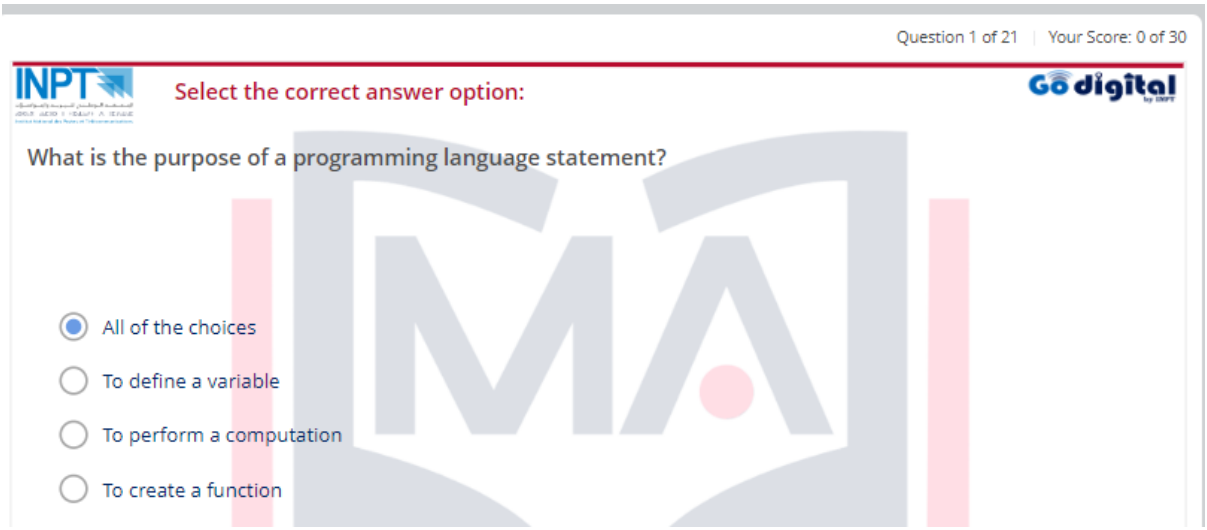
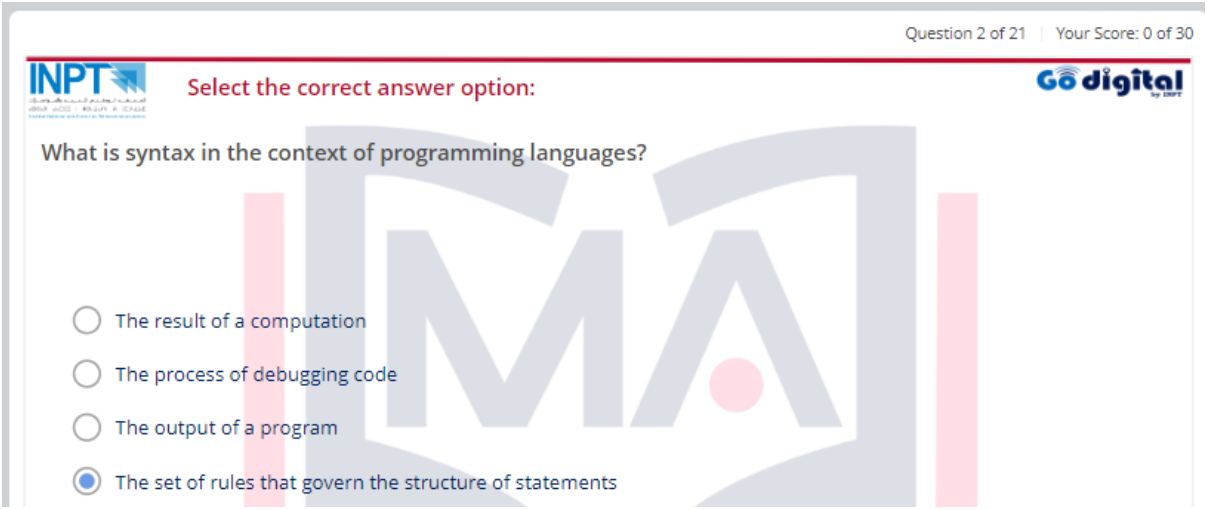
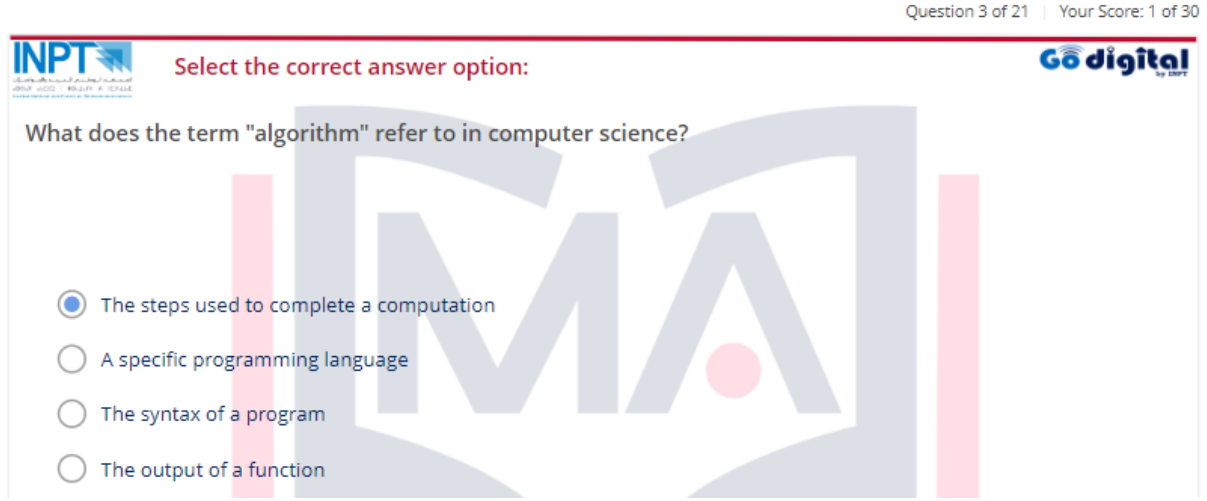
English 1


Question 1 of 21 | Your Score: 0 of 30
INPT
Select the correct answer option:
Go digital
What is the purpose of a programming language statement?
All of the choices
To define a variable
To perform a computation
To create a function


Question 2 of 21 | Your Score: 0 of 30
INPT
Select the correct answer option:
Go digital
What is syntax in the context of programming languages?
The result of a computation
The process of debugging code
The output of a program
The set of rules that govern the structure of statements


Question 3 of 21 | Your Score: 1 of 30
INPT
Select the correct answer option:
Go digital
What does the term "algorithm" refer to in computer science?
The steps used to complete a computation
A specific programming language
The syntax of a program
The output of a function

Question 4 of 21 | Your Score: 2 of 30

INPT

Select the correct answer option:

Go digital

Who is considered one of the fathers of algebra and contributed to the term "algorithm"?

- Edsger Dijkstra
- Grace Hopper
- Alan Turing
- Muḥammad ibn Mūsā al-Khwārizmī

Question 5 of 21 | Your Score: 4 of 30

INPT

Select the correct answer option:

Go digital

What is the purpose of the "Big O notation" in computer science?

- All of the choices
- To represent the complexity of an algorithm
- To create functions
- To define variables

Question 6 of 21 | Your Score: 3 of 30

INPT

Select the correct answer option:

Go digital

Which sorting algorithm has a complexity of N squared?

- Merge Sort
- Quick Sort
- Selection Sort
- Bubble Sort

Question 7 of 21 | Your Score: 4 of 30

Select the correct answer option:

In Merge Sort, what is the computational complexity expressed as?

- ○ N squared
- ◉ N log N
- ○ N
- ○ Log N

Question 8 of 21 | Your Score: 5 of 30

Select the correct answer option:

What classic algorithmic problem involves finding the fastest route in a network of nodes connected by lines?

- ○ Conditional statements
- ◉ Graph search
- ○ Sorting
- ○ Exponent calculation

Question 9 of 21 | Your Score: 6 of 30

Select the correct answer option:

Who invented Dijkstra's algorithm for graph search?

- ○ Grace Hopper
- ○ Alan Turing
- ◉ Edsger Dijkstra
- ○ Muḥammad ibn Mūsā al-Khwārizmī

Question 10 of 21 | Your Score: 9 of 30

INPT

Select the correct answer option:

Go digital

What is the improvement made to Dijkstra's original algorithm, reducing its complexity?

- ○ Bubble Sort
- ◉ Log N
- ○ N log N plus the number of lines
- ○ N squared

Question 11 of 21 | Your Score: 7 of 30

INPT

Choose whether the statement is true or false

Go digital

In programming, statements are executed sequentially from top to bottom.

- ◉ **True**
- ○ **False**

Question 12 of 21 | Your Score: 8 of 30

INPT

Choose whether the statement is true or false

Go digital

The term "algorithm" comes from the Greek word "logos."

- ○ **True**
- ◉ **False**

Question 13 of 21 | Your Score: 9 of 30

Choose whether the statement is true or false

The complexity of an algorithm is determined by the number of statements it contains.

- ○ True
- ◉ False

Question 14 of 21 | Your Score: 10 of 30

Choose whether the statement is true or false

Merge Sort is less efficient than Selection Sort.

- ○ True
- ◉ False

Question 15 of 21 | Your Score: 11 of 30

Choose whether the statement is true or false

Dijkstra's algorithm was originally conceived with a complexity of N factorial.

- ○ True
- ◉ False

Question 16 of 21 | Your Score: 12 of 30

Choose whether the statement is true or false

The purpose of the Big O notation is to represent the size of input data.

- ○ True
- ◉ False

Question 17 of 21 | Your Score: 13 of 30

Choose whether the statement is true or false

In Merge Sort, the merging process involves comparing and sorting individual items in two arrays.

- ◉ True
- ○ False

Question 18 of 21 | Your Score: 14 of 30

Choose whether the statement is true or false

Graph search algorithms are primarily used for sorting arrays.

- ○ True
- ◉ False

Question 19 of 21 | Your Score: 16 of 30

INPT

Choose whether the statement is true or false

Go digital

The complexity of Dijkstra's algorithm is reduced by considering the number of nodes, times the log of the number of nodes, plus the number of lines.

- (●) True
- ( ) False

Question 20 of 21 | Your Score: 15 of 30

INPT

Choose whether the statement is true or false

Go digital

Dijkstra's algorithm is commonly used in applications like Google Maps to find the best route.

- (●) True
- ( ) False

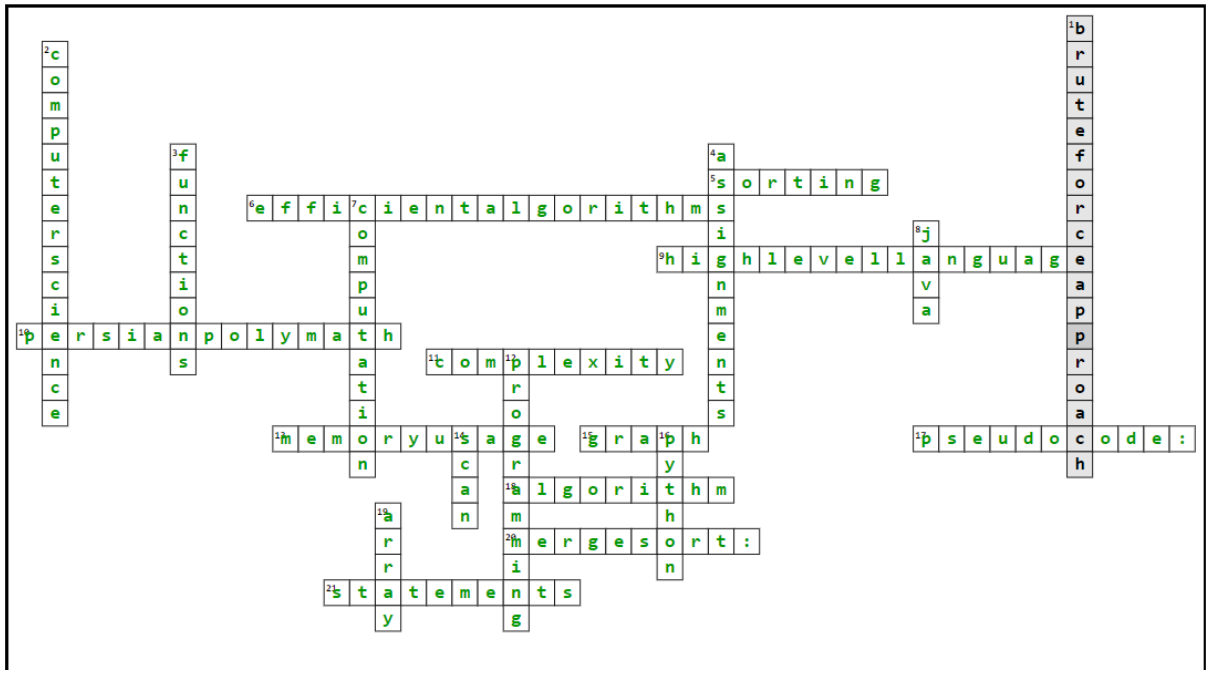
Question 21 of 21 | Your Score: 16 of 30

INPT

Drag and drop the words to their places

Go digital by INPT

1. An algorithm is the specific steps used to [perform] a computation.
2. The term " [algorithm] " originated from the Persian polymath Muḥammad ibn Mūsā al-Khwārizmī.
3. The Big O notation is used to express the [complexity] of an algorithm.
4. In Selection Sort, the [computational] complexity is N squared.
5. In Merge Sort, the computational complexity is N times the [log] of N.
6. Dijkstra's algorithm was designed to find the fastest route in a network of [nodes] .
7. The original complexity of [Dijkstra's algorithm] was N squared.
8. The improved complexity of Dijkstra's algorithm includes the number of nodes times the [log] of the number of nodes, plus the number of [lines] .
9. Graph search algorithms are commonly used in applications such as [Google Maps] to find [optimal routes] .
10. The process of comparing and sorting individual items in two arrays is known as [merging] in Merge Sort.



