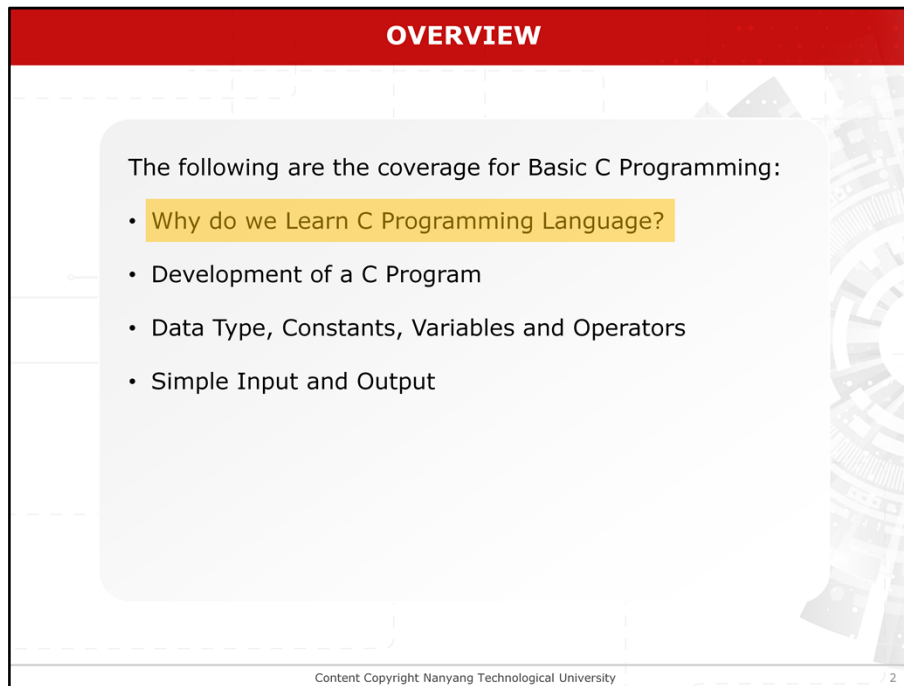


This lesson is on Basic C-Programming

The slide features a red header with the word "OVERVIEW" in white. Below the header, a light gray rounded rectangle contains the text "The following are the coverage for Basic C Programming:" followed by a bulleted list. The first bullet, "Why do we Learn C Programming Language?", is highlighted with a yellow background. The background of the slide shows a faint, stylized image of a person in a white lab coat. At the bottom, a thin gray bar contains the text "Content Copyright Nanyang Technological University" on the left and the number "2" on the right.

OVERVIEW

The following are the coverage for Basic C Programming:

- Why do we Learn C Programming Language?
- Development of a C Program
- Data Type, Constants, Variables and Operators
- Simple Input and Output

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Basic C Programming

There are 4 main sections to cover for Basic C Programming as shown.

- Why Learning C Programming Language?
- Development of a C Program
- Data Types, Constants, Variables and Operators
- Simple Input and Output

This video lesson focuses on the first part: Why learning C-Programming language.

