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IT VOCABULARY IN USE

Учебно-методическое пособие

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Пособие представляет собой сборник упражнений на лексику, термины и устойчивые выражения, широко используемые в области информационных технологий (IT), составленный на основе разнообразного аутентичного материала в области информационных технологий.

В пособии дается описание основных IT профессий, которые подробно знакомят будущих специалистов в сфере IT с основными должностными обязанностями, функционалом и необходимыми компетенциями, которыми должен обладать будущий успешный специалисты в области IT, а также представлены полезные советы и рекомендации для прохождения собеседования на английском языке. Пособие состоит из 20 уроков, включающих упражнения на употребление и проверку знаний лексики, устойчивых словосочетаний, а также грамматических конструкций соответствует стандартами ФГОС.

Данное учебное пособие рекомендуется как для аудиторной, так и самостоятельной работы студентов второго и старших курсов института информатики и вычислительной техники, для расширения словарного запаса и развития языковых компетенций в сфере информационных технологий.

Оглавление

Предисловие

Учебное пособие предназначено для студентов второго и старших является расширение словарного запаса и развитие навыков профессиональной из 20 уроков, которые включают в себя описание основных IT профессий и подробно знакомят будущих специалистов в сфере IT с основными должностными обязанностями, функционалом и необходимыми компетенциями, которыми должен обладать будущий успешный специалисты в области IT. В составе пособия в поурочных заданиях представлена новая IT лексика, упражнения на ее использование и отработку, а также полезные советы и рекомендации для прохождения собеседования на английском языке.

При составлении упражнений использовались материалы из аутентичных учебников и учебных пособий по направлению «Информационные Технологии». Для описания IT профессий использовался различный аутентичный материал из доступных интернет источников.

LESSON 1

SOFTWARE ENGINEER (DEVELOPER), SYSTEMS DEVELOPER (A BACKEND ENGINEER) VS. APPLICATION DEVELOPER

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
Apply	улучшать
Create	масштабируемость
Applications	интерфейсные (ориентированные на пользователя) приложения
Architectures	создавать
Improve	применять
Maintain	приложения
Figure out	придумывать, приходить в голову
Optimize	оценивать
Come up with	Выяснять; вычислять; понимать
Scalability	обслуживать, поддерживать
Evaluate	структура, каркас, архитектура
Update	Настройка
Collaborate	внедрять, обеспечивать, принуждать
Tweaking	сотрудничать, участвовать
Conduct	обновлять, модернизировать
Front-end (user-facing)	настраивать
Enforce	оптимизировать

Ensure	обеспечивать, добиваться

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. Higher rates may …. for special categories of goods.
2. This company …. onboard electronic equipment and design various onboard systems.
3. Determine which…. are suitable for cloud.
4. Modern …. such as micro-services affect the views too.
5. The app brings relevant metrics and the tools to resolve issues directly to mobile devices, helping to …. efficiency and safety.
6. Experts are watching to ensure and …. any systems at expected service levels.
7. I could not …. what it was till yesterday.
8. He uses them to upload content and …. images.
9. Finally, we …. the best solution.
10. ….. goes far beyond simply running on larger systems or faster processors.
11. ….. the capacity of the net before changing it.
12. It is recommended to …. your firmware using the manufacturer's instructions.
13. This is good for ……your system as well as finding spyware, viruses or other malware.
14. This will …. you never miss this important step when defragmenting.
15. Some features are available for….. e.g. Game Finder.

Task 3. *Read and translate the text carefully, mind the details.*

A software engineer

Software engineering is the branch of computer science that deals with the design, development, testing, and maintenance of software applications. Software engineers apply engineering principles and knowledge of programming languages to build software solutions for end users.

Software engineers, sometimes called software developers, create software for computers and applications. If you're an analytical thinker who enjoys solving problems and making digital products easier to use, you may find a career as a software engineer rewarding.

Software engineer tasks and responsibilities

Successful engineers know how to use the right programming languages, platforms, and architectures to develop everything from computer games to network control systems. In addition to building their own systems, software engineers also test, improve, and maintain software built by other engineers.

"I get excited about anything that involves solving problems, whether it be figuring out

how to optimize a certain part of an existing application or entirely coming up with new applications to solve certain needs," says James, a software engineer. "Problems in general stimulate my brain and give me a great sense of satisfaction."

In this role, your day-to-day tasks might include:

- Designing and maintaining software systems
- Evaluating and testing new software programs
- Optimizing software for speed and scalability
- Writing and testing code
- Consulting with clients, engineers, security specialists, and other stakeholders
- Presenting new features to stakeholders and internal customers

Systems developer vs. application developer

Software engineers will usually fall into one of two categories, systems developers or application developers.

As a **systems developer** (sometimes called **a backend engineer**), you'll build things like computer systems and networks that front-end (user-facing) applications will need. You can do this by:

- Ensuring that different types of software programs communicate with each other on one platform
- Creating and enforcing IT standards within an infrastructure
- Maintaining documentation of IT systems
- Updating to new technologies as needed
- Collaborating with development teams, senior systems architects, and data science professionals

Working as an **application developer** is more client-focused. You may work on either the front or back end of the system, designing software that the end user will interact with. Tasks might include:

- Developing applications for iOS, Android, Windows, or other operating systems
- Conducting an analysis of requirements and tweaking software as needed
- Releasing software updates
- Working with graphic designers, customer service staff, project managers, and other customer-facing departments

Recommended skills. Anyone seeking a software developer position should have knowledge of and experience with the following:

- coding in multiple programming languages, including C++, C#, Python, Java, JavaScript, .NET, SQL Server, Ruby and HTML;
- general knowledge of computer science and software development concepts;
- critical thinking; and
- strong communication skills.