English 2

Question 1 of 21 | Your Score: 0 of 30

INPT

Select the correct answer option:

Go digital by INPT

What are data structures used for in computer science?

- ( ) To create complex graphs
- ( ) To write functions in programming languages
- (•) To store and organize data in a structured manner
- ( ) To make algorithms more efficient

Question 2 of 21 | Your Score: 1 of 30

Select the correct answer option:

Which data structure is used to store a series of values in memory?

- Linked lists
- Matrices
- Structs
- Arrays (selected)

Question 3 of 21 | Your Score: 2 of 30

Select the correct answer option:

What does the index of an array specify?

- The order in which the elements are stored in the array
- The memory location of the array
- The number of elements in the array
- The value stored at a specific position in the array (selected)

Question 4 of 21 | Your Score: 3 of 30

Select the correct answer option:

How are strings represented in computer memory?

- As matrices
- As structs
- As arrays of characters (selected)
- As linked lists

Question 5 of 21 | Your Score: 4 of 30

Select the correct answer option:

What is a linked list?

- A data structure where every element points to the next element in the list.
- A data structure where every element points to a random element in the list.
- A data structure where every element has a pointer to another element.
- A data structure where every element has a pointer to the previous element.

Question 6 of 21 | Your Score: 5 of 30

Select the correct answer option:

What is the difference between a queue and a stack?

- A queue is LIFO (Last-In First-Out) and a stack is FIFO (First-In First-Out).
- A queue allows duplicate elements and a stack does not.
- A queue is unordered and a stack is ordered.
- A queue is FIFO and a stack is LIFO.

Question 7 of 21 | Your Score: 6 of 30

Select the correct answer option:

What is the purpose of trees as a data structure?

- To store data in a circular manner.
- To store data in a matrix format.
- To store data in a graph-like structure.
- To store data with a one-way path from roots to leaves.

Question 8 of 21 | Your Score: 6 of 30

Select the correct answer option:

What type of data structure can represent arbitrary connections between nodes?

- Lists
- Arrays
- Trees
- Graphs

Question 9 of 21 | Your Score: 7 of 30

Select the correct answer option:

Why is the choice of data structure important in programming?

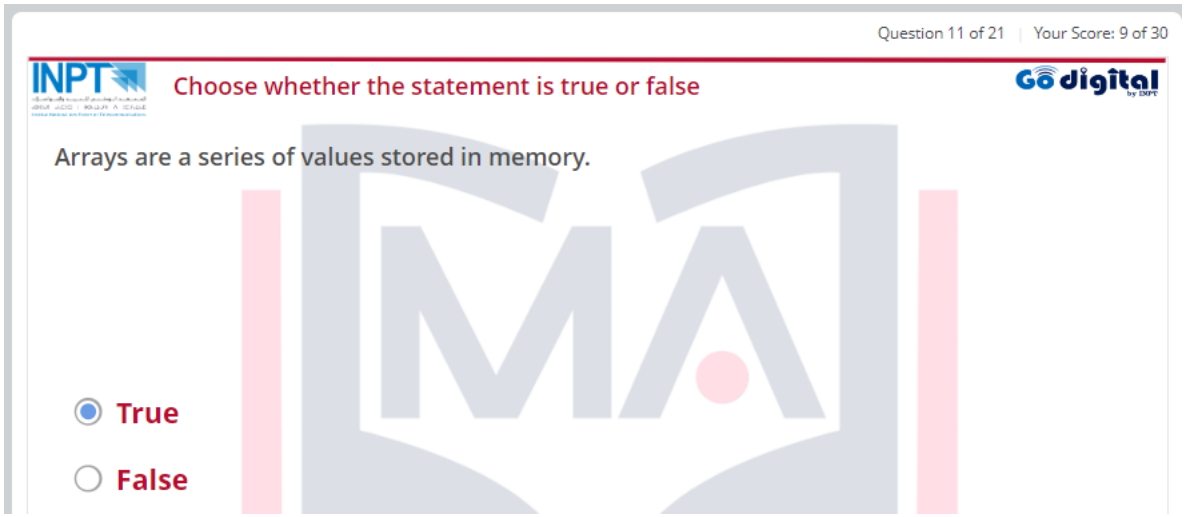
- It determines the complexity of algorithms
- It determines the memory allocation for variables
- It simplifies the implementation of functions
- It affects the efficiency of the program

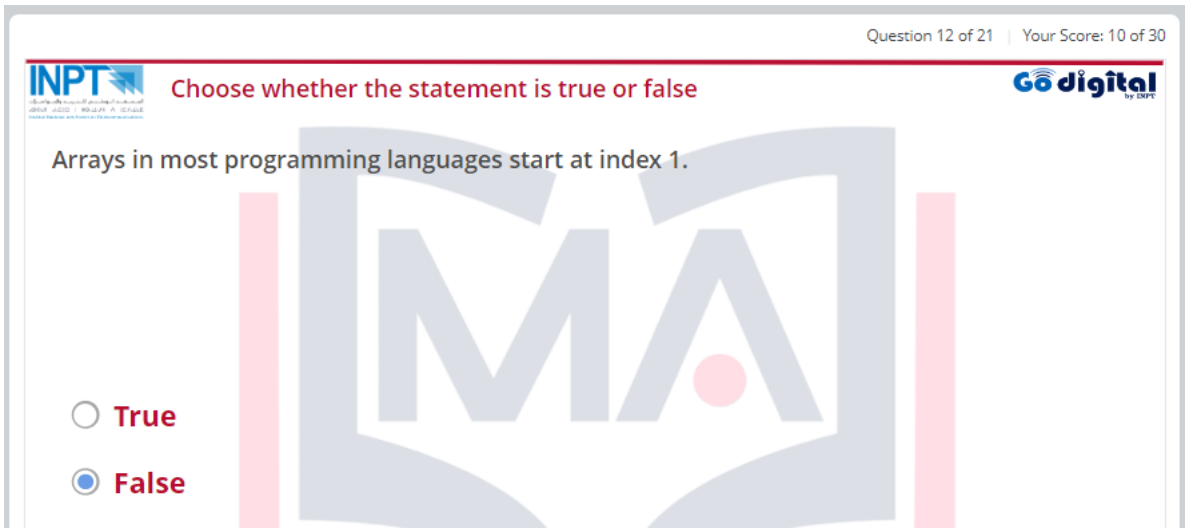
Question 10 of 21 | Your Score: 8 of 30

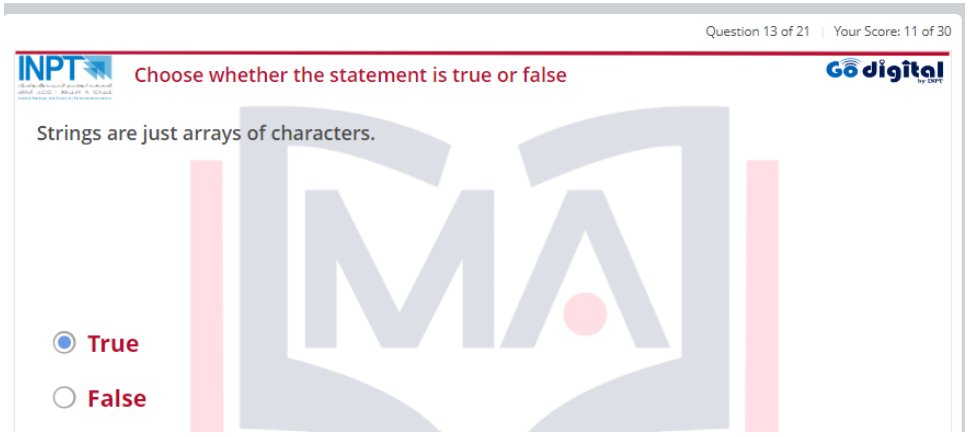
Select the correct answer option:

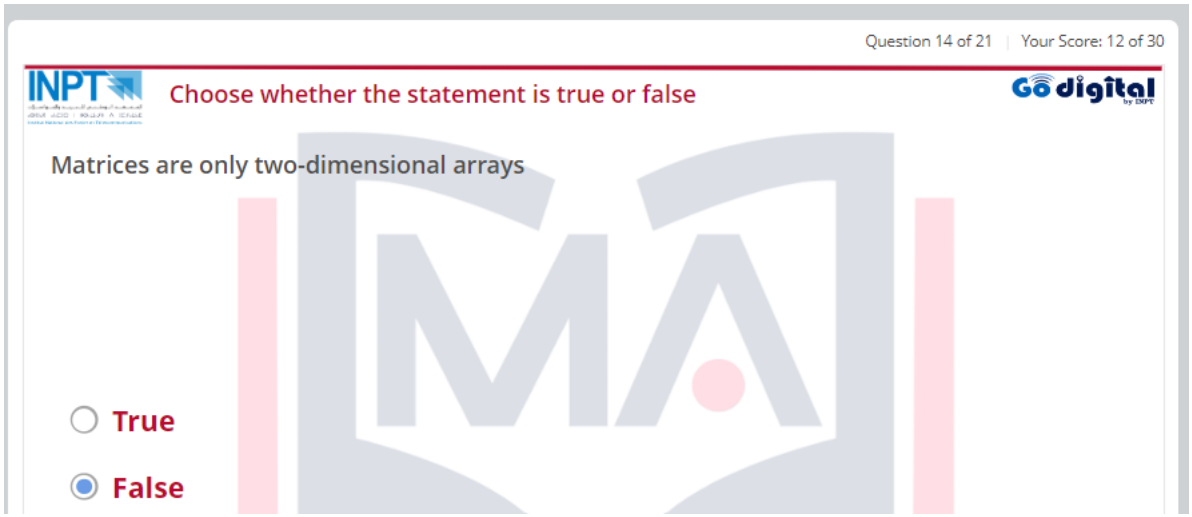
How do programming languages typically provide ready-made data structures to programmers?

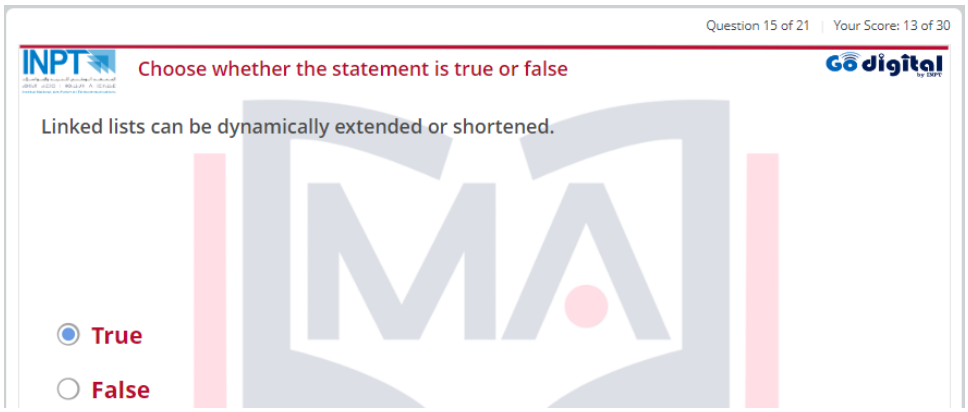
- By offering predefined data structure templates
- By including data structure examples in the language documentation
- Through libraries packed with data structures
- By providing built-in data structure functions

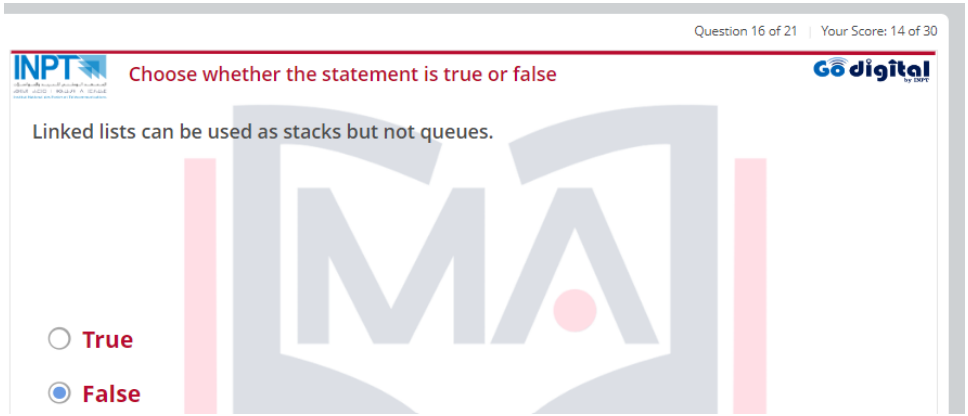

Question 11 of 21 | Your Score: 9 of 30
INPT
Choose whether the statement is true or false
Go digital
Arrays are a series of values stored in memory.
True
False