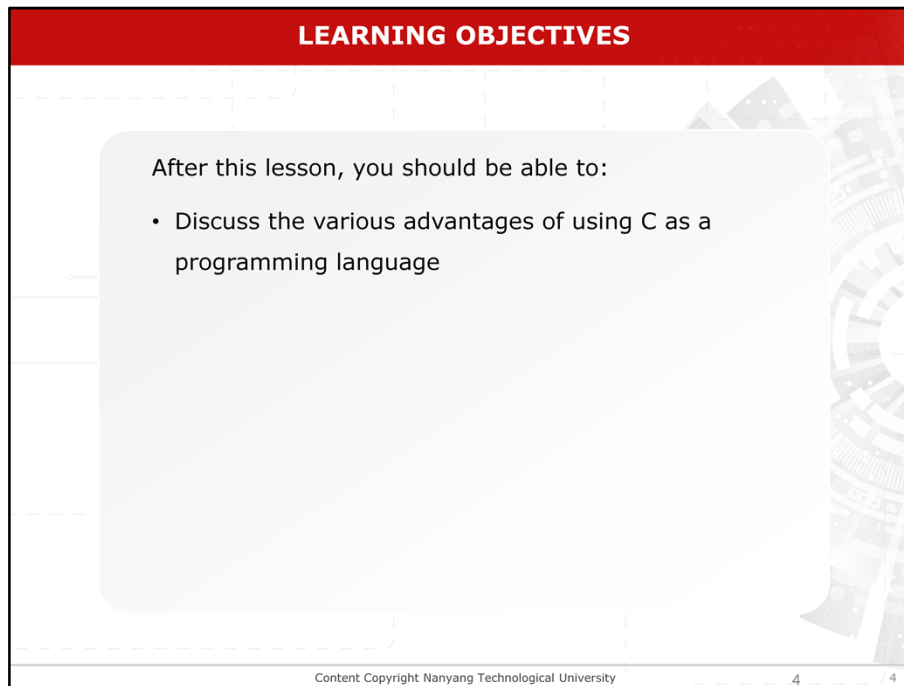
LEARNING OBJECTIVES

After this lesson, you should be able to:

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The slide features a red header with the text 'LEARNING OBJECTIVES'. Below the header is a large, light gray rectangular box with rounded corners, intended for listing learning objectives. The text 'After this lesson, you should be able to:' is positioned at the top left of this box. The background of the slide has a faint, stylized architectural pattern on the right side. At the bottom, there is a footer containing the text 'Content Copyright Nanyang Technological University' and the number '3' on both the left and right sides.

After this lesson, you should be able to:
[Pause 1 sec]



LEARNING OBJECTIVES

After this lesson, you should be able to:

- Discuss the various advantages of using C as a programming language

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Discuss the various advantages of using C as a Programming Language
[Pause 1 sec]

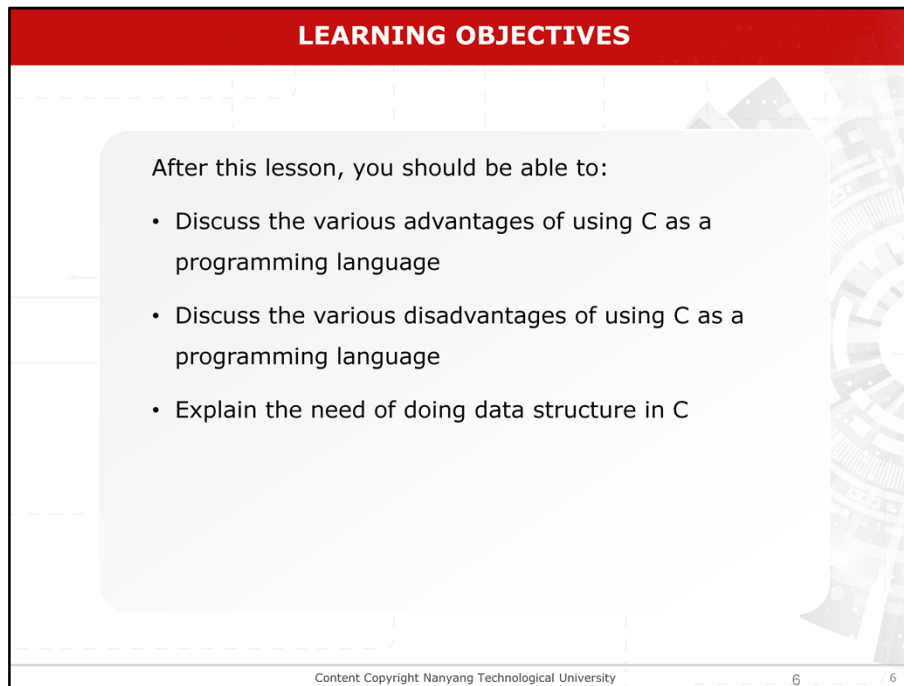
LEARNING OBJECTIVES

After this lesson, you should be able to:

- Discuss the various advantages of using C as a programming language
- Discuss the various disadvantages of using C as a programming language

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Discuss the various disadvantages of using C as a Programming Language.
[Pause 1 sec]



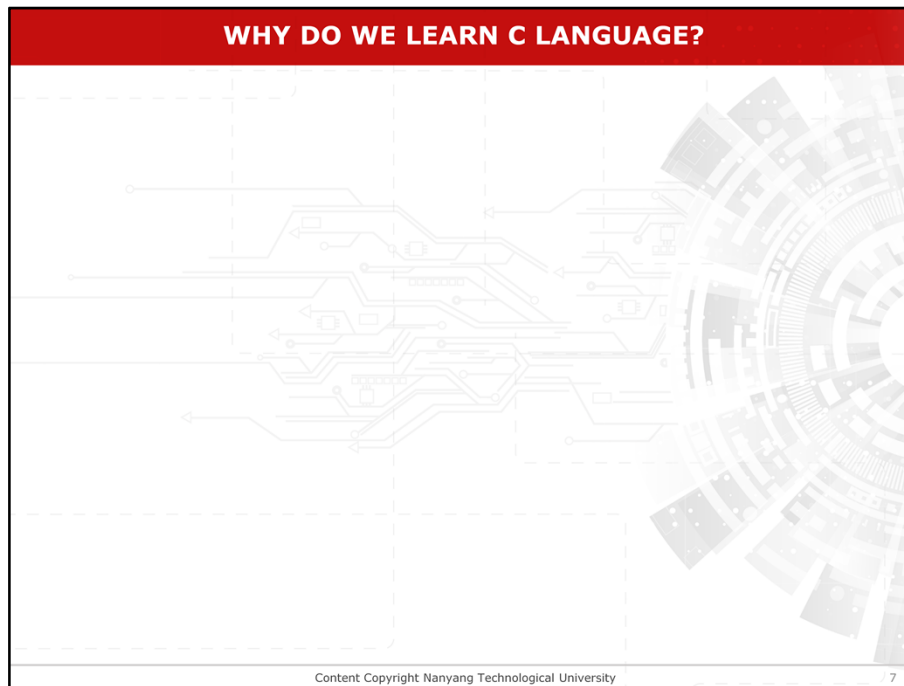
LEARNING OBJECTIVES

After this lesson, you should be able to:

- Discuss the various advantages of using C as a programming language
- Discuss the various disadvantages of using C as a programming language
- Explain the need of doing data structure in C

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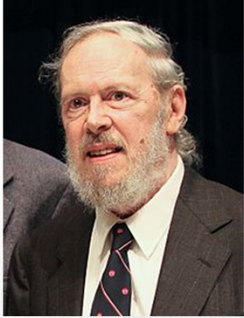
Explain the need of doing data structure in C.
[Pause 1 sec]



Why do we learn C language?

[Pause 1 sec]

WHY DO WE LEARN C LANGUAGE?



Dennis Ritchie

- C Programming language was created by Dennis Ritchie at AT&T Bell Laboratories in 1972.

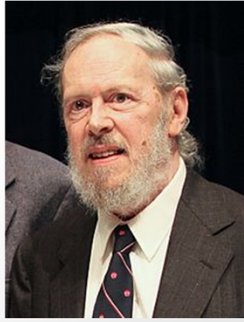
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Why Learning C?

C programming language was created by Dennis Ritchie at AT&T Bell Laboratories in 1972.

[Pause 1 sec]

WHY DO WE LEARN C LANGUAGE?



