is a technology that examine from a number of record to recommend movies based on your previous liking and reactions. And many more
Jill	Wow sound artificial intelligent really make everything easy for us. How does artificial intelligent work?
Jack	Artificial intelligent works by combining big data, iterating process and intelligent algorithm.
Jill	So what should I do if I want to make artificial intelligent system?
Jack	It means you have to learn machine learning algorithm in computer science natural language processing, phyton code, math, neuron science, machine learning and many other discipline,
Jill	Should I know all the them?
Jack	No. artificial intelligent can be built by a team. You can chose which subject is most interesting to you
Jill	Thank you very much for the information
Jack	Any time. Good luck

2.2 Discuss the question below

1) Is artificial intelligent important for modern life? Why

2) Can artificial intelligent be harmful for people?

3) What will belief in the future with artificial intelligent?

4) How can we apply artificial intelligent in our life?

5) How to start career in artificial intelligent?

6) What are the jobs that relate to artificial intelligent

7) What are the benefit of artificial intelligent ?

8) Will country with sophisticated artificial intelligent be super power?

Example of giving answer to discussion above!

Linda   Is artificial intelligent important for modern life? Why

Lili   Because Artificial intelligent is commonly used in our day to day life, it is slowly but sure introduced in all sectors.

Linda   Can artificial intelligent be harmful for people

Lili   Don't worry, artificial intelligent is created to make living more interesting easier, yes there is always bad person can misused it.

Linda   Will AI take over humans?

Lili   It is only hypothetical scenario which artificial intelligent become dominant and computer or robots will take control the planet.

Linda   How can artificial intelligent be applied in our life?

Lili   You can find Artificial intelligent application in our life such as optical character recognition, handwriting recognition, speed recognition,

Linda   How to start career in artificial intelligent?

Lili   You have to posses computer degree or mathematics degree

Linda   What are the jobs that relate to artificial intelligent

Lili   There are many such as machine learning engineer, data scientist, business intelligent developer, research scientist and many more.

Linda   What are the benefit of artificial intelligent ?

Lili   The advantageous of the artificial intelligent have started to be used these days are in communication , education , health, safety measure, traffic control, marketing shopping and many more.

Linda   Will country with sophisticated artificial intelligent be super power

Lili   I think it is possible. A country that has the most sophisticated technology will lead the word

3. **Reading**

3.1 Underline the adverb clause **in the reading text below!**

3.2 Read and record loud the reading text in your phone!

Smarter AI: Machine learning without negative data

A research team from the RIKEN Center for Advanced Intelligence Project (AIP) has successfully developed a new method for machine learning that allows an AI to make classifications without what is known as "negative data," a finding which could lead to wider application to a variety of classification tasks.

Classifying things is critical for our daily lives. For example, we have to detect spam mail, fake political news, as well as more mundane things such as objects or faces. When using AI, such tasks are based on "classification technology" in machine learning -- having the computer learn using the boundary separating positive and negative data. For example, "positive" data would be photos including a happy face, and "negative" data photos that include a sad face. Once a classification boundary is learned, the computer can determine whether a certain data is positive or negative. The difficulty with this technology is that it requires both positive and negative data for the learning process, and negative data are not available in many cases (for instance, it is hard to find photos with the label, "this photo includes a sad face," since most people smile in front of a camera.)

In terms of real-life programs, when a retailer is trying to predict who will make a purchase, it can easily find data on customers who purchased from them (positive data), but it is basically impossible to obtain data on customers who did not purchase from them (negative data), since they do not have access to their competitors' data. Another example is a common task for app developers: they need to predict which users will continue using the app (positive) or stop (negative). However, when a user unsubscribes, the developers lose the user's data because they have to completely delete data regarding that user in accordance with the privacy policy to protect personal information.

According to lead author Takashi Ishida from RIKEN AIP, "Previous classification methods could not cope with the situation where negative data were not available, but we have made it possible for computers to learn with only positive data, as long as we have a confidence score for our positive data, constructed from information such as buying

intention or the active rate of app users. Using our new method, we can let computers learn a classifier only from positive data equipped with confidence."

Ishida proposed, together with researcher Niu Gang from his group and team leader Masashi Sugiyama, that they let computers learn well by adding the confidence score, which mathematically corresponds to the probability whether the data belongs to a positive class or not. They succeeded in developing a method that can let computers learn a classification boundary only from positive data and information on its confidence (positive reliability) against classification problems of machine learning that divide data positively and negatively.

To see how well the system functioned, they used it on a set of photos that contains various labels of fashion items. For example, they chose "T-shirt," as the positive class and one other item, e.g., "sandal," as the negative class. Then they attached a confidence score to the "T-shirt" photos. They found that without accessing the negative data (e.g., "sandal" photos), in some cases, their method was just as good as a method that involves using positive and negative data.