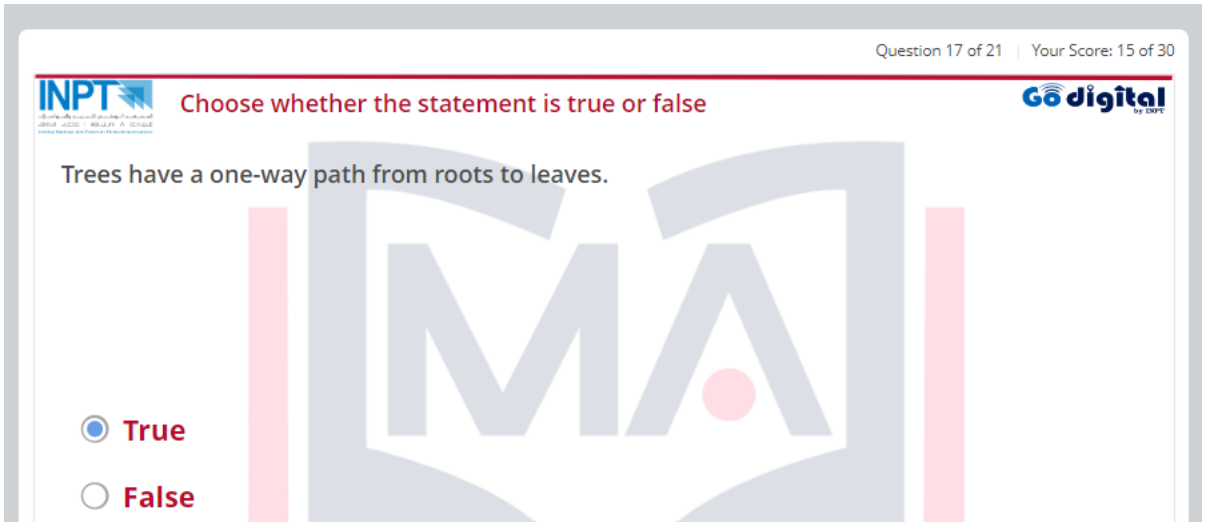

Question 12 of 21 | Your Score: 10 of 30
INPT
Choose whether the statement is true or false
Go digital
Arrays in most programming languages start at index 1.
True
False

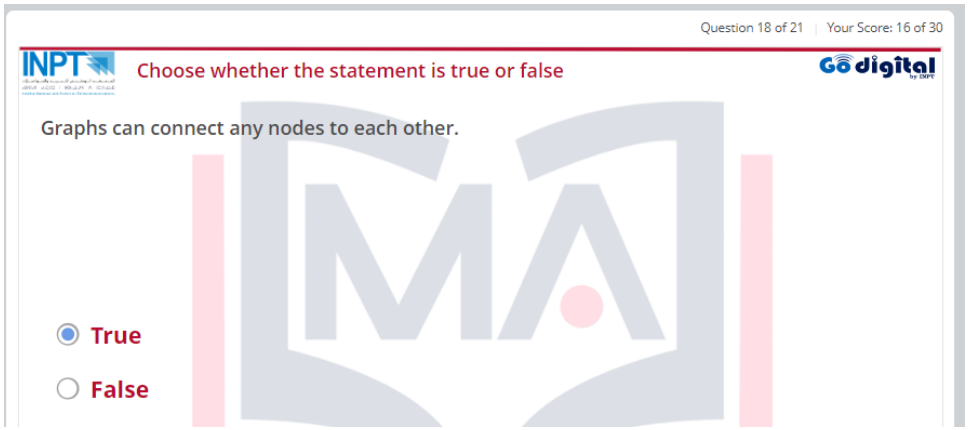

Question 13 of 21 | Your Score: 11 of 30
INPT
Choose whether the statement is true or false
Go digital
Strings are just arrays of characters.
True
False

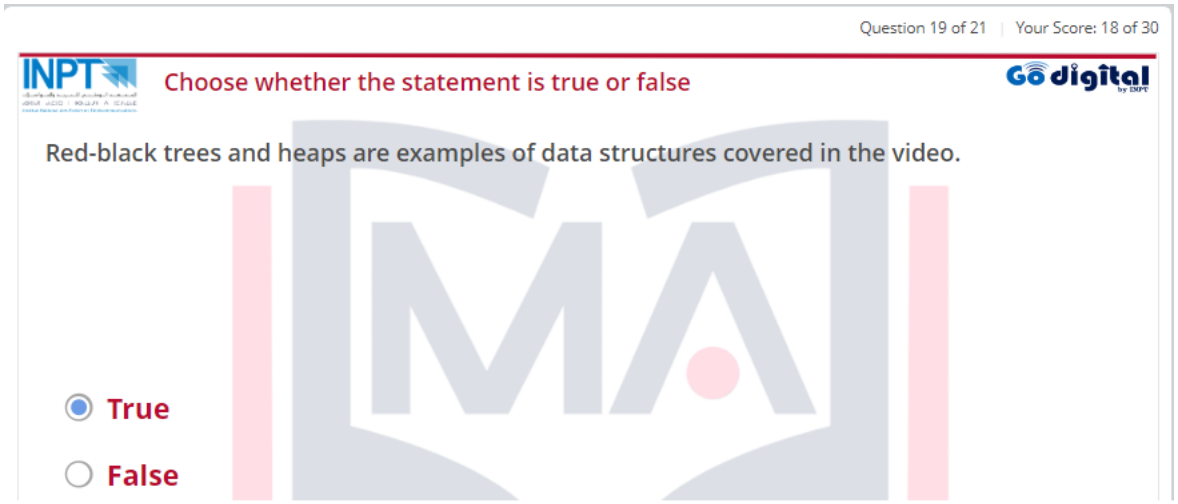

Question 14 of 21 | Your Score: 12 of 30
INPT
Choose whether the statement is true or false
Go digital
Matrices are only two-dimensional arrays
True
False


Question 15 of 21 | Your Score: 13 of 30
INPT
Choose whether the statement is true or false
Go digital
Linked lists can be dynamically extended or shortened.
True
False


Question 16 of 21 | Your Score: 14 of 30
INPT
Choose whether the statement is true or false
Go digital
Linked lists can be used as stacks but not queues.
True
False


Question 17 of 21 | Your Score: 15 of 30
INPT
Choose whether the statement is true or false
Go digital
Trees have a one-way path from roots to leaves.
True
False


Question 18 of 21 | Your Score: 16 of 30
INPT
Choose whether the statement is true or false
Go digital
Graphs can connect any nodes to each other.
True
False


Question 19 of 21 | Your Score: 18 of 30
INPT
Choose whether the statement is true or false
Go digital
Red-black trees and heaps are examples of data structures covered in the video.
True
False

Question 20 of 21 | Your Score: 17 of 30

INPT

Choose whether the statement is true or false

Go digital

Most programming languages include ready-made data structures libraries.

- (●) True
- ( ) False

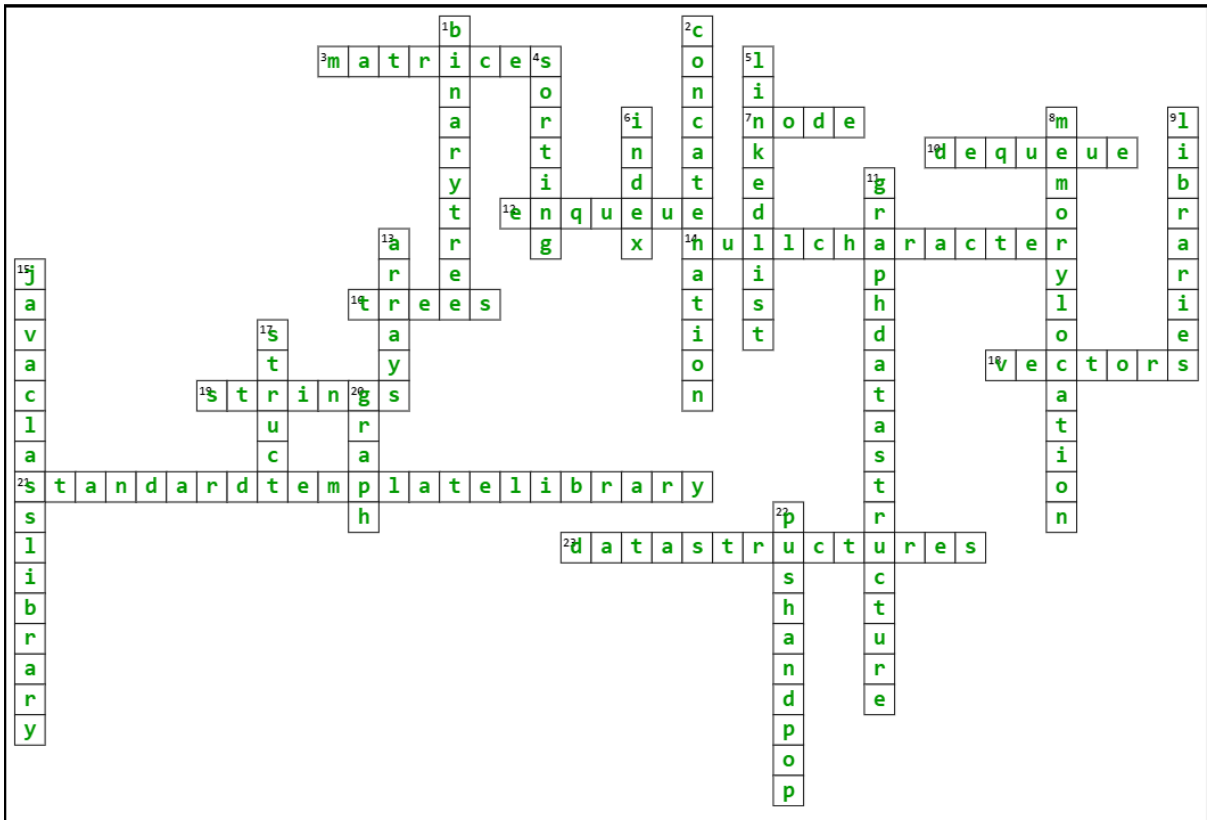
Question 21 of 21 | Your Score: 18 of 30

INPT

Drag and drop the words to their places

Go digital

1. Arrays are extremely [versatile] data structures, and so there are many functions that can handle them to do useful things.
2. To access a value in a matrix, you need to specify two [indexes].
3. Groups of variables bundled together into a [struct] can store a block of related variables together.
4. A linked list can be dynamically extended or shortened, providing more flexibility than an [array].
5. A queue follows the behavior of [FIFO].
6. In stacks, data is pushed onto the stack and [popped] from the stack, following the LIFO principle.
7. If a node struct contains two [pointers], it can be used to build a tree.
8. Nodes above children in a tree data structure are called [parent] nodes.
9. Data that links arbitrarily, such as loops, can be represented using a [graph] data structure.
10. Programming languages often come with libraries [packed] full of ready-made data structures.



English 3

Question 1 of 21 | Your Score: 0 of 30

Select the correct answer option:

What is the significance of improvements in hardware for the growth of software?

- ○ It eliminates the need for integrated development environments.
- ◉ It allows for the development of modern software engineering practices.
- ○ It prevents the Tyranny of Numbers.
- ○ It increases the complexity of machine code.

Question 2 of 21 | Your Score: 1 of 30

Select the correct answer option:

In the early days, how were computers built?

- ○ Using integrated circuits
- ○ By using photolithography techniques
- ○ Through 3D printing technology
- ◉ By hand-soldering individual components together

Question 3 of 21 | Your Score: 2 of 30

Select the correct answer option:

What were the advantages of using transistors instead of vacuum tubes in computers?

- ○ Transistors reduced the complexity of computer designs.
- ◉ Transistors were smaller, faster, and more reliable.
- ○ Transistors were cheaper and easier to manufacture.
- ○ Transistors eliminated the need for integrated circuits.

Question 4 of 21 | Your Score: 3 of 30

Select the correct answer option:

How did integrated circuits (ICs) revolutionize computer design?

- They allowed for the mass production of discrete components.
- They reduced the number of connections and wires in computer systems.
- They made computers smaller but less reliable.
- They eliminated the need for printed circuit boards (PCBs).

Question 5 of 21 | Your Score: 4 of 30

Select the correct answer option:

What is the purpose of photolithography in the fabrication of integrated circuits?

- To increase the density of transistors on a single IC
- To create circuits made up of discrete components
- To etch complex patterns onto a material using light
- To package up electronic circuits into a single component

Question 6 of 21 | Your Score: 5 of 30

Select the correct answer option:

How did the size of transistors and the number of transistors in integrated circuits change over time?

- Transistors became smaller and more densely packed.
- Transistors were phased out in favor of vacuum tubes.
- Transistors remained the same size but increased in number.
- Transistors became larger and fewer in number.

Question 7 of 21 | Your Score: 6 of 30

Select the correct answer option:

What is the significance of Moore's Law?

- It explains the limitations of photolithography techniques.
- It predicts the end of miniaturization in computer technology.
- It describes the exponential growth of integrated circuits.
- It outlines the development of very-large-scale integration software.

Question 8 of 21 | Your Score: 7 of 30

Select the correct answer option:

What are the two main issues that are currently limiting further miniaturization of transistors?

- Constraints on photomask features and quantum tunneling
- Difficulties in manufacturing integrated circuits and producing photomasks
- Limitations of transistors' electrical properties and photolithography techniques
- Problems in controlling the density of transistors and maintaining circuit stability

Question 9 of 21 | Your Score: 8 of 30

Select the correct answer option:

How has the advancement of photolithography techniques impacted the size of transistors?

- The size of transistors has remained relatively constant.
- The size of transistors has had no effect on computer performance.
- The size of transistors has decreased dramatically.
- The size of transistors has increased significantly.

Question 10 of 21 | Your Score: 9 of 30

Select the correct answer option:

What role does VLSI software play in the development of integrated circuits?