Dennis Ritchie

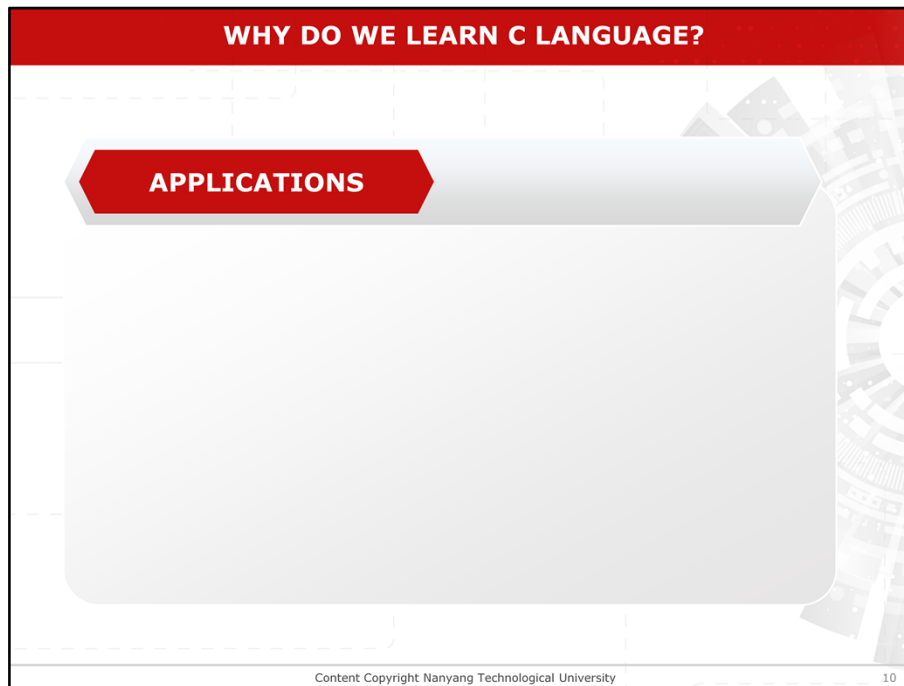
- C Programming language was created by Dennis Ritchie at AT&T Bell Laboratories in 1972.
- The language was originally designed as a system software development language to be used with the Unix operating system.

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9

The language was originally designed as a system software development language to be used with the Unix operating system.

[Pause 1 sec]



Over the past four decades, C has become one of the most popular programming languages for developing a wide range of applications including
[Pause 1 sec]

The slide features a red header with the text "WHY DO WE LEARN C LANGUAGE?". Below this, a red arrow-shaped box contains the word "APPLICATIONS". Underneath, a light gray box lists "• Word processors". The background of the slide has a faint, stylized image of a gear or mechanical part. At the bottom, there is a footer with the text "Content Copyright Nanyang Technological University" and the number "11".

WHY DO WE LEARN C LANGUAGE?

APPLICATIONS

- Word processors

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word processors
[Pause 1 sec]

WHY DO WE LEARN C LANGUAGE?

APPLICATIONS

- Word processors
- Graphics applications

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graphics applications
[Pause 1 sec]

WHY DO WE LEARN C LANGUAGE?

APPLICATIONS

- Word processors
- Graphics applications
- Database management systems

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database management systems

WHY DO WE LEARN C LANGUAGE?

APPLICATIONS

- Word processors
- Graphics applications
- Database management systems
- Communication systems

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communication systems
[Pause 1 sec]

WHY DO WE LEARN C LANGUAGE?

APPLICATIONS

- Word processors
- Graphics applications
- Database management systems
- Communication systems
- Expert systems

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expert systems
[Pause 1 sec]

The slide features a red header with the title "WHY DO WE LEARN C LANGUAGE?". Below the header is a light gray box with a red arrow-shaped tab on the left containing the word "APPLICATIONS". Inside this box is a bulleted list of applications. The background of the slide has a faint, stylized image of a gear or mechanical part on the right side.