Paths to this career. For entry-level positions, most companies prefer four-year bachelor's degrees in computer science. But some software developers may have only an associate's degree or a certificate of completion from a boot camp for building coding skills. Senior-level positions may require advanced computer science degrees.
Demand. The number of software developer jobs is projected to rise 25% between 2023 and 2033.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the main responsibilities of software engineers?
2. What kind of skills are required for this job?
3. What's the difference between a systems developer and an application developer?
4. What professional skills do you already possess if any?
5. Are the strong communication skills? Explain why?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. Some believe that the open source era is coming to _____. = Some believe that the open source era is about to end.
- an end
- an ending
- a finish

2. Her programming skills are top-_____. = She has great programming skills.
- heavy
- notch
- hat

3. We've witnessed some _____ technological progress. = We've witnessed some incredible technological progress.
- reproachable
- ravishing
- remarkable

4. This software is full of _____. = This software is faulty; it has defects.
- bugs
- insects
- headaches

5. I've programmed many sites.= I've _____ many sites.
- codified
- give code to
- coded

6. It seems there has been a bit of a _____. = We didn't properly communicate our needs to each other.
- misinformation
- miscommunication
- mist

7. Their website really _____. = Their website became really successful.
- took off
- took out
- took away

8. It's a _____ problem. = It's a problem that happens over and over.
- reticent
- recurrent
- stagnant

9. You can use this widget on more than one website. = You can use this widget on _____ websites.
- multi-level
- multiple
- multiplied

10. This solution is alright, but it's not the best (one). = This solution is adequate, but it's not _____.
- optical
- optimistic
- optimal

LESSON 2

DATA SCIENTIST

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
to back up	шаблон

to compress	сжимать; создавать/удалять
to debug	включать, активировать
to create/to delete	сжимать
to disconnect	съемные носители информации
to enable	отлаживать
to plug in	перезагружать
to reboot	подключать
to verify	проверять, техническая хватка
power supply unit	запрос
removable media	отключать, разъединять
a query	блок питания
a template	выполнять резервное копирование
waterfall model	механизм доступа
access mechanism	каскадная модель разработки
technical acumen	проверять

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. It was a small victory, and a reminder of Mr. Musk's …….…
2. Another advantage of this data warehouse is that you can create similar …….. to various data sources.
3. A ……. was not provided as requested before.
4. It is not a valid …...
5. A ……. is necessary for computer security system.
6. Increasingly powerful computers demand increasingly hungry …….
7. The method is ……. in the calculation of a number of test problems, using all the above schemes.
8. The system takes five minutes to …….
9. The culprit would have to …….. a thumb drive.
10. You should always ……. auto-grow, but not rely on it.

11. If I cut this wire, it should ……... the firing mechanisms.
12. Your program is being ……..…
13. We ……. the right backstory for the game.
14. Our engineers realized you were trying to ……...a program, not infect it.
15. This file needs to be ……. to a minimum size.
16. I deleted the information from my main computer by mistake but fortunately I have a ……...

Task 3. *Read and translate the text carefully, mind the details.*

Data scientist

Job description. Data scientists collect, analyze and interpret large amounts of data using advanced analytics technologies, such as machine learning (ML), AI and predictive modeling. Aside from technical acumen, knowledge of technology and math skills, data scientists use critical thinking to make informed interpretations of data. This can help organizations understand market trends, consumer behaviors and other relevant insights for developing their business strategy.

Recommended skills. Data scientist jobs typically require several specific technical and soft skills. This typically involves but is not limited to the following:
-statistics;
-calculus;
-linear algebra;
-coding;
-data visualization;
-predictive modeling;
-ML and deep learning;
-data wrangling;
-model deployment and production;
-understanding of business and technology concepts;
-communications; and collaboration.

Data scientist skills.

Paths to this career. Similar to other top in-demand tech jobs, most companies require a bachelor's degree. This may be in computer science, statistics or mathematics.

Demand. Among career websites such as Glassdoor, data scientist job titles consistently rank as "top jobs" based on criteria such as salary, job market prognosis and job satisfaction. Data scientist is a relatively new position that has grown as a result of the increasing use of big data. The number of data scientist jobs is projected to rise 36% between 2021 and 2031.

As companies continue to grow their data assets, the need to extract meaningful information -- and business value - from that data is becoming increasingly important. Analyzing and gleaning insights from data requires a different skill set than simply

storing and managing it. Many organizations are quickly realizing they need talented analytics professionals who have specific skills in scientific methods, statistical approaches, data analysis and other data-centric methodologies - or, more simply, data science.

The field of data science focuses on uncovering information and insights in large amounts of both structured data and unstructured data. It enables data-driven organizations to get answers to business questions, spot trends and make informed predictions.

Data science work is typically done by data scientists. With backgrounds in mathematics, statistics, data mining, advanced analytics, algorithms, and, now, machine learning and AI, data scientists can gain a comprehensive understanding of data and apply their skills to find relevant analytics results.