According to Ishida, "This discovery could expand the range of applications where classification technology can be used. Even in fields where machine learning has been actively used, our classification technology could be used in new situations where only positive data can be gathered due to data regulation or business constraints. In the near future, we hope to put our technology to use in various research fields, such as natural language processing, computer vision, robotics, and bioinformatics." Adopted from https://www.sciencedaily.com/releases/2018/11/181126123323.html

3.3 Answer the question below

1) What has developed by RIKEN successfully?
2) Why Classifying things is important?
3) Give the example of separating positive and negative data!
4) What will happen if classification boundary is learned by the computer?
5) What is the difficulty of separating negative and positive technology?
6) What will happen to the app developer if user unsubscribe from the app?
7) What did Takashi Ishida say about positive data?
8) How did they test if the system functioned?
9) Who is Masashi Sugiyama?
10) What research fields will the technology probably use?

3.4 Complete the sentences (1-6) with the term (a-e) below:

> a. **AIP (Advanced Intelligent Project)**   e. **purchase**
> b. **Critical Classifying things**   f. **unsubscribes**
> c. **Classification technology**   g. **equipped**
> d. **Positive or negative**

1) _____ has improved new way for machine learning that permit all AI to create division that is named negative data.

2) _____ that we use daily to find spam mail, hoax political news, and others usual thing such as object or faces.

3) Dividing positive and negative data like positive data will be shot including happy   face   and   negative   data   shot   sad   face   is   done   by _____

4) When learning classification boundary, computer can decide whether a specific data is _____.

5) Costumers is easy to find who bought from positive data, but it is impossible to get data on costumers who didn't _____ from negative data .

6) The developer vanish the consumer's data because they have absolutely omit data if the consumer _____.

7) The computer could be allowed to learn separator only from positive data _____ with trust.

8) This invention can enlarge the distance of _____ where allocation technology can be used.

3.5 Write T for true statement and F for false statement, give true statement for the false one

1) Classifying things is not important for our daily lives.

   O True

   O False

2) Specific data can be decided whether it is positive or negative data classification boundary.

   O True

   O False

3) For the learning process, classification technology does not need positive and negative data .

   O True

   O False

4) Retailers can possibly predict data on customers who bought from negative data.

   O True

   O False

5) Finding data on customers who did not buy from negative data is possible

   O True

   O False

6) The apps developers will lose the user's data if a user subscribes the apps.

   O True

   O False

7) Takashi Ishida is a writer.

   O True

   O False

8) Classifying technology is possible to use in various research fields, such as natural language processing, computer vision, robotics, and bioinformatics in the future"

   O True

   O False

4. Listening

4.1 Listen to Sultan Issa Hampton talking about Smart Home Technology and write T for true statement and F for false statements.

1) Humans and machines won't work together.

       O True

       O False

2) How human brain work is already imitated by technology.

       O True

       O False

3) Ability of technology that augment human brain is increasing

       O True

       O False

4) Artificial technology will not influence people live.

       O True

       O False

5) Artificial intelligent system will improve people productivities.

       O True

       O False

6) Artificial intelligent will take over boring jobs.

       O True

       O False

7) Pessimist people believe that artificial intelligent cost very expensive and will be harmful to people live.

       O True

       O False

8) The write of The deep Learning Revolution" does not agree that artificial intelligent can make people smarter.

       O True

       O False

5. Writing

5.1 Complete the sentences below by using adverb clause

1) You need to remain optimist even if

_____

2) The class felt long because

_____

3) I won't allow you to see that movie even though

_____

4) We can get some new information as long as

_____

5) Whether you like it or not,

_____

6) If you submit your paper on time,

_____

7) Unless you study hard,

_____

8) Because I like working with computer,

_____

9) Once they start working with the computer,

_____

10) Although she is certified programmer,

_____

11) As we bought the gadget,

_____

5.2 Translate the sentences below!

1) Since I'll be working hard, I'll turn off my phone.

   _____

2) Now that everyone has left the class, we need to leave soon too.

   _____

3) Unless you put in more hours, I cannot recommend you for the promotion.

   _____

4) As soon as I saw you, I knew something was wrong.

   _____

5) Frank ran the race as though his life depended on it.

   _____

6) We can open online business as soon as you finish your computer degree.

   _____

7) I never knew how complicated the machine language is until I take computer science majoring.

   _____

8) What we love about the civilization is the artificial intelligent.

   _____

9) While science fiction often portray artificial intelligent as robotic with human like characteristic, artificial encompasses anything that modern people need.

   _____

10) An important question is what will happen if quest of strong AI succeeds and AI system become better that human at all cognitive tasks.

   _____

11) The creation of strong artificial intelligent might be the biggest even in human history that artificial intelligent can create super intelligent which can help human to eradicate war, poverty and disease.

   _____

   _____

   _____

6. Key words

English	Synonym	Indonesian
Allows, available, boundary, certain, classifications, confidence, constraint contains, detect, determine, divide, for instance, impossible, include, mundane, predict, requires, retailer, tasks,		

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