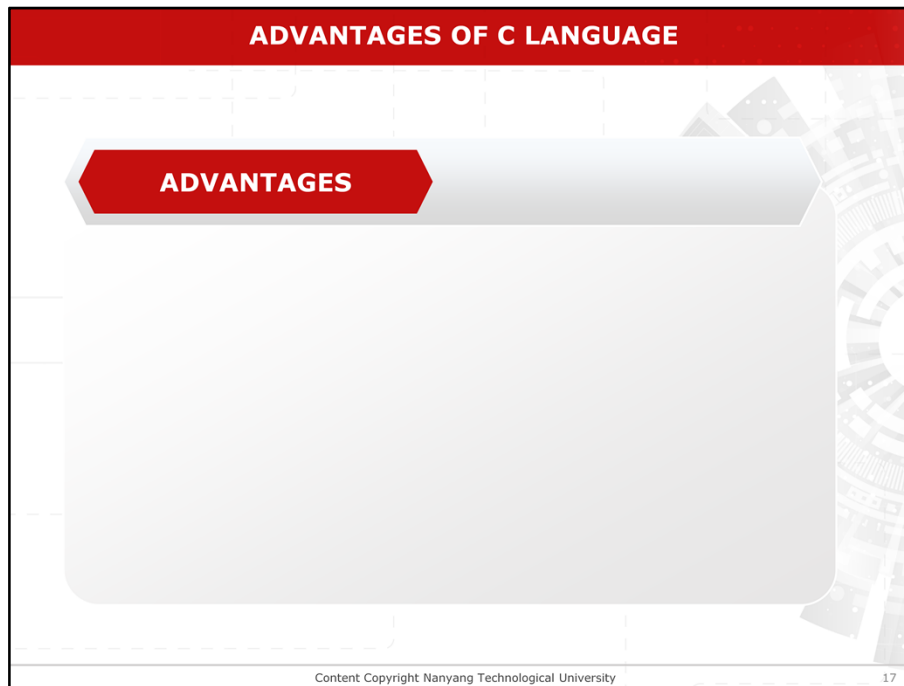
WHY DO WE LEARN C LANGUAGE?

APPLICATIONS

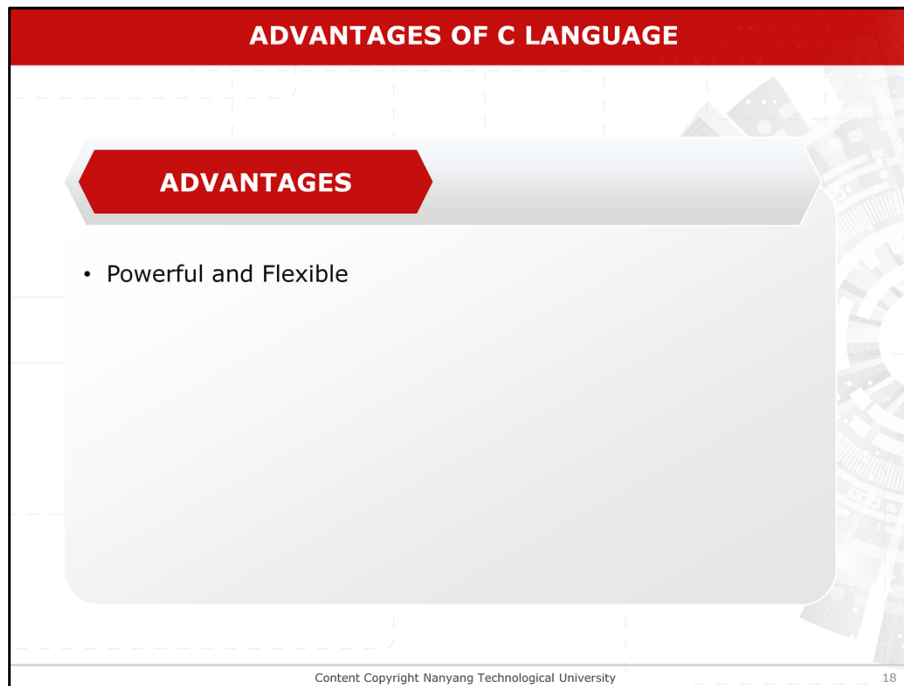
- Word processors
- Graphics applications
- Database management systems
- Communication systems
- Expert systems
- Other engineering applications

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and other engineering applications
[Pause 1 sec]



Advantages
[Pause 1 sec]



Advantages

The C language has a number of advantages over other conventional programming languages such as BASIC, PASCAL and FORTRAN. It is powerful and flexible.