For prospective data scientists, and organizations looking to hire them, the critical skills they need to do their jobs effectively include various technical capabilities. But data scientists also need soft skills - personality traits and characteristics that can help them achieve the desired outcomes and bridge the gap with business executives and workers on technology and data analysis. Let's look more closely at these key data science skills in both categories.

Data science technical skills

In order for data scientists to ask the right questions, develop good analytical models and successfully analyze the findings, they must have a variety of "hard skills" that require specific training and education. Here are eight technical skills that data scientists typically need.

1. Statistics

Because data scientists regularly apply statistical concepts and techniques, it should come as no surprise that it's important for them to have a good understanding of statistics. Being familiar with statistical analysis, distribution curves, probability, standard deviation, variance and other elements of statistics helps data scientists collect, organize, analyze, interpret and present data. That better enables them to work with the data to find useful results.

2. Multivariable calculus and linear algebra

Being able to apply mathematical concepts to understand and optimize the fitting functions that match a model to a data set is incredibly important. Otherwise, the model won't make accurate predictions. Additionally, data scientists should be versed in using dimensionality reduction to simplify complicated analysis problems involving high-dimensional data. Calculus and algebra skills are also a must in machine learning -- for example, to train an artificial neural network on large volumes of data.

3. Programming and coding

Many data scientists learn programming out of necessity. They typically aren't coding masters and usually don't have a degree in computer science, but they are familiar with the basics of programming and writing code. Python is the most popular programming language among data scientists by a wide margin. In a 2022 survey done by Google's Kaggle subsidiary, which runs an online data science community, more than 80% of

the 2,675 respondents who identified themselves as working data scientists said they use Python. Second on the list was SQL, at just over 40% usage. R is another popular language for data science applications and projects, particularly statistical computing and graphics uses. Other programming languages that data scientists often use include C and C++, Java and Julia.

4. Predictive modeling

Being able to use data to make predictions and model different scenarios and outcomes is a central part of data science. Predictive analytics looks for patterns in existing or new data sets to forecast future events, behavior and results; it can be applied to various use cases in different industries, such as customer analytics, equipment maintenance and medical diagnosis. The potential uses and benefits make predictive modeling a highly valued skill for data scientists.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the main responsibilities of a data scientist?
2. What kind of soft skills are basic for a data scientist?
3. What kind of technical capacities are required for this job?
4. What industries can the abilities of forecasting future events be applied to?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. To make your website "live" = To _____ your website
   - deploy
   - depict
   - deepen

2. This part of the software is not working. = This software _____ is not working.
   - component
   - area
   - zone

3. I've developed a program that will solve this problem. = I've _____ a program that will this problem.
   - done
   - conjured
   - created

4. Some of the features are not there. = Some of the features are _____.
   - away

- missing
- disappeared

5. You can build an entire website using style sheets.= You can build an entire website _____ style sheets.
- by way of
- by the way
- by means of

6. Let me try. = Let me _____ it a try.
- give
- take
- get

7. An elaborate navigation bar = A _____ navigation bar
- fancy
- funny
- fantastic

8. He's well-_____ in many modern web design techniques. = He's proficient in many modern web design techniques.
- versatile
- vested
- versed

9. Web design techniques = Web design _____
- ways
- methods
- attempts

10. We have to move some of these elements around. = We have to _____ some of these elements.
- repossess
- reposition
- review

LESSON 3

SCRUM MASTER

Task 1. *Match the words from column **A** with their meanings in column **B**. Make up sentences using these word.*

A	B
peer	nearness in space or time
hub	extend over so as to cover partly
deteriorate	network node , router
overlap	secretly listen to a conversation
thoroughfare	a device for connecting computers in a network
proximity	become progressively worse
eavesdrop	path forming a route between two places

Task 2. *Match sentences with the words from the box to make them logical.*

icon, document, username, the computer, hard copy, backup, software

1. Switch on ….
2. Log on with your ……. and password.
3. Double-click on an…….... to open the application.
4. Make a ……. so you don't lose your information.
5. Create a new ……. and then save it.
6. Print out a ……. so we can sign it.
7. Installed new ……. on your computer.

Task 3. *Read and translate the text carefully, mind the details.*

Scrum Master

Scrum Masters are professionals who act as a link between product owners and teams during large projects. They help refine the project timeline and process where necessary, leading products to get delivered on time.

Scrum Master responsibilities include:

- Helping software development teams apply the Scrum framework
- Planning deliverables and helping teams monitor performance
- Resolving issues that hinder the teams' work

What is a scrum master?

This is a go-to person for applying scrum to produce high-quality work. Scrum Master duties include managing timelines, resolving problems and coaching team members on

Agile methodologies.

This specialist helps create self-organizing teams that are flexible and fully productive during sprints.

Scrum Master experience and skills
You should have excellent knowledge of the scrum framework, with all its artifacts and techniques. You'll also need the ability to coordinate people and projects (occasionally facilitating changes) with your mind set on deliverables. If you're a strong communicator, a capable leader and you're invested in Agile frameworks, we'd like to meet you.