- ○ It improves the efficiency of transistor fabrication.
- ○ It allows for the creation of smaller IC designs without the use of photomasks.
- ◉ It automates the design process of integrated circuits.
- ○ It replaces the need for photolithography techniques.

Question 11 of 21 | Your Score: 10 of 30

Choose whether the statement is true or false

Software engineering practices have remained the same since the birth of electronic computing.

- ○ True
- ◉ False

Question 12 of 21 | Your Score: 11 of 30

Choose whether the statement is true or false

Transistors were smaller, faster, and more reliable than vacuum tubes and solved the Tyranny of Numbers.

- ◉ True
- ○ False

Question 13 of 21 | Your Score: 12 of 30

Choose whether the statement is true or false

Integrated Circuits (ICs) allowed for the packaging of complex circuits into a single component.

- (●) True
- ( ) False

Question 14 of 21 | Your Score: 13 of 30

Choose whether the statement is true or false

Printed circuit boards (PCBs) allowed for the mass manufacturing of components and reduced the complexity of computer design.

- (●) True
- ( ) False

Question 15 of 21 | Your Score: 14 of 30

Choose whether the statement is true or false

Photolithography is a process that uses light to transfer complex patterns onto a material, such as a semiconductor.

- (●) True
- ( ) False

Question 16 of 21 | Your Score: 15 of 30

Choose whether the statement is true or false

Doping is the process of chemically altering silicon to modify its electrical properties.

- (●) True
- ( ) False

Question 17 of 21 | Your Score: 16 of 30

Choose whether the statement is true or false

Photolithography is the only process needed to build a transistor in an Integrated Circuit (IC).

- ( ) True
- (●) False

Question 18 of 21 | Your Score: 17 of 30

Choose whether the statement is true or false

The Intel 4004 CPU, released in 1971, was the first microprocessor and contained 2,300 transistors.

- (●) True
- ( ) False

Question 19 of 21 | Your Score: 18 of 30

Choose whether the statement is true or false

Moore's Law states that the number of transistors in an IC doubles approximately every two years.

- (●) True
- ( ) False

Question 20 of 21 | Your Score: 19 of 30

Choose whether the statement is true or false

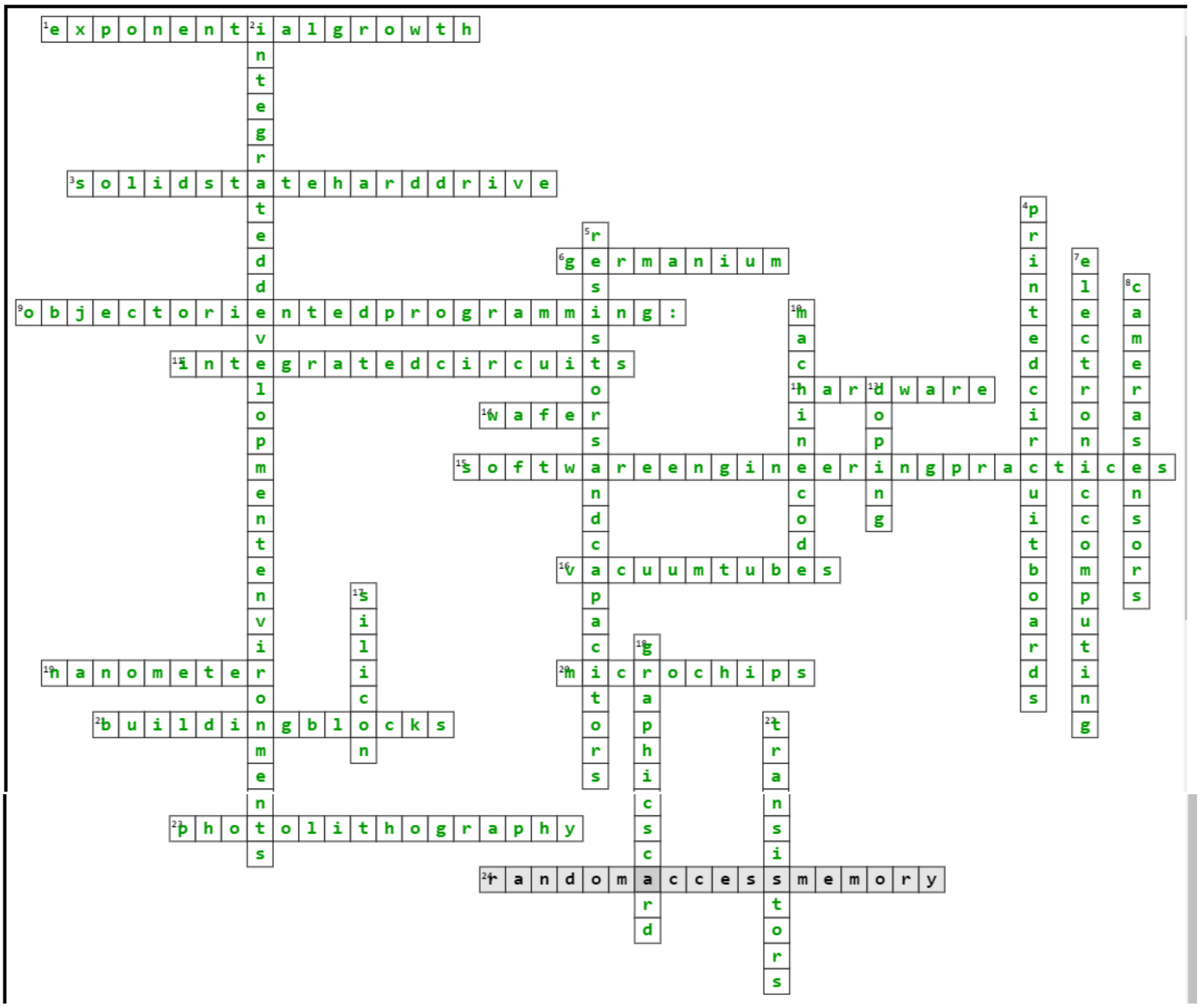
Quantum tunneling is a phenomenon that occurs when electrons jump the gap between electrodes in very small transistors.

- (●) True
- ( ) False

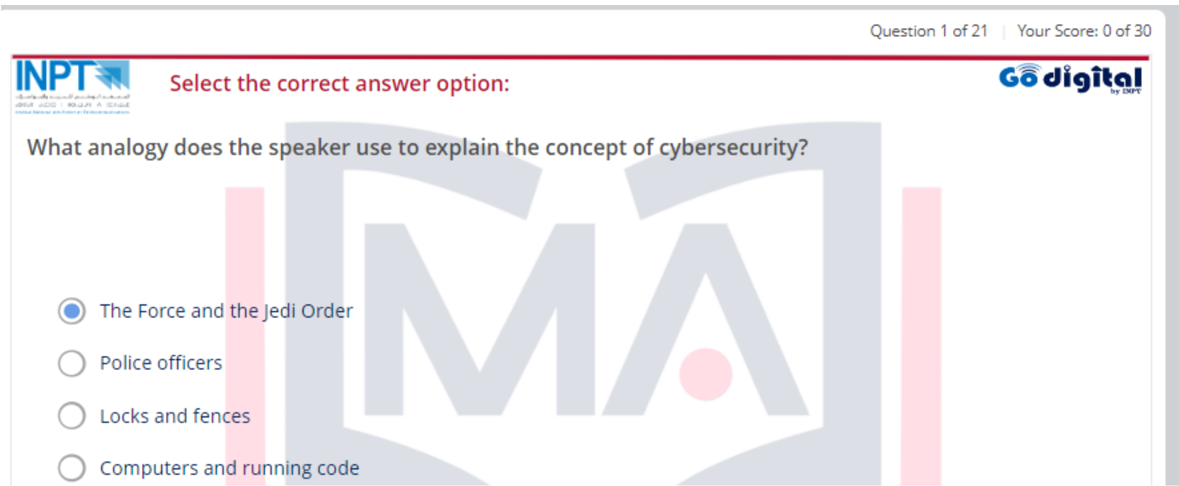
Question 21 of 21 | Your Score: 20 of 30

Drag and drop the words to their places

1. By the mid-1950s, transistors were becoming commercially available and being [incorporated] into computers.
2. The breakthrough in electronic parts [packaging] came in 1958 when Jack Kilby demonstrated Integrated Circuits.
3. Fairchild Semiconductor, led by Robert Noyce, made ICs practical by using [silicon], which makes up about a quarter of the earth's crust.
4. Printed Circuit Boards (PCBs) replaced the need for [soldering] and bundling wires.
5. Silicon, used to create ICs, is a [semiconductor], meaning it can sometimes conduct electricity.
6. The chemical changes in the silicon [wafer] during photolithography make it soluble.
7. Photolithography is used to create incredibly fine [details] on a wafer.
8. IC prices [dramatically] fell from an average of $50 in 1962 to around $2 in 1968.
9. In electronics, once the wafer is full of ICs, they are cut up and packaged into [microchips].
10. The exponential advancement of most electronics, including RAM, graphics cards, solid-state hard drives, and camera sensors, is attributed to improvements in [photolithography].


1 exponentialgrowth
2 integrateddevelopmentenvironments
3 solidstateharddrive
4 printedcircuitboards
5 resistorsandcapacitors
6 germanium
7 electroniccomputing
8 camerasensors
9 objectorientedprogramming:
10 machinecode
11 integratedcircuits
12 hardware
13 doping
14 wafer
15 softwareengineeringpractices
16 vacuumtubes
17 silicon
18 graphicscard
19 nanometer
20 microchips
21 transistors
22 buildingblocks
23 photolithography
24 randomaccessmemory

English 4


Question 1 of 21
Your Score: 0 of 30
INPT
Select the correct answer option:
Go digital
What analogy does the speaker use to explain the concept of cybersecurity?
The Force and the Jedi Order
Police officers
Locks and fences
Computers and running code

Question 2 of 21 | Your Score: 1 of 30

Select the correct answer option:

What are the three goals of cybersecurity?

- ○ Confidentiality, integrity, and accessibility
- ○ Secrecy, authenticity, and availability
- ○ Confidentiality, authenticity, and accessibility
- ◉ Secrecy, integrity, and availability

Question 3 of 21 | Your Score: 1 of 30

Select the correct answer option:

What is the purpose of a threat model in cybersecurity?

- ○ To overwhelm hackers with security measures
- ○ To predict all possible threats
- ◉ To prepare against specific threats
- ○ To install security software on computer systems

Question 4 of 21 | Your Score: 2 of 30

Select the correct answer option:

Which type of authentication is based on possession of a secret token?

- ○ None of the above
- ○ What you are
- ○ What you know
- ◉ What you have

Question 5 of 21 | Your Score: 3 of 30

Select the correct answer option:

Why is biometric authentication probabilistic?

- ○ It requires physical presence
- ◉ It recognizes the wrong person sometimes
- ○ It can be easily compromised
- ○ It relies on passwords

Question 6 of 21 | Your Score: 4 of 30

Select the correct answer option:

What is the purpose of access control in cybersecurity?

- ○ To verify the identity of users
- ○ To prevent data breaches
- ○ To protect computer systems from malware
- ◉ To determine what users should have access to

Question 7 of 21 | Your Score: 5 of 30

Select the correct answer option:

What does the Bell-LaPadula model of access control state?

- ◉ Users should be able to "read up" but not "write down"
- ○ Users should have unrestricted access to all files
- ○ Users should be able to "read down" but not "write up"
- ○ Users should have no access to any files

Question 8 of 21 | Your Score: 6 of 30

INPT

Select the correct answer option:

Go digital

Why is it difficult to guarantee the security of a program or computing system?

- Hackers always find ways to compromise systems
- Security software is not trustworthy
- Implementation bugs can result in vulnerabilities
- Authentication and access control are not effective

Question 9 of 21 | Your Score: 7 of 30

INPT

Select the correct answer option:

Go digital

What is the process of having code audited by security-minded developers called?

- Formal verification
- Sanboxing
- Independent Verification and Validation
- Code bloat reduction

Question 10 of 21 | Your Score: 9 of 30

INPT

Select the correct answer option:

Go digital

How can isolation be achieved in computer security?

- By sandboxing applications
- By encrypting data
- By installing antivirus software
- By using firewalls

Question 11 of 21 | Your Score: 9 of 30

Choose whether the statement is true or false

Computers with proper cybersecurity measures in place have the ability to differentiate between right and wrong actions.

- ○ True
- ◉ False

Question 12 of 21 | Your Score: 8 of 30

Choose whether the statement is true or false

Secrecy in cybersecurity refers to the protection of people's credit card information.

- ◉ True
- ○ False

Question 13 of 21 | Your Score: 9 of 30

Choose whether the statement is true or false

Hackers can compromise the integrity of computer systems by modifying data without authorization.

- ◉ True
- ○ False

Question 14 of 21 | Your Score: 10 of 30

Choose whether the statement is true or false

Denial of Service Attacks aim to restrict authorized people's access to computer systems and data.

- (●) True
- ( ) False

Question 15 of 21 | Your Score: 11 of 30

Choose whether the statement is true or false

A threat model is a formal specification of who your enemy is and their attack vectors.

- (●) True
- ( ) False

Question 16 of 21 | Your Score: 14 of 30

Choose whether the statement is true or false

What you know authentication is the most widely used method because it is the easiest to implement.

- (●) True
- ( ) False

Question 17 of 21 | Your Score: 12 of 30

Choose whether the statement is true or false

Biometric authentication methods, such as fingerprint readers, are always 100% accurate.

- ○ True
- ◉ False

Question 18 of 21 | Your Score: 13 of 30

Choose whether the statement is true or false

Multi-factor authentication is recommended to enhance the security of important accounts.