C is a powerful and flexible language. C has been used to implement the Unix operating system. Compilers for many other languages such as FORTRAN and BASIC are written in C. Moreover, C also provides the freedom and control in developing programs. It is easy to perform operations on manipulating bits, bytes and addresses using operators and pointers. C also supports programming over hardware and peripherals.

ADVANTAGES OF C LANGUAGE

ADVANTAGES

- Powerful and Flexible
- Efficient

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Efficient

C is an efficient language. As C is a relatively small language, efficient executable programs can be generated from C source codes. C programs are compact in storage requirements and can be run very quickly.

[Pause 1 sec]

ADVANTAGES OF C LANGUAGE

ADVANTAGES

- Powerful and Flexible
- Efficient
- Portable

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Portable

A C program written in one type of computer system can be run on another type of computer system with little or no modification. As C compilers are available for a wide range of systems from personal computers to mainframes, it is easy to port C programs from one hardware platform to another.

[Pause 1 sec]

ADVANTAGES OF C LANGUAGE

ADVANTAGES

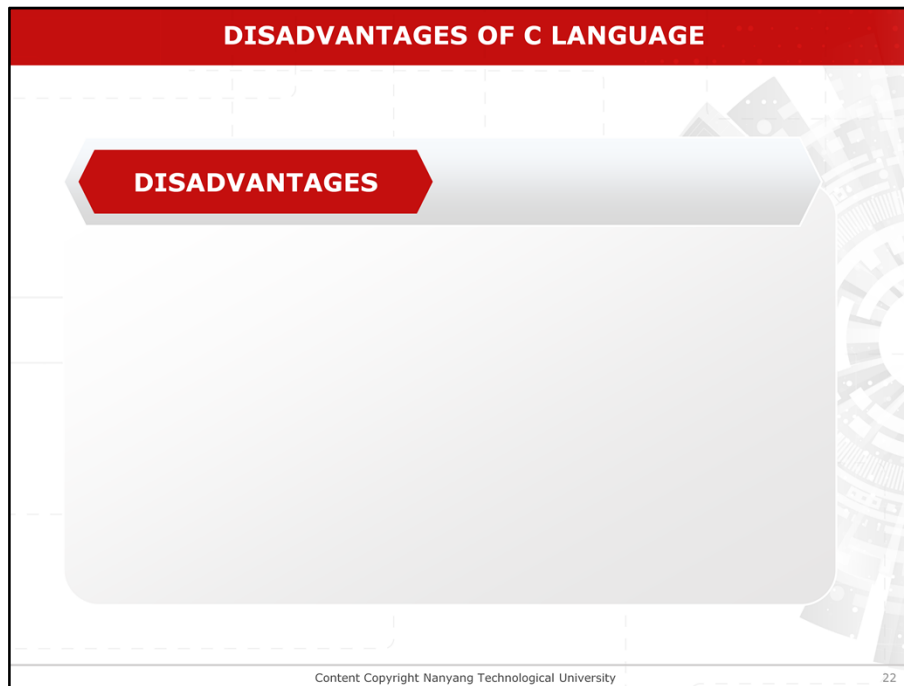
- Powerful and Flexible
- Efficient
- Portable
- Structured and Modular

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Structured and Modular

C has features to enable the creation of well-structured programs that are easy to read. C programs can also be written in functions, which can be compiled and tested separately. Large and complex systems can be written and tested as modules by different people, these modules are then combined into a single program. The functions and modules can also be reused in other applications.