- Manage each project's scope and timeline
- Coordinate sprints, retrospective meetings and daily stand-ups
- Coach team members in Agile frameworks
- Facilitate internal communication and effective collaboration
- Be the point of contact for external communications (e.g. from customers or stakeholders)
- Work with product owners to handle backlogs and new requests
- Resolve conflicts and remove obstacles that occur
- Help teams implement changes effectively
- Ensure deliverables are up to quality standards at the end of each sprint
- Guide development teams to higher scrum maturity
- Help build a productive environment where team members 'own' the product and enjoy working on it

- Experience in a scrum master role
- Familiarity with software development
- Excellent knowledge of Scrum techniques and artifacts (such as definition of done, user stories, automated testing, backlog refinement)
- Good knowledge of other Agile frameworks (Crystal, XP etc.)
- Excellent communication and servant leadership skills
- Problem-solving and conflict-resolution ability
- Outstanding organizational skills
- Degree in Computer Science, Business or similar field
- Scrum master certification is a plus

What does a Scrum Master do?

Scrum Masters oversee project timelines and split up tasks so team members are not overwhelmed with too many responsibilities at once. They even take notes during meetings to ensure essential information is shared with the right people.

What are the duties and responsibilities of a Scrum Master?

The Scrum Master is responsible for ensuring that each team member follows the framework of Scrum. They make sure everyone knows their role and helps coach them through any unclear parts while also guiding larger teams using this method effectively.

What makes a good Scrum Master?

Scrum Masters have excellent communication and listening skills because they work with people and need to understand the needs of team members. They also must be experts with time management to ensure projects are delivered on time.

Who does a Scrum Master work with?

Scrum Masters often work with Product Owners, connecting them to the Scrum team and providing guidance on better cooperation. Their work ensures that every aspect of their work goes as planned.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the main duties of a computer a scrum master?
2. What kind of skills are required?
3. Who does a Scrum Master work with?
4. What does this specialist help to build?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. Search engines are supposed to display search results in order of _____ (= the most important results first).
- relativity
- relevance
- relations

2. A spider, also known as a robot or a _____, is a program that visits web sites and reads the content of their pages in order to create entries for a search engine index.
- caller
- crawl-space
- crawler

3. You can _____ (= prevent) spiders from indexing your page(s) by adding special instructions in a file called "robots.txt".

- blockade
- block
- black-out

4. Jim doesn't optimize his site because he doesn't care about its _____ (= position) in search engines.
- standing
- staying
- putting

5. Thanks to these changes, we've been able to _____ (= move ahead/ improve our position considerably) in the competitive online market.
- forge ahead
- go around
- get by

6. If someone tells you that your website needs an _____, it means that your website needs some major changes.
- overkill
- overtime
- overhaul

7. One often hears that "content is _____." This means that a website's content is the main factor in how high (or low) it is ranked on search engines.
- king
- prince
- ruler

8. Many people try to optimize their sites using various tricks, but the best way to _____ a high ranking is by constantly adding good content.
- ensure
- entail
- encompass

9. Keyword _____ refers to how many times a keyword appears within a certain page.
- propensity
- density
- immensity

10. If a keyword appears too many times on a given page, a search engine might _____ you (= lower your ranking) for "keyword spamming."

- impeach
- reproach
- penalize

LESSON 4

QA ENGINEER

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
flat file database	потенциальный ключ
interrelated data	всплывающее окно
relational model	доступ к информации
manipulating data table	массив данных
access information	взаимосвязанные данные
data bulk	манипулирование таблицей данных
physical database	физическая база данных
numeric information=numerical information	числовая информация=числовая информация
pop-up window	реляционная модель
candidate key	база данных с плоским файлом

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. As noted in the comments, this code would create and …. in memory.
2. Is it possible to …. after a job is completed?
3. A requirement is for our application to use the same …. but a different schema for isolation.
4. Final results of the surveys mentioned will be updated as more …. is processed.
5. John has changed his access code, 5-digit ….
6. You should enforce uniqueness on the email address so it can be used as a ….
7. Ransomware developers often use …. that advertise software products that remove malware.
8. Nowadays, you can use huge …. that go gigabyte in size.
9. The …. makes it easier to data mine later on.
10. I still cannot figure out a way that is very easier for sellers to upload their ….

Task 3. *Read and translate the text carefully, mind the details.*

QA Engineer

A QA Engineer is a professional who finds and fixes bugs in a product or program before its launch, collaborating with developers on fixes to those problems when necessary. They're needed across many industries, including automotive, medical devices and food/beverage.

QA Engineer responsibilities include:

- Reviewing quality specifications and technical design documents to provide timely and meaningful feedback
- Creating detailed, comprehensive and well-structured test plans and test cases
- Estimating, prioritizing, planning and coordinating quality testing activities

Quality Assurance (QA) engineer develops and executes exploratory and automated tests to ensure product quality.

QA engineer responsibilities include designing and implementing tests, debugging and defining corrective actions. You will also review system requirements and track quality assurance metrics (e.g. defect densities and open defect counts.)

The QA technician role plays an important part in our company's product development process. An ideal candidate will be responsible for conducting tests before product launches to ensure software runs smoothly and meets client needs, while being cost-effective. Should hold an engineering background and enjoy providing end-to-end solutions to software quality problems.

Ultimately, you should monitor all stages of software development to identify and resolve system malfunctions to meet quality standards.