- ◉ True
- ○ False

Question 19 of 21 | Your Score: 17 of 30

Choose whether the statement is true or false

The Bell-LaPadula model states that people should have read access only to files with equal or lower security clearance.

- ◉ True
- ○ False

Question 20 of 21 | Your Score: 14 of 30

Choose whether the statement is true or false

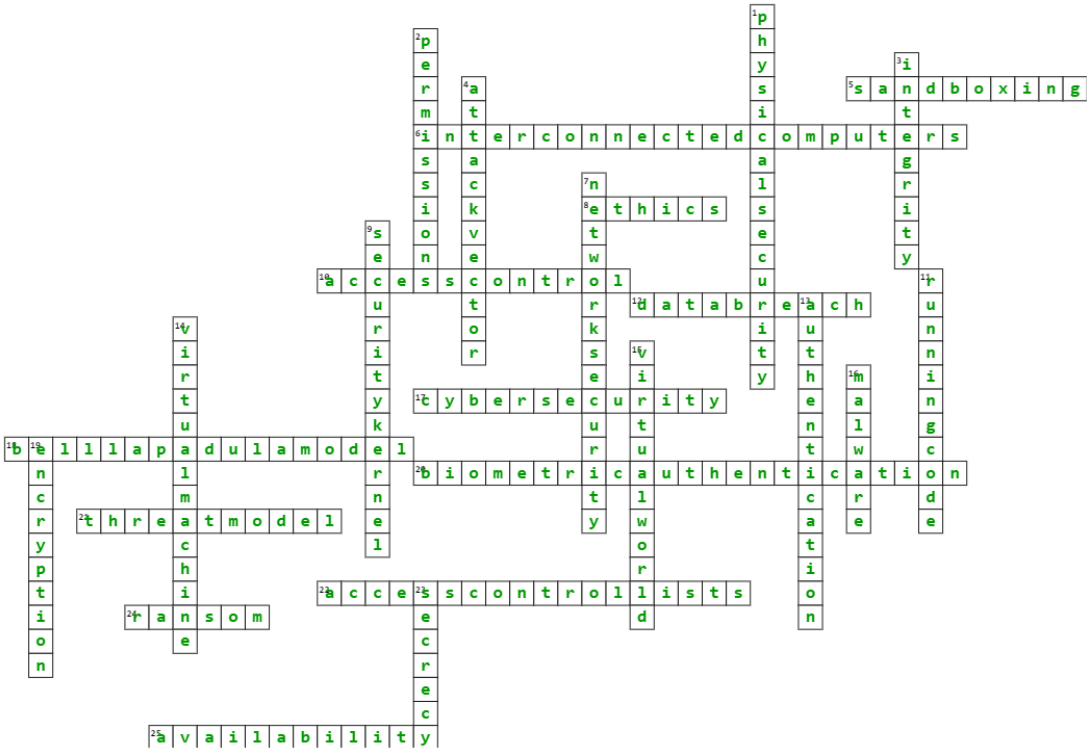
"Security kernels" are sets of operating system software that are provably secure against all attacks.

- ○ True
- ◉ False

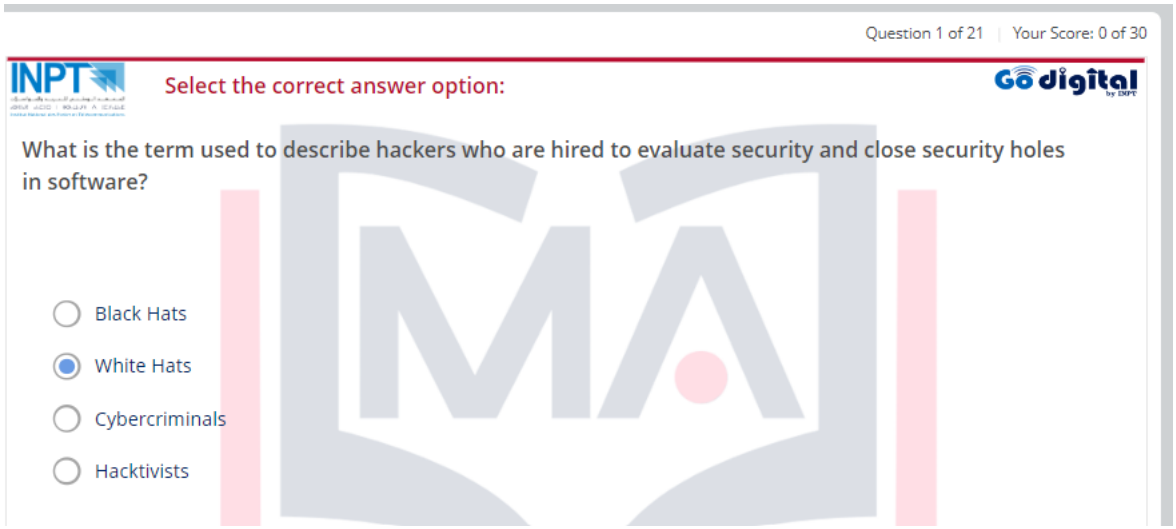
Question 21 of 21 | Your Score: 15 of 30

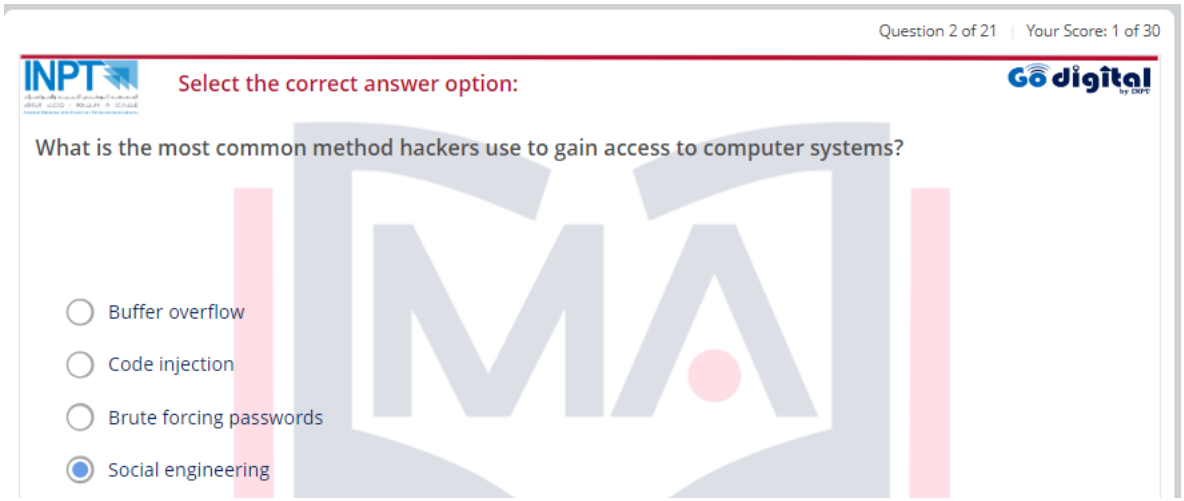
Drag and drop the words to their places

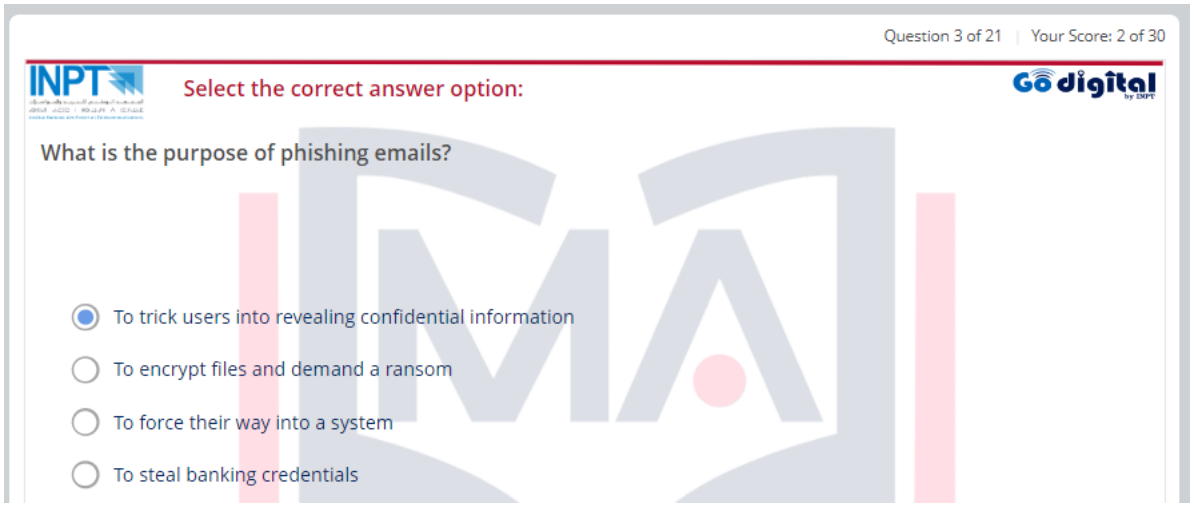
1. Cybersecurity is like the Jedi Order, aiming to bring peace and justice to the cyber-verse .
2. The scope of cybersecurity involves protecting the secrecy , integrity, and availability of computer systems and data.
3. Access Control Lists (ACL) describe what access each user has for every file , folder, and program on a computer.
4. Authentication is the process by which a computer understands who it's interacting with.
5. "No read up, no write down" is a principle that ensures that users with specific clearance levels can access files accordingly.
6. Authentication based on possession of a secret token is known as What you have.
7. To reduce implementation error in security software, the principle of minimizing code bloat is applied.
8. Isolation is a technique to reduce the likelihood of bugs, quickly find and patch bugs, and mitigate damage when a program is compromised.
9. Sandboxing applications involves giving each application its own block of memory to achieve isolation.
10. Open-sourced security code is often audited by external developers to spot problems.



English 5


Question 1 of 21 | Your Score: 0 of 30
INPT
Select the correct answer option:
Go digital
What is the term used to describe hackers who are hired to evaluate security and close security holes in software?
Black Hats
White Hats
Cybercriminals
Hacktivists


Question 2 of 21 | Your Score: 1 of 30
INPT
Select the correct answer option:
Go digital
What is the most common method hackers use to gain access to computer systems?
Buffer overflow
Code injection
Brute forcing passwords
Social engineering


Question 3 of 21 | Your Score: 2 of 30
INPT
Select the correct answer option:
Go digital
What is the purpose of phishing emails?
To trick users into revealing confidential information
To encrypt files and demand a ransom
To force their way into a system
To steal banking credentials

Question 4 of 21 | Your Score: 3 of 30

Select the correct answer option:

What is the term used for programs that masquerade as harmless attachments but contain malicious software?

- ○ Phishing emails
- ◉ Trojan horses
- ○ Exploits
- ○ Buffer overflows

Question 5 of 21 | Your Score: 4 of 30

Select the correct answer option:

What is the main purpose of brute forcing a password?

- ○ To trick users into revealing passwords
- ○ To encrypt files
- ○ To crash the system
- ◉ To gain unauthorized access

Question 6 of 21 | Your Score: 5 of 30

Select the correct answer option:

What is the term used for taking advantage of a bug in a system to gain capabilities or access?

- ○ Code injection
- ○ Social engineering
- ○ Brute forcing
- ◉ Exploit

Question 7 of 21 | Your Score: 6 of 30

Select the correct answer option:

How can buffer overflow attacks be combatted?

- By randomizing the memory location of variables
- All of the choices
- By leaving unused space after buffers and monitoring for changes
- By testing the length of input before copying it into a buffer

Question 8 of 21 | Your Score: 7 of 30

Select the correct answer option:

What is the purpose of code injection?

- To manipulate a program's memory
- To crash the system
- To gain unauthorized access
- To delete tables in a database

Question 9 of 21 | Your Score: 8 of 30

Select the correct answer option:

What is the term used for a bug that software creators are not aware of?

- Zero-day vulnerability
- Phishing email
- Trojan horse
- Brute force attack

Question 10 of 21 | Your Score: 9 of 30

Select the correct answer option:

Why is it important to keep computer software up to date?

- ○ To protect against exploits
- ○ To defend against code injection
- ○ To prevent buffer overflow attacks
- ◉ All of the choices

Question 11 of 21 | Your Score: 10 of 30

Choose whether the statement is true or false

Hackers can be classified into two categories - White Hats and Black Hats.

- ◉ True
- ○ False

Question 12 of 21 | Your Score: 10 of 30

Choose whether the statement is true or false

Black Hats hack computer systems for amusement and curiosity.

- ○ True
- ◉ False

Question 13 of 21 | Your Score: 11 of 30

INPT Choose whether the statement is true or false Go digital

Phishing is a social engineering attack where users are tricked into revealing confidential information.

- (●) True
- ( ) False

Question 15 of 21 | Your Score: 12 of 30

INPT Choose whether the statement is true or false Go digital

Code injection is a common method used to attack websites with databases.

- (●) True
- ( ) False

Question 16 of 21 | Your Score: 13 of 30

INPT Choose whether the statement is true or false Go digital

Zero-day vulnerabilities are bugs that are discovered by white hat programmers before Black Hat Hackers can exploit them.

- (●) True
- ( ) False

Question 17 of 21 | Your Score: 14 of 30

INPT

Choose whether the statement is true or false

Go digital by INPT

Botnets are networks of computers that have been taken over by hackers.

- (●) True
- ( ) False

Question 18 of 21 | Your Score: 15 of 30

INPT

Choose whether the statement is true or false

Go digital by INPT

Distributed Denial of Service (DDoS) attacks can be used to force owners to pay a ransom.