[Pause 1 sec]



However, C also has a few disadvantages
[Pause 1 sec]

DISADVANTAGES OF C LANGUAGE

DISADVANTAGES

- Free style

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The free style of expression in C can also make it difficult to read and understand.
[Pause 1 sec]

DISADVANTAGES OF C LANGUAGE

DISADVANTAGES

- Free style
- Not strongly-typed

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In addition, as C is not a strongly-typed language such as PASCAL and JAVA, it is the programmer's responsibility for ensuring the correctness of the program.
[Pause 1 sec]

DISADVANTAGES OF C LANGUAGE

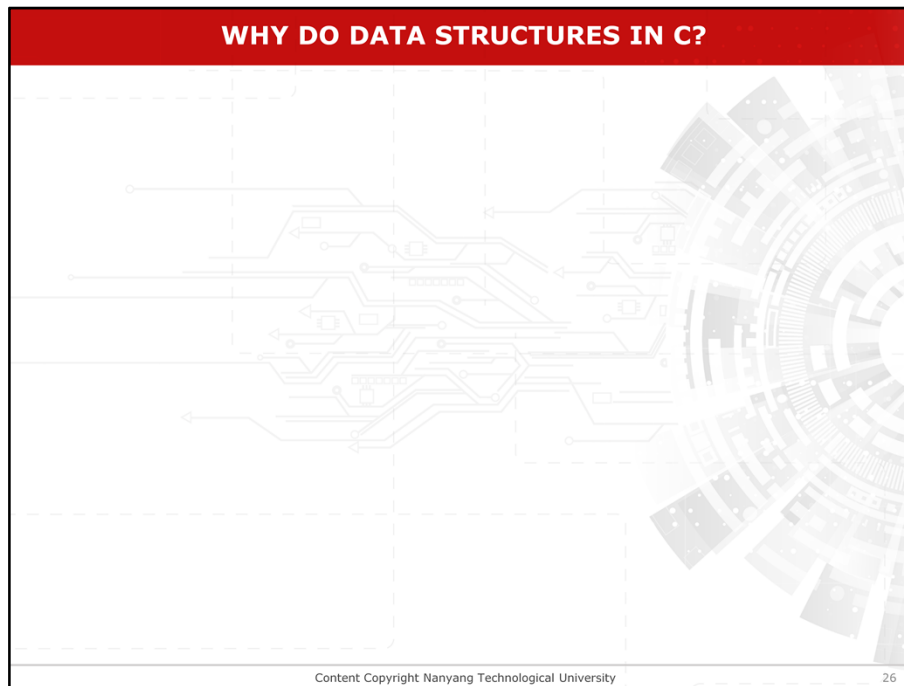
DISADVANTAGES

- Free style
- Not strongly-typed
- Use of pointers

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Pointer in C is a very useful feature, however, it can also cause programming errors that are difficult to debug and trace if it is not used properly. Nevertheless, these drawbacks can be overcome if good programming style is adopted.

[Pause 1 sec]



Why do Data structure in C?
[Pause 1 sec]

WHY DO DATA STRUCTURES IN C?