Responsibilities

- Review requirements, specifications and technical design documents to provide timely and meaningful feedback
- Create detailed, comprehensive and well-structured test plans and test cases
- Estimate, prioritize, plan and coordinate testing activities
- Design, develop and execute automation scripts using open source tools
- Identify, record, document thoroughly and track bugs
- Perform thorough regression testing when bugs are resolved
- Develop and apply testing processes for new and existing products to meet client needs
- Liaise with internal teams (e.g. developers and product managers) to identify system requirements
- Monitor debugging process results

- Investigate the causes of non-conforming software and train users to implement solutions
- Track quality assurance metrics, like defect densities and open defect counts
- Stay up-to-date with new testing tools and test strategies

- Work experience in software development
- Proven work experience in software quality assurance
- Strong knowledge of software QA methodologies, tools and processes
- Experience in writing clear, concise and comprehensive test plans and test cases
- Hands-on experience with both white box and black box testing
- Hands-on experience with automated testing tools
- Solid knowledge of SQL and scripting
- Experience working in an Agile/Scrum development process
- Experience with performance and/or security testing is a plus
- BS/MS degree in Computer Science, Engineering or a related subject

What does a Quality Assurance Engineer do?

A QA engineer creates tests that identify issues with software before a product launch. These tests entail other tasks such as developing and running new tests and reporting their results to stakeholders, who will collaborate to fix program bugs or problems.

What are the duties and responsibilities of a Quality Assurance Engineer?

The primary responsibility of the QA Engineer is to prevent defects. In addition, they are responsible for identifying and eliminating any mistakes in code before its release to customers. Such errors could result from various issues such as insufficient data input or an improperly designed interface element.

What makes a Good Quality Assurance Engineer?

A sound QA Engineer is highly organized and can adjust priorities, having great attention to detail. They can compromise between the perfect and a good-enough result while being flexible enough for different products or processes variation.

Who does a Quality Assurance Engineer work with?

A Quality Assurance Engineer may work alongside a Design Engineer, who may assist to fix products and programs.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the primary responsibility of a QA engineer?
2. What does this specialist have to monitor?
3. What does a QA engineer create?
4. Is this job highly paid in your country?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. "Sponsored" links are links that are _____ by a company to promote themselves or their products/services.
- paid for
- given money for
- paid

2. Most SEO companies prefer to focus on search results that show up naturally (not as paid advertisements), in other words "organic search results" or "organic _____".
- listings
- lists
- click-through

3. Click fraud can be a real _____ (= can be dangerous) for your business.
- treat
- tread
- threat

4. High quality content is an _____ (= vital/ very important) part of search engine optimization.
- integrated
- integral
- interesting

5. When you _____ your content, make sure you emphasize specific key phrases for search engines.
- write again
- write anew
- rewrite

6. To increase content relevancy = To _____ content relevancy
- boost
- boast
- best

7. The person who is responsible for writing content is called a _____.

- copywriter
- content producer
- integrator

8. Rearranging you link _____ (= structure), can improve your search engine ranking.
- archetype
- archaism
- architecture

9. We have a _____ (= established beyond doubt) formula for optimizing websites.
- proving
- proven
- provable

10. To improve your chances of getting a higher rating = To _____ your chances of getting a higher rating
- best
- better
- brush up

LESSON 5

BLOCKCHAIN ANALYST

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
dedicated server	коммутация пакетов
peer-to-peer network	доступ к беспроводной сети
circuit switching	одноранговая сеть
packet switching	узел
node	нарушитель, злоумышленник
receiving station	переключение цепи
dedicated path	выделенный сервер

wireless network access	выделенный путь
intruder	приемная станция

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. I have a module that does something like …. for a stream of messages.
2. They were …. in networks, acting and reacting to flows of information.
3. A new technique relays satellite telecasts directly to residences without going through a ground ….
4. Your …. can definitely work, and clients can indeed syndicate messages that they've received to other clients.
5. So instead of encrypting the folder, you can encrypt your important docs and store them in the app's …...
6. The …. is overloaded.
7. You must add the users from other domains to the Application Catalog folder and then grant them ….
8. These probe request frames can be used by …. to determine the name of the non-broadcast network.
9. In a …. environment, there is no direct connection.

Task 3. *Read and translate the text carefully, mind the details.*

Blockchain Analyst

A Blockchain Analyst typically works with a team to identify and implement technological solutions related to blockchain. They help design, develop, and maintain blockchain-based platforms and systems, ensuring their efficiency and security. Additionally, they work to analyze and improve the functionality of these systems, while also staying up-to-date with new developments and trends in blockchain technology. Their job is crucial in helping organizations implement blockchain solutions and make the most out of this growing technology.

What does a Blockchain Analyst do?

The role of a Blockchain Analyst is to provide expertise in blockchain technology and its applications to a variety of organizations. The ideal candidate will have a strong technical understanding of blockchain technology, and be able to analyse and interpret data associated with different blockchain-based products. They will also be responsible for identifying and assessing new opportunities for blockchain-based solutions, as well as providing advice and guidance on how to best implement them. The Blockchain Analyst will also be tasked with monitoring the blockchain market and industry trends, as well as researching new technologies in the space. This individual should have

excellent communication and problem-solving skills, and be comfortable working in a fast-paced environment.

Blockchain Analyst Role Purpose

The purpose of a Blockchain Analyst is to research, analyse and evaluate blockchain technology, systems and protocols, and to identify and assess the potential applications of blockchain technology. They must be able to evaluate the security implications and risks of blockchain applications, as well as the performance and scalability of blockchain systems. The role of a Blockchain Analyst is to provide a comprehensive understanding of the technology and its implications, and to provide advice and guidance for the implementation of blockchain solutions.