- (●) True
- ( ) False

Question 19 of 21 | Your Score: 16 of 30

INPT

Choose whether the statement is true or false

Go digital by INPT

Cyberattacks cost the global economy roughly half a trillion dollars annually.

- (●) True
- ( ) False

Question 20 of 21 | Your Score: 17 of 30

Choose whether the statement is true or false

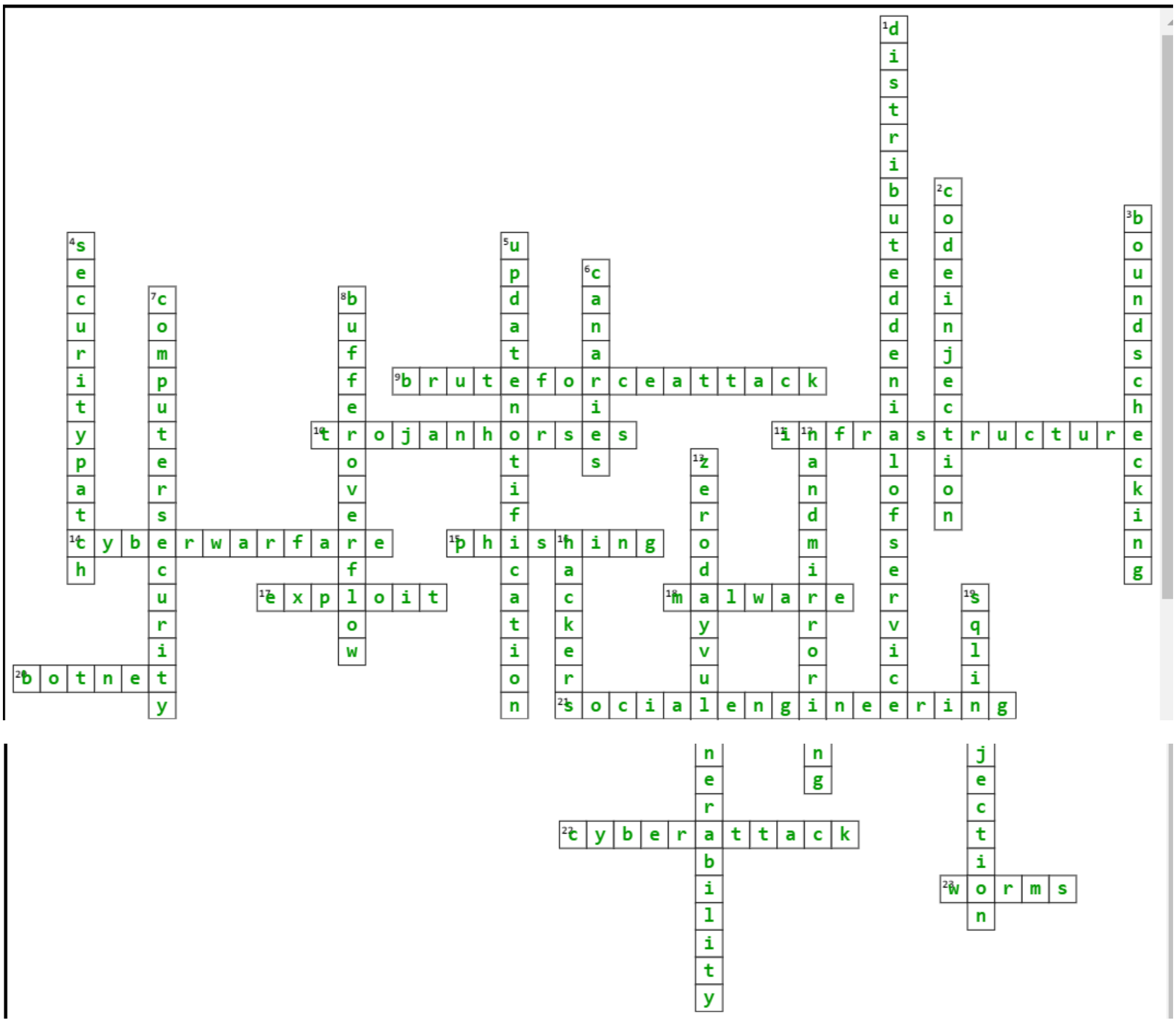
The next major war is predicted to be fought in cyberspace.

- (●) True
- ( ) False

Question 21 of 21 | Your Score: 18 of 30

Drag and drop the words to their places

1. White Hat hacker are hired to perform [security evaluations] and improve system resilience.
2. [Social engineering] involves manipulating individuals to permit entry by attackers.
3. [Phishing] is an attack where users are tricked into clicking a link in an email and providing login details on a clone website.
4. [Pretexting] involves attackers pretending to be from, for example, an IT department to manipulate users into revealing confidential details.
5. Software that masquerades as harmless attachments but contains harmful software is known as [malware].
6. [Brute forcing] a password involves trying every combination until gaining entry.
7. [Buffer overflow] attacks overflow the buffer, causing programs to crash or allowing attackers to manipulate a program's memory.
8. [Code injection] is a classic hack where attackers inject malicious commands.
9. [Zero-day vulnerability] refers to an exploitable bug that hasn't been patched yet.
10. [Worms] are programs that jump from computer to computer, and many compromised computers can form a [botnet] used for malicious purposes.



English 6

Question 1 of 21 | Your Score: 0 of 30

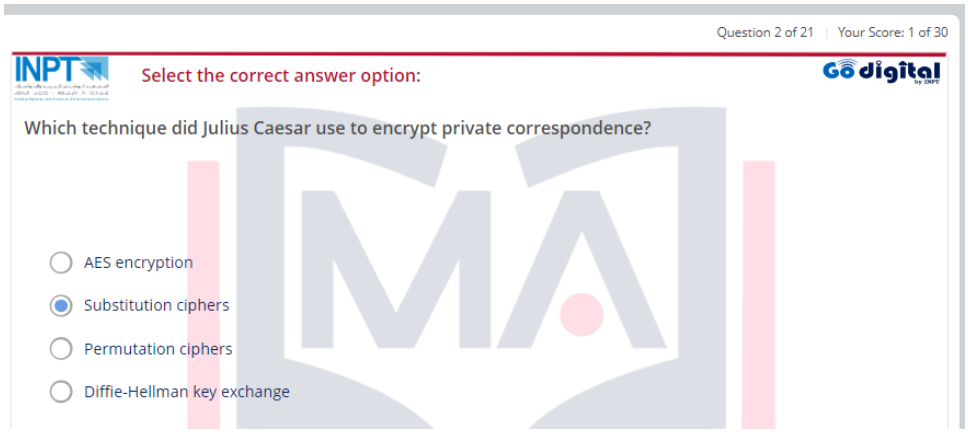
INPT

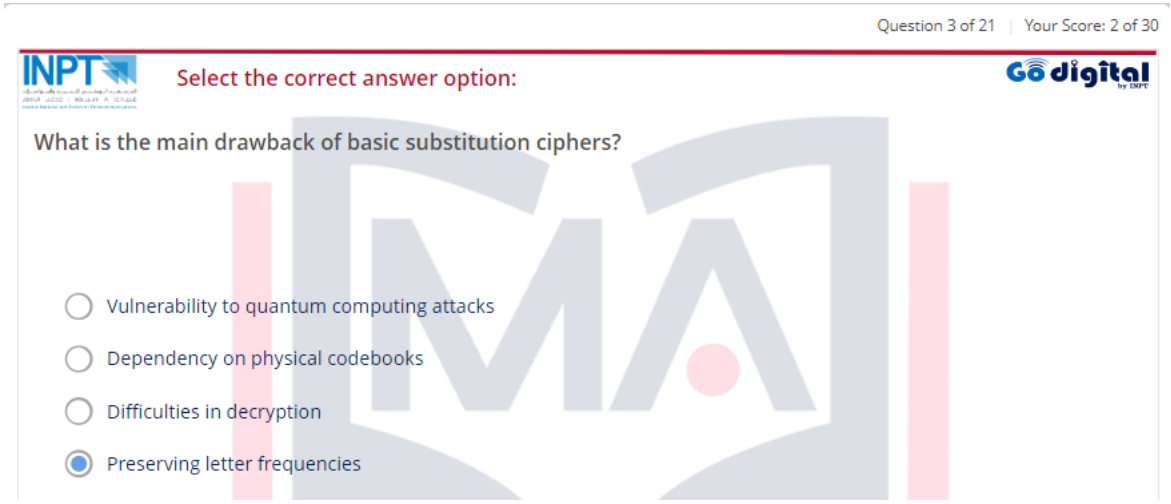
Select the correct answer option:

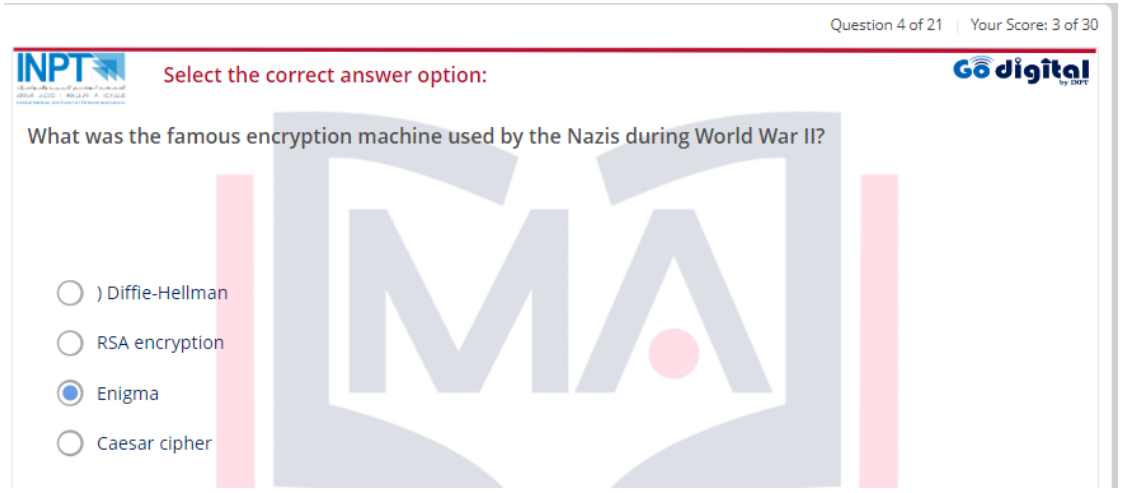
Gö digital

What is the strategy employed by system architects to enhance computer security?

- ○ Cryptanalysis
- ○ Permutation ciphers
- ○ Encryption
- ◉ Defence in depth


Question 2 of 21 | Your Score: 1 of 30
INPT
Select the correct answer option:
Go digital
Which technique did Julius Caesar use to encrypt private correspondence?
AES encryption
Substitution ciphers
Permutation ciphers
Diffie-Hellman key exchange


Question 3 of 21 | Your Score: 2 of 30
INPT
Select the correct answer option:
Go digital
What is the main drawback of basic substitution ciphers?
Vulnerability to quantum computing attacks
Dependency on physical codebooks
Difficulties in decryption
Preserving letter frequencies


Question 4 of 21 | Your Score: 3 of 30
INPT
Select the correct answer option:
Go digital
What was the famous encryption machine used by the Nazis during World War II?
) Diffie-Hellman
RSA encryption
Enigma
Caesar cipher

Question 5 of 21 | Your Score: 4 of 30

Select the correct answer option:

What is the purpose of a reflector in the Enigma machine?

- (●) To connect electrical signals back through the rotors
- ( ) To encrypt messages using a secret key
- ( ) To substitute letters in the ciphertext
- ( ) To perform modular exponentiation calculations

Question 6 of 21 | Your Score: 5 of 30

Select the correct answer option:

Which encryption standard rendered the Data Encryption Standard (DES) insecure?

- (●) AES
- ( ) Caesar cipher
- ( ) RSA
- ( ) Diffie-Hellman key exchange

Question 7 of 21 | Your Score: 6 of 30

Select the correct answer option:

How does AES provide a balance between performance and security?

- ( ) By employing modular exponentiation
- ( ) By using small key sizes
- (●) By chopping data into blocks and applying substitutions and permutations
- ( ) By using basic substitution ciphers

Question 8 of 21 | Your Score: 7 of 30

Select the correct answer option:

How does Diffie-Hellman Key Exchange establish a shared key?

- By using public and private keys
- By performing modular exponentiation calculations
- By exchanging secret keys
- By mixing paint colors

Question 9 of 21 | Your Score: 8 of 30

Select the correct answer option:

What is the main difference between symmetric and asymmetric encryption?

- Symmetric encryption is faster but less secure than asymmetric encryption.
- Symmetric encryption uses two different keys, while asymmetric encryption uses the same key.
- Symmetric encryption requires the sender and recipient to know the same key, while asymmetric encryption uses public and private keys.
- Symmetric encryption relies on modular exponentiation, while asymmetric encryption uses substitution ciphers.

Question 10 of 21 | Your Score: 9 of 30

Select the correct answer option:

Which encryption technique is used for signing data and verifying the identity of the sender?

- RSA encryption
- AES encryption
- Substitution ciphers
- Caesar cipher

Question 11 of 21 | Your Score: 10 of 30

INPT Choose whether the statement is true or false Go digital

Defence in depth is a strategy that uses multiple layers of security mechanisms to frustrate attackers.

- (●) True
- ( ) False

Question 12 of 21 | Your Score: 11 of 30

INPT Choose whether the statement is true or false Go digital

Cryptography is the most common form of computer security.

- (●) True
- ( ) False

Question 13 of 21 | Your Score: 12 of 30

INPT Choose whether the statement is true or false Go digital

Ciphers have been used long before computers.