- Efficient

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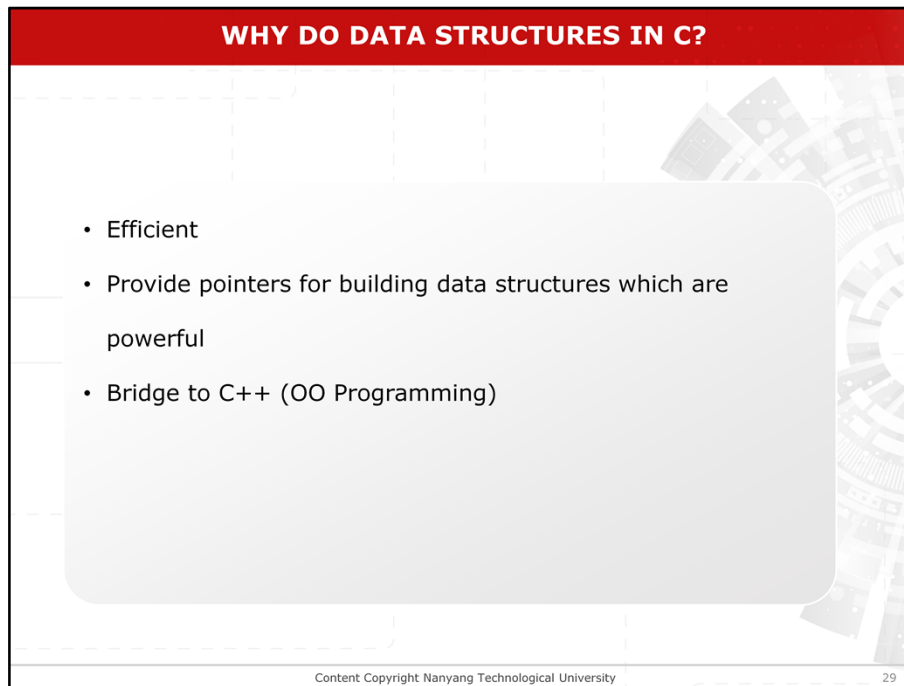
It is efficient.
[Pause 1 sec]

WHY DO DATA STRUCTURES IN C?

- Efficient
- Provide pointers for building data structures which are powerful

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Provide pointers for building data structures which are powerful
[Pause 1 sec]

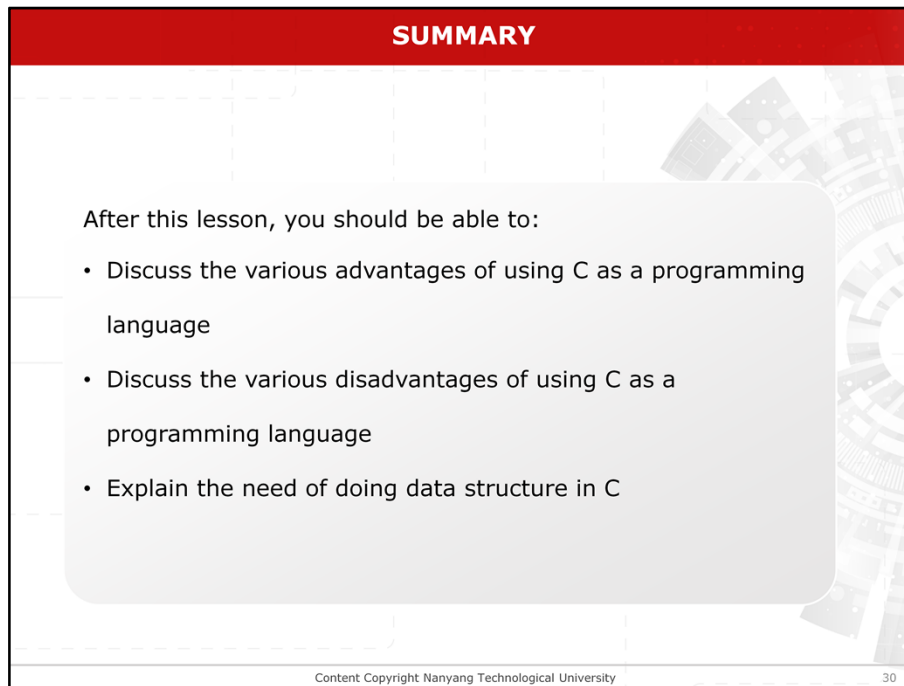


WHY DO DATA STRUCTURES IN C?

- Efficient
- Provide pointers for building data structures which are powerful
- Bridge to C++ (OO Programming)

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Bridge to C plus plus and Object oriented programming
[Pause 1 sec]



SUMMARY

After this lesson, you should be able to:

- Discuss the various advantages of using C as a programming language
- Discuss the various disadvantages of using C as a programming language
- Explain the need of doing data structure in C

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In summary, after viewing this video lesson, you should be able to discuss the advantages and disadvantages of using C as a programming language.
[Pause 1 sec]