Blockchain Analyst Role

A Blockchain Analyst is responsible for researching and analyzing the potential of blockchain technology to benefit an organization's operations. They will track, analyze and interpret data related to the blockchain market, monitor relevant news and regulations, and use their expertise to help develop strategies and maximize the potential of blockchain technology. They also help develop and maintain secure and efficient blockchain networks, as well as design, develop and implement blockchain applications.

- Conducting research on blockchain technology, smart contracts, and cryptocurrency
- Analyzing blockchain data and identifying patterns

- Providing technical guidance and advice on blockchain solutions
- Creating and managing blockchains for financial and non-financial applications

- Strong understanding of blockchain architecture and applications
- Knowledge of cryptography and distributed ledger technologies
- Experience with cryptocurrency and token design
- Ability to analyze blockchain data and develop insights
- Excellent communication and problem-solving skills

- Experience with data analysis and presentation
- Ability to interpret and communicate complex information
- Proficiency in programming languages such as Python and JavaScript

- Good knowledge of the blockchain technology
- Ability to work in a fast-paced environment

Task 4. *Answer the questions to the text in Task 3.*

1. What are the main duties of a Blockchain Analyst?
2. What programming languages are mostly used by this specialist?
3. Why are the strong communication skills recommended?
4. Is this job popular and highly paid in your country?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. As _____ service becomes more available at home, more and more people will watch video online.
 - broadband
 - broad-scope
 - broad

2. Certain shows are now made _____ (= especially) for web sites.
 - expressly
 - special
 - express

3. Programs made for the web are usually much shorter than their TV _____.
 - parts
 - counterpoint
 - counterparts

4. Most online video viewers aren't willing to sit in front of their _____ for 60 minutes straight.
- monitoring
- monitor
- TV shows

5. A lot of online videos are _____ towards (= made for) younger viewers.
- made
- guarded

- geared

6. Intel recently _____ a chip which is designed to improve the quality of online video.
- unveiled
- let loose
- admitted

7. Pretty soon you'll be able to load and watch _____ (= good quality), full-screen videos at the same speed that you watch low-resolution videos today.
- high-resolution
- effective
- successful

8. The new advances in this field mean that online video providers will soon be able to _____ with HDTV.
- competition
- concur
- compete

9. This video _____ software is great! I hardly notice any loss in quality.
- compress
- compression
- concentration

10. YouTube automatically compresses video files so they can be _____ to your computer.
- broadband
- streamed
- stream

LESSON 6

ARTIFICIAL INTELLIGENCE SPECIALIST

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
address buffer	буфер адреса; адресный буфер
appliance	задание, присвоение устройство
assignment	пропускная способность

bandwidth	отлаживать
cloud storage	устройство недостаток
compile	извлекать устройство
compress	зашифровывать
credentials	макет, разметка
database	папка
debug	недостаток отлаживать
drawback	облачное хранилище данных
eject	компилировать извлекать устройство
encrypt	сжимать зашифровывать
folder	папка база данных
layout	пространство имен
maintenance	поддержка
namespace	учетные данные

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. As this is a demo, you can change its code, and print the …….
2. I feel really out of control when a major …. is broken.
3. Your primary …. right now is the protection.
4. I've found lots of high-level, encrypted traffic using a suspicious amount of ….
5. ….. provides static hosting capabilities.
6. I just need access to wherever they …. all the available data.
7. There's not enough time, and I would need to …. the tracks.
8. The user must enter his or her …. twice.
9. We checked out every …. we could access.
10. After spending weeks double-checking their hardware and trying to …. their code, his team discovered that their data weren't exactly the same.
11. With proper implementation of the rules, your biggest …. will be the lack of profit.
12. Don't pull a flash card out before you click ....
13. It is the responsibility of all Internet sites that store personal data of users to …. them.
14. The data is in a hidden …., code name Busdocs.
15. One can note the difference when comparing these websites with those that do not have a standard …. and design policy.
16. He was in charge of …. for all company computers.
17. Mail routing from cloud to on-premises uses a shared domain ....

Task 3. *Read and translate the text carefully, mind the details.*

Artificial intelligence specialist - also known as Machine learning engineer
Job description. AI specialists develop AI and ML technologies for computer programs and other machines to simulate how the human mind works. Specific job duties can vary but may also include jobs such as ML engineer, business intelligence developer and AI architect.

Recommended skills. AI and ML specialist positions often require specific technical proficiencies, such as the following:

- expertise in AI and ML;
- expertise in deep learning;
- experience working with TensorFlow;
- experience with natural language processing (NLP);
- knowledge of the Python programming language;
- experience working with algorithms;
- knowledge of object-oriented and functional design principles;
- development of REST APIs;
- NoSQL design; and relational database management system design and optimization.

Paths to this career. At a minimum, AI specialists generally have a bachelor's degree in computer science, plus prior experience working with algorithms and related tools. But employers typically prefer to hire candidates with advanced master's degrees.

Demand. ML engineer was ranked as the fourth-fastest growing job in the world over the past five years, according to the latest survey report. Skills are relatively specific, and demand for the job is spread across multiple industries, including computer software, IT, automotive, defense and communications.