- (●) True
- ( ) False

Question 14 of 21 | Your Score: 13 of 30

Choose whether the statement is true or false

Substitution ciphers replace every letter in a message with something else according to a translation.

- (●) True
- ( ) False

Question 15 of 21 | Your Score: 13 of 30

Choose whether the statement is true or false

Substitution ciphers preserve letter frequencies, making it easier for cryptanalysts to decipher the message.

- ( ) True
- (●) False

Question 16 of 21 | Your Score: 14 of 30

Choose whether the statement is true or false

he Enigma machine used a series of rotors and substitution mappings to encrypt messages.

- (●) True
- ( ) False

Question 17 of 21 | Your Score: 15 of 30

INPT Choose whether the statement is true or false Go digital

The Enigma machine had a plugboard that allowed for additional letter swapping.

- (●) True
- ( ) False

Question 18 of 21 | Your Score: 16 of 30

INPT Choose whether the statement is true or false Go digital

he Enigma machine could encrypt and decrypt messages using the same initial configuration.

- (●) True
- ( ) False

Question 19 of 21 | Your Score: 17 of 30

INPT Choose whether the statement is true or false Go digital

The Data Encryption Standard (DES) originally used binary keys that were 56 bits long.

- (●) True
- ( ) False

Question 20 of 21 | Your Score: 18 of 30

Choose whether the statement is true or false

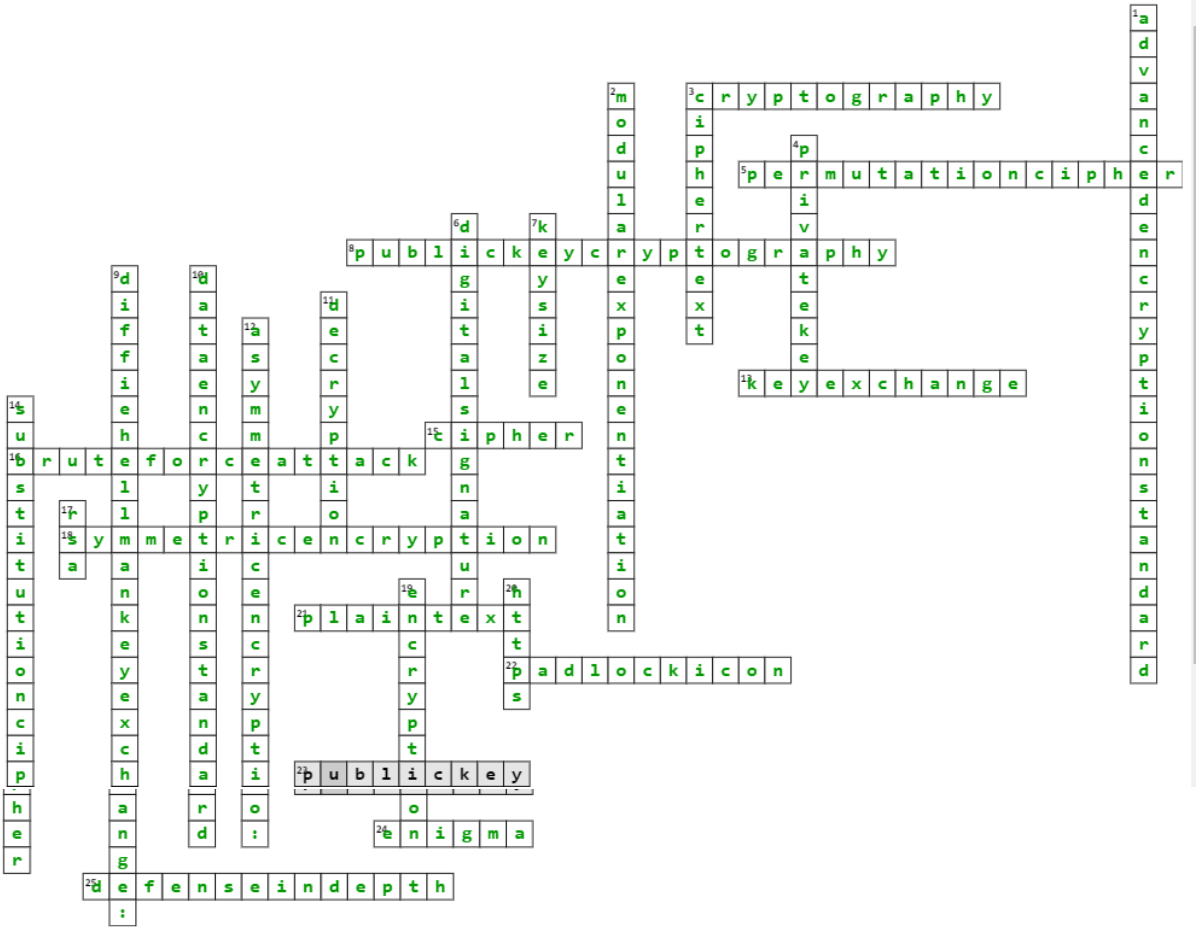
The Advanced Encryption Standard (AES) uses much bigger keys and is more secure against brute force attacks.

- (●) True
- ( ) False

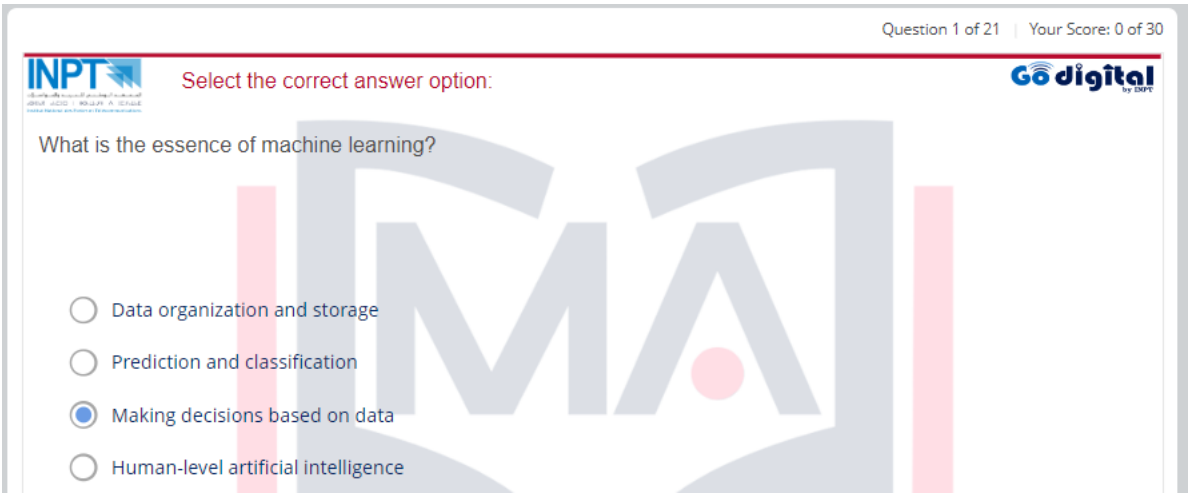
Question 21 of 21 | Your Score: 19 of 30

Drag and drop the words to their places

1. [Defense in depth] is a strategy that uses layers of security mechanisms to frustrate attackers.
2. Cryptography involves the use of [ciphers], algorithms that convert plain text into ciphertext.
3. Julius Caesar used a substitution cipher known as the [Caesar] cipher.
4. Basic substitution ciphers have a drawback that allows skilled [cryptanalysts] to work backward from statistical patterns to uncover the message.
5. [Permutation ciphers], such as the columnar transposition cipher, involve filling letters into a grid and reading them out in a different order.
6. The German Enigma created complex substitution mappings, turning it into a more sophisticated version of a [substitution] cipher.
7. The Data Encryption Standard (DES) makes [brute-force] attacks difficult at the time.
8. The [Advanced Encryption Standard] uses much bigger keys to make brute-force attacks much difficult.
9. Diffie-Hellman Key Exchange uses [modular exponentiation] as a one-way function to allow two computers to agree on a secret key without ever sending one.
10. RSA is a popular [asymmetric] encryption technique that uses public and private keys for encryption and decryption.



English7


Question 1 of 21 | Your Score: 0 of 30
INPT
Select the correct answer option:
Go digital
What is the essence of machine learning?
Data organization and storage
Prediction and classification
Making decisions based on data
Human-level artificial intelligence

Question 2 of 21 | Your Score: 1 of 30

Select the correct answer option:

How are machine learning algorithms different from human intelligence?

- (●) Machine learning algorithms are limited to specific tasks
- ( ) Machine learning algorithms are less sophisticated
- ( ) Machine learning algorithms do not learn from data
- ( ) Machine learning algorithms are more intelligent

Question 3 of 21 | Your Score: 2 of 30

Select the correct answer option:

What are features in the context of machine learning?

- ( ) Techniques used to train classifiers
- ( ) Data visualization tools
- (●) Values that characterize the things to be classified
- ( ) Mathematical functions used to separate data points

Question 4 of 21 | Your Score: 3 of 30

Select the correct answer option:

What is labeled data?

- ( ) Data that is classified by machine learning algorithms
- ( ) Data that is stored and organized
- ( ) Data that is collected by entomologists
- (●) Data that is labeled with the actual species

Question 5 of 21 | Your Score: 4 of 30

Select the correct answer option:

What are decision boundaries in machine learning?

- Divisions used to organize training data
- (●) Lines that separate different classes of data
- Techniques used to reduce data complexity
- Strategies used to improve classification accuracy

Question 6 of 21 | Your Score: 5 of 30

Select the correct answer option:

What is the purpose of a confusion matrix in machine learning?

- To find the best features for classification
- To visualize data in a scatterplot
- To identify optimal decision boundaries
- (●) To analyze the accuracy of a classifier

Question 7 of 21 | Your Score: 6 of 30

Select the correct answer option:

What is the goal of machine learning algorithms?

- (●) To maximize correct classifications and minimize errors
- To create decision trees with multiple features
- To separate data points into distinct groups
- To achieve 100% accuracy in classification

Question 8 of 21 | Your Score: 7 of 30

INPT Select the correct answer option: Go digital

What is the difference between labeled data and unlabeled data?

- ○ Labeled data is collected from experts, while unlabeled data is obtained from machine learning algorithms
- ◉ Labeled data is data that has been classified, while unlabeled data has no assigned classification
- ○ Labeled data is used for training classifiers, while unlabeled data is used for testing
- ○ Labeled data is visualized in scatterplots, while unlabeled data is represented by decision boundaries

Question 9 of 21 | Your Score: 8 of 30

INPT Select the correct answer option: Go digital

What is a deep neural net?

- ○ A neural network with high computational power
- ◉ A neural network with multiple layers
- ○ A neural network that uses deep learning techniques
- ○ A neural network that can process complex information

Question 10 of 21 | Your Score: 9 of 30

INPT Select the correct answer option: Go digital

What is the difference between Narrow AI and Strong AI?

- ○ Narrow AI can perform multiple tasks, while Strong AI is limited to a specific domain
- ○ Strong AI can learn from data, while Narrow AI cannot
- ◉ Strong AI is as smart as a human, while Narrow AI is limited to specific tasks
- ○ Narrow AI is less intelligent than Strong AI

Question 11 of 21 | Your Score: 10 of 30

Choose whether the statement is true or false

Machine learning allows computers to make decisions based on data.

- (●) True
- ( ) False

Question 12 of 21 | Your Score: 11 of 30

Choose whether the statement is true or false

Machine learning is a subset of artificial intelligence (AI).

- (●) True
- ( ) False

Question 13 of 21 | Your Score: 12 of 30

Choose whether the statement is true or false

Features are values that characterize the things we wish to classify in machine learning.

- (●) True
- ( ) False

Question 14 of 21 | Your Score: 13 of 30

Choose whether the statement is true or false

Decision boundaries are lines that divide the decision space in machine learning.

- (●) True
- ( ) False

Question 15 of 21 | Your Score: 13 of 30

Choose whether the statement is true or false

Decision trees are the only machine learning technique used in computer science.

- ( ) True
- (●) False

Question 16 of 21 | Your Score: 14 of 30

Choose whether the statement is true or false

Artificial neural networks were inspired by neurons in the human brain.

- (●) True
- ( ) False

Question 17 of 21 | Your Score: 15 of 30

Choose whether the statement is true or false

Deep learning refers to neural networks with many layers.

- (●) True
- ( ) False

Question 18 of 21 | Your Score: 16 of 30

Choose whether the statement is true or false

Narrow AI is capable of performing tasks that require human-level intelligence.

- (●) True
- ( ) False

Question 19 of 21 | Your Score: 17 of 30

Choose whether the statement is true or false

Reinforcement learning is a powerful approach that allows machines to learn by trial and error.

- (●) True
- ( ) False

Question 20 of 21 | Your Score: 18 of 30

INPT

Choose whether the statement is true or false

Go digital by INPT

The future of AI may include the development of human-like, Strong AIs.

- (●) True
- ( ) False

Question 21 of 21 | Your Score: 19 of 30

1. Machine learning is the set of techniques that gives computers the ability to learn from data and make predictions and decisions.

Artificial Intelligence (AI) is the even more ambitious goal that encompasses machine learning.

2. The process of dividing the decision space into boxes, represented by lines or planes, is what is known as a decision tree .

3. A confusion matrix is often used to evaluate the performance of machine learning algorithms.

4. Support Vector Machines uses arbitrary lines, such as polynomials , to slice up the decision space.

5. In artificial neural networks, artificial neurons take numerical inputs, apply weights and biases, and use an activation function to produce an output.

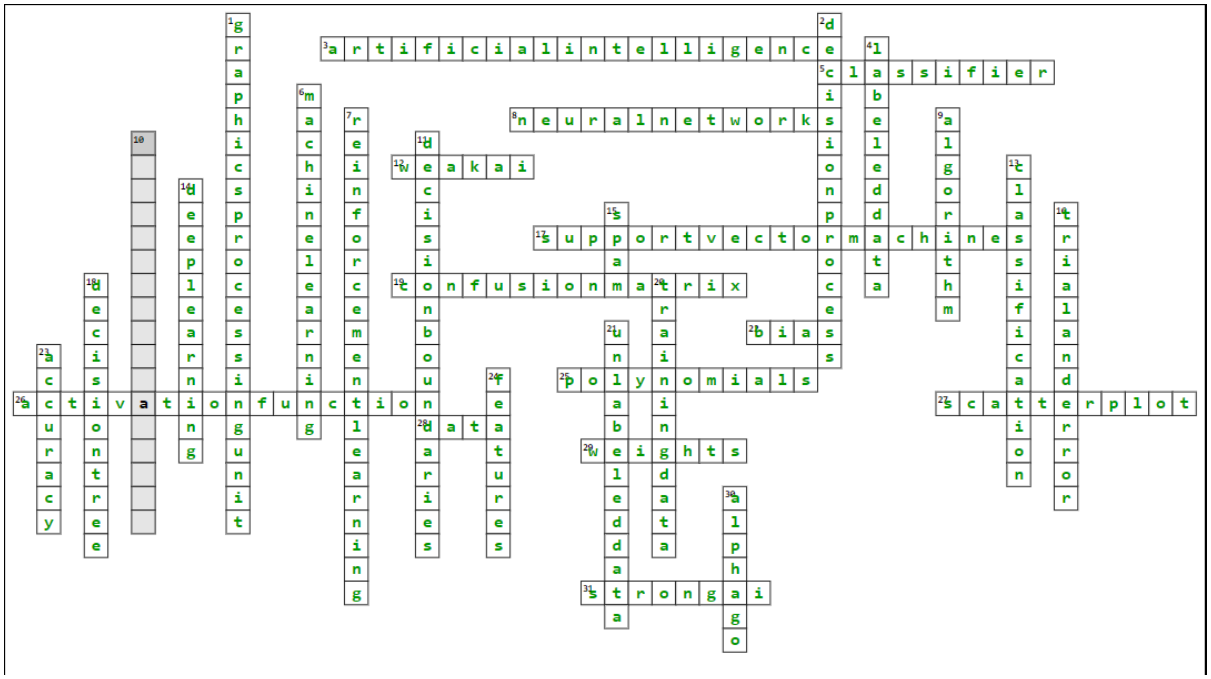
6. Deep learning refers to networks with many layers, often called deep layers , and has become practical due to powerful processors and fast GPUs.

7. While Weak AI or Narrow AI is intelligent at specific tasks. Strong AI , often compared to human intelligence, is considered general purpose.

8. The explosion of digitized knowledge , such as Wikipedia articles and YouTube videos, is seen by some as the perfect kindling for strong AI.

9. Google's AlphaGo, a Narrow AI, achieved excellence in playing the board game Go through millions of self-play iterations, demonstrating the power of reinforcement learning .

10. Reinforcement learning has the potential to create human-like , Strong AIs that learn at accelerated rates.



English 8

Question 1 of 21 | Your Score: 0 of 30

INPT Select the correct answer option: Go digital

According to the speaker, what has been the journey of the Crash Course Computer Science series?

- It focused on the future of computing and the potential of artificial intelligence.
- It explored the history of computing and the impact of computing on everyday life.
- It began with programming and computing pioneers, and ended with robotics and beyond.
- It started with computer vision and machine learning, and then covered transistors and logic gates.

Question 2 of 21 | Your Score: 0 of 30

INPT Select the correct answer option: Go digital

What is the vision of Ubiquitous Computing?

- Computers will be invisible and indistinguishable from everyday life.
- Computers will be connected to the internet and accessible from anywhere.
- Computers will only be present in the devices we use today.
- Computers will be embedded in everyday objects and surroundings.

Question 3 of 21 | Your Score: 1 of 30

INPT Select the correct answer option: Go digital

How does the late Mark Weiser describe the "invisible" path of computer design?

- Making computers an essential part of human existence.
- Designing computers that are powerful and capable of incredible tasks.
- Making computers exciting and interesting through innovative interfaces.
- Creating computers that blend seamlessly into everyday life.

Question 4 of 21 | Your Score: 3 of 30

Select the correct answer option:

What is the main topic of the final part of the video?

- ○ The potential of computers to change human biology and physiology.
- ◉ The possibility of computers surpassing human intelligence.
- ○ The impact of technological unemployment on job sectors.
- ○ The future role of computers in exploration and colonization.

Question 5 of 21 | Your Score: 2 of 30

Select the correct answer option:

What is the potential effect of technological unemployment?

- ◉ Most jobs will become obsolete, leading to economic disruption.
- ○ The standard of living will increase due to cheaper production of goods.
- ○ Opportunities for creativity and problem-solving will be limited.
- ○ People will have more freedom to pursue better and more interesting jobs.

Question 6 of 21 | Your Score: 4 of 30

Select the correct answer option:

Which jobs are considered to be the most vulnerable to automation?

- ○ Routine cognitive work and non-routine manual jobs.
- ○ Routine-manual jobs and routine cognitive work.
- ○ Non-routine manual jobs and non-routine cognitive work.
- ◉ Non-routine cognitive work and routine-manual jobs.

Question 7 of 21 | Your Score: 3 of 30

Select the correct answer option:

How do some futurists envision the relationship between humans and technology in the future?

- Humans will transform into digital beings and remain conscious.
- Superintelligent computers will take care of humanity's needs.
- Humans and technology will merge, enhancing intellect and physiology.
- Humans will coexist with technology as caretakers of the universe.

Question 8 of 21 | Your Score: 4 of 30

Select the correct answer option:

What is the most likely outcome for the future of computing according to the video?

- Superintelligent AI will surpass human intelligence.
- Computers will colonize the galaxy and continue to advance.
- Computers will outlive humanity and explore the universe.
- Technological advancements will continue to shape society.

Question 9 of 21 | Your Score: 4 of 30

Select the correct answer option:

What are some technologies that are likely to go mainstream in the next decade?

- Cryptocurrencies, 3D printing, and service robots.
- Quantum computing, bioinformatics, and wireless communication.
- Self-driving vehicles, drones, and virtual reality.
- Neural networks, wearable computers, and augmented reality.

Question 10 of 21 | Your Score: 5 of 30

Select the correct answer option:

What does the speaker encourage the viewers to do in the end?

- ○ Stay informed about the latest advancements in computing.
- ○ Pursue careers in programming and computing.
- ◉ Take what they have learned about computing to make the world a better place.
- ○ Reflect on the impact of computing on their own lives.

Question 11 of 21 | Your Score: 6 of 30

Choose whether the statement is true or false

Carrie Anne mentions that computer science is a skill of the future.

- ◉ True
- ○ False

Question 12 of 21 | Your Score: 7 of 30

Choose whether the statement is true or false

According to the transcript, computing is already ubiquitous in our everyday lives.

- ◉ True
- ○ False

Question 13 of 21 | Your Score: 8 of 30

Choose whether the statement is true or false

The late Mark Weiser described the most profound technologies as those that are visible and exciting.

- ○ True
- ◉ False

Question 14 of 21 | Your Score: 9 of 30

Choose whether the statement is true or false

AI technology is expected to replace all existing devices and create entirely new product categories.

- ○ True
- ◉ False

Question 15 of 21 | Your Score: 10 of 30

Choose whether the statement is true or false

Computers today have the same calculating power as a mouse.

- ◉ True
- ○ False

Question 16 of 21 | Your Score: 11 of 30

Choose whether the statement is true or false

The singularity refers to a point in the future where superintelligent computers will dominate human affairs.

- (●) True
- ( ) False

Question 17 of 21 | Your Score: 12 of 30

Choose whether the statement is true or false

Technological unemployment is a consequence of computers and robots taking over jobs.

- (●) True
- ( ) False

Question 18 of 21 | Your Score: 13 of 30

Choose whether the statement is true or false

According to the transcript, computer scientists anticipate that AI and robots will automate most routine cognitive work.

- (●) True
- ( ) False

Question 19 of 21 | Your Score: 14 of 30

INPT

Choose whether the statement is true or false

Go digital by INPT

Futurist Ray Kurzweil believes that the singularity will allow humans to transcend their biological bodies and brains.

- (●) True
- ( ) False

Question 20 of 21 | Your Score: 15 of 30

INPT

Choose whether the statement is true or false

Go digital by INPT

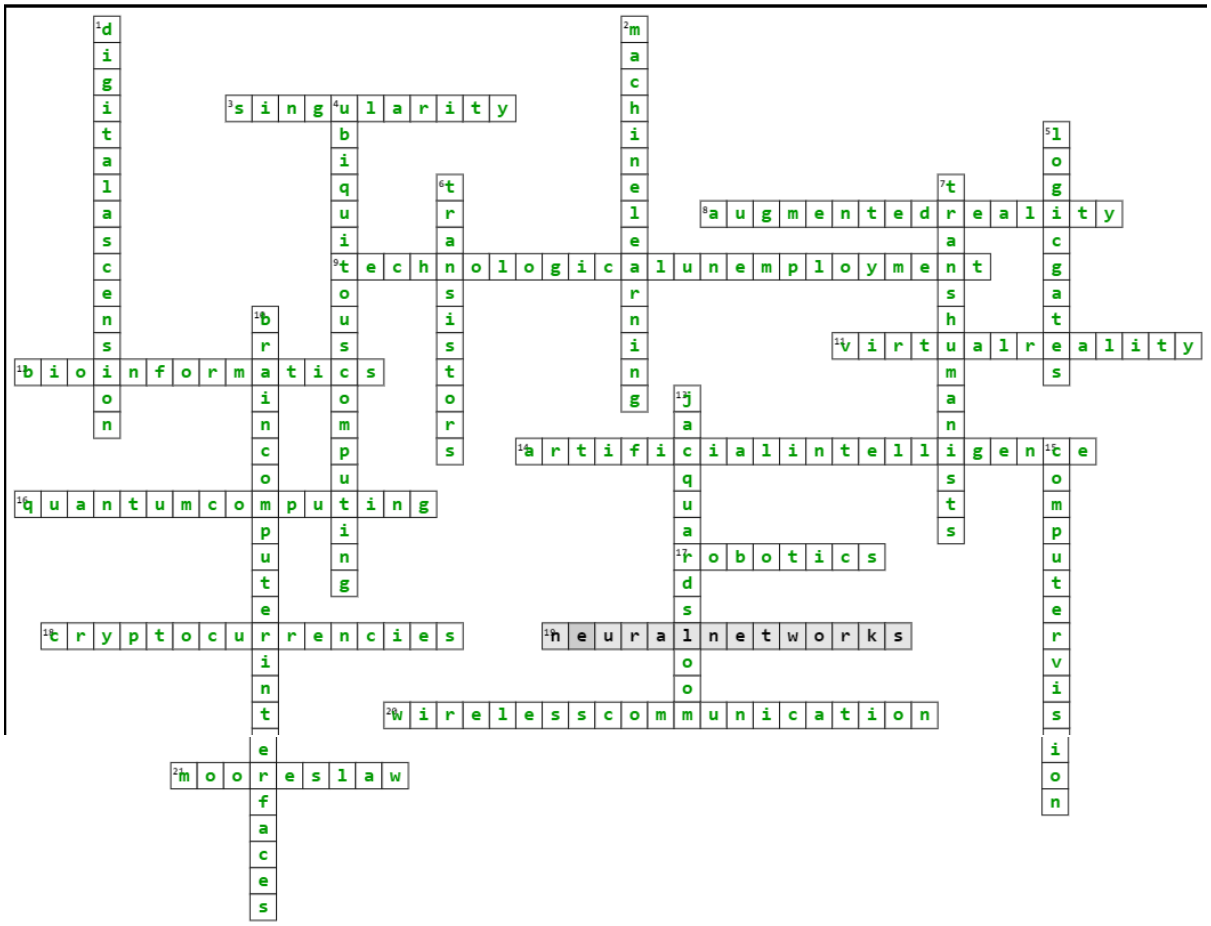
The transcript mentions that computers are likely to outlive humanity and explore space.

- (●) True
- ( ) False

Question 21 of 21 | Your Score: 16 of 30

Drag and drop the words to their places

1. In the field of [Ubiquitous Computing], the vision is to have computers embedded in various objects.
2. The idea of the ["invisible" path] in computing is to make computers so embedded, fitting, and natural.
3. People associate future computing with [Artificial Intelligence], but not everything will necessarily be AI-powered.
4. The concept of [technological unemployment] involves workers in various job sectors being rendered obsolete by computers and robots.
5. Jobs that involve [routine tasks] are more susceptible to automation.
6. The [singularity] is the potential future scenario where computers surpass human intelligence and initiate a runaway technological growth.
7. [Transhumanists] envision a future where humans merge with technology, leading to enhanced intellect and physiology through the creation of [cyborgs].
8. The Singularity will enable humans to transcend the limitations of their biological bodies and brains and potentially achieving [digital ascension].
9. It is likely that computers will [outlive] humanity and might eventually explore the galaxy, potentially colonizing it.
10. The golden age of computing is marked by ongoing advancements in virtual and [augmented] reality, [wearable] computers, service [robots], internet [evolution], and innovations in hardware.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bioinformatics
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