NLP What is natural language processing?
Natural language processing (NLP) refers to the branch of computer science—and more specifically, the branch of artificial intelligence or AI—concerned with giving computers the ability to understand text and spoken words in much the same way human beings can.
NLP combines computational linguistics—rule-based modeling of human language—with statistical, machine learning, and deep learning models. Together, these technologies enable computers to process human language in the form of text or voice data and to ‘understand’ its full meaning, complete with the speaker or writer’s intent and sentiment.
NLP drives computer programs that translate text from one language to another, respond to spoken commands, and summarize large volumes of text rapidly—even in real time. There’s a good chance you’ve interacted with NLP in the form of voice-operated GPS systems, digital assistants, speech-to-text dictation software, customer service chatbots, and other consumer conveniences. But NLP also plays a growing

role in enterprise solutions that help streamline business operations, increase employee productivity, and simplify mission-critical business processes.

Task 4. *Answer the questions to the text in Task 3.*

1. What kind of specific technical proficiencies does an AI specific require?
2. What sphere of activities does this job in demand for?
3. What branch of computer science does NLP refer to?
4. What degree is more preferable to apply for the position of an AI specialist or a ML engineer?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. He's a tech _____. = He's an expert on technology.
   - pundit
   - panda
   - bandit

2. We're closing that site down. = We're _____ that site down.
   - shifting
   - shutting
   - shafting

3. Thomas has thought of some great ideas for the site. = Thomas has _____ with some great ideas for the site.
   - come down
   - come around
   - come up

4. To pull the _____ on something. = To close something down.
   - plug
   - cord
   - rope

5. Our company is nearly _____ to a downturn (in the economy).= Our company is unlikely to be affected by any possible downturn (in the economy).
   - mute
   - attune
   - immune

6. We're trying to _____ out a niche for our website. = We're trying to

find customers who will be interested in our website.
- cut
- carve
- slice

7. These devices must be able to work in _____ with one another. = These devices must be able to work perfectly together.
- sync
- sing
- sink

8. I need to _____ accounts for each of the students. = I need to create accounts for each of the students.
- sit up
- set up
- set off

9. The number of personal devices is _____ to multiply. = The number of personal devices will most likely increase (greatly).
- found
- bound
- wound

10. He was playing around with the settings. = He was _____ around with the settings.
- finding
- fading
- fiddling

LESSON 7

IT MANAGER

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
negotiate	поставщик
outsource	запрещать, препятствовать
password	заменить
plug in	загрузить
prohibit	осуществлять аутсорсинг

replace	деинсталлировать, удалять заменить
uninstall	пароль заменить
upload	вести переговоры загрузить
validation	проверка
variable	таблица адресов виртуальных методов
vendor	подключать
virtual control program interface	выполнять резервное копирование
virtual methods table	переменная, параметр таблица адресов виртуальных методов
	виртуальный программный управляющий интерфейс выполнять резервное
back up (backup)	копирование
boot	записывать на оптический диск
burn	загружать, загружаться (например, об устройстве или операционной системе)

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. Special requirements should …. during a preparation period.
2. I need to …. some programming.
3. The key and …. were obviously ill-gotten.
4. It's another version of the same machine, and we know where to …. it ….
5. What measures exist to …. the activities listed in this contract?
6. We …. them every five years as part of our regularly scheduled maintenance.
7. If you've already done so, learn how to upgrade, …., or move it to another computer.
8. It was …. via an encrypted IP an hour ago.
9. The software changes delivered in June 2023 are being tested concurrently with data collection and ….
10. I complied the database, but without another …., the list is fairly extensive.
11. We worked together on a couple projects when he was a ….
12. In computing, …. is a specification that allows a DOS program to run in protected mode, providing access to many processor functions that are not available in real mode.
13. Virtual function calls are commonly implemented using a ….

14. There are also many external and third-party tools that you can use to …. and recover data.
15. Every time we restart the server the virus replicates itself during …. and crashes the host.
16. I'll …. you a copy if you want.

Task 3. *Read and translate the text carefully, mind the details.*

IT manager

IT manager - also known as information systems manager, IT director, chief information officer and chief technology officer

Job description. IT managers are responsible for the short-term and long-term visions for the technology needs of an organization. Job duties typically include collaborating with executives and upper management on matters related to technology, such as large purchasing decisions, managing key vendor relationships, managing software and hardware upgrades, and generally overseeing IT tasks, such as security. IT manager positions exist in essentially every industry.

Recommended skills. Effective IT managers typically have the following skills:

- strategic thinking;
- leadership;
- project management;
- communication;
- work well in high-pressure, high-stress situations;
- effective collaboration;
- broad technical skills;
- general computer science expertise; and
- in-depth awareness of current technologies and market trends.

Paths to this career. IT manager positions typically are not entry-level jobs. Positions may range from intermediate to senior level. IT managers typically have at least a bachelor's degree in computer science, but some IT managers may have a master's degree or advanced degree in a related field. Typically, several years of work experience in IT-related roles is required to become an IT manager.

Demand. A lot of new IT manager jobs are expected to be created. This is largely due to increases in digital transformations across all industries and the need for employees who can help organizations effectively manage their use of technology. Industries with sensitive data, such as retail, require IT managers with knowledge and expertise in cybersecurity.

Task 4. *Answer the questions to the text in Task 3.*

1. Is an IT manager job considered to be easy to get?
2. What kind of professional skills should an effective It manager possess?
3. Are the strong communicative skills important? Why?
4. Why are It managers in great demand nowadays?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. This is the _____ mobile device that uses LTE (Long Term Evolution) technology.
   - first in the world
   - first world
   - world's first

2. You have to _____ (= attach it) to a desktop or laptop.
   - hook it
   - hook it up
   - hang it

3. Very thin speakers = _____ speakers
   - Ultra-skinny
   - Ultra-thin
   - Ultra-skin

4. This laptop can _____ (= function on) battery power for about 2.5 hours.
   - run off
   - turn on
   - use

5. The new technology really _____ (= improves) the performance of the bass frequencies of these speakers.
   - enthralls
   - entails
   - enhances

6. You can't _____ the price. = The price is very good (You won't be able to find a better deal).
   - beat
   - lower
   - guess

7. "Mobile _____" refers to high-speed internet access on mobile devices.
- broadband
- interface
- 4G

8. HDTV broadcasts are often described as "_____ clear". (= absolutely clear; perfect)
- water
- mirror
- crystal

9. This system will provide you with _____ (= professional level) digital video surveillance for an affordable price.
- good to the last drop
- professional grade
- expert

10. This video surveillance system only takes about 30 minutes to _____. (= prepare, assemble)
- set up
- set aside
- dead set

LESSON 8

INFORMATION SECURITY ANALYST

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	**B**
to deploy	ссылаться на что-либо
to develop	внедрять, реализовывать
to disable	объединять в одну систему
to disconnect	разрабатывать
to download	включать, активировать

to enable	форматировать
to execute	проверять
to format	устанавливать
to implement	разъединять, отключаться
to initialize	вставлять из буфера обмена
to install	исполнять
to integrate	отключать, деактивировать
to link to	загружать
to load	развертывать (приложение на сервере)
to paste	приводить в исходное состояние
to restore	загружать, скачивать
to scroll up/down	прокручивать вверх/вниз (страницу)
to verify	восстанавливать исполнять

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. These resource guides are meant to be used to …. new IT services or capabilities.
2. The intelligence we …. nowadays gets us close to our global aim.
3. Can we track where these photos are coming from if we …. the protocols?
4. Scientists already….and destroyed that unit.
5. I hack into a database, …. all the codes, and there it is.
6. You …. and publishing your archiving topology by using Topology Builder.
7. …. your prime function.
8. You do not have to …. them for us.
9. We agreed that we will go ahead and …. a number of ideas.
10. It'll just take a few minutes to.…
11. Those guys are in charge to …. antivirus programs and security systems.
12. The data source uses …. security to connect.
13. The …. that site turned out to be unsafe.
14. They are allowed to create or delete folders, copy and …. files except …. ones.
15. It is pointless to …. the old system because it was ineffective.

16. You can also customize the scroll wheel to …. and... and any other buttons on your mouse.
17. This functionality is also …. as part of the validation process.

Task 3. *Read and translate the text carefully, mind the details.*

Information security analyst

Job description. Information security analysts are responsible for protecting company computer systems and networks from malware and other forms of cyber-attacks. Job responsibilities may include planning and executing cybersecurity measures, monitoring networks for breaches, investigating and reporting breaches, conducting penetration testing and maintaining cybersecurity defense measures. Positions may require security generalists or focus specifically on network security.

Recommended skills. Information security analysts typically have the following skills:

- knowledge of cybersecurity threats and defense strategies;
- understanding of networks and computer systems;
- technical acumen;
- communication skills;
- collaboration skills;
- critical thinking skills.

Paths to this career. Information security analysts typically have bachelor's degrees in computer science or related fields, as well as previous work experience in such roles as network, computer systems or database administrator.

Demand. Information security analyst positions are increasing. This demand is due to general increases in cyber-attacks and expansions in the collection and storage of sensitive data, such as vertical market software products for healthcare and financial industries.

Task 4. *Answer the questions to the text in Task 3.*

1. What do the job responsibilities of an Information security analyst include?
2. What kind of work experience can help you to become an Information security analyst?
3. Why is the knowledge of cybersecurity threats and defense systems obligatory for this job?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. The new external Skype phone can _____ (= can be used) as both a telephone and a webcam.
- function
- interpret
- access

2. This new functionality is really _____. (= elaborate, fancy)
- soporific
- sophisticated
- sincere

3. This surveillance system can be set up to send cell-phone _____.
- information
- messaging
- alerts

4. In some places, it's already possible to watch live TV _____ on a mobile device. (= cell phone, BlackBerry, etc.)
- broadcasts
- air-time
- sets

5. This surveillance system allows you to _____ your cameras through the internet.
- assess
- click
- access

6. I'm not sure I like this new _____. (= general tendency e.g. in culture/technology…)
- train
- trend
- tram

7. New technology devices are often referred to as "_____".
- gadgets
- goods
- gateway products

8. Sony has always been an innovator in consumer electronics. = Sony has always been on the _____ of consumer electronics.
- cutting board

- cutting edge
- cut and paste

9. Novatel's new MiFi is a small 3G radio that can create a mobile Wi-Fi _____ almost anywhere.
- hot-connection
- hotspot
- dial-up

10. The MiFi will be sold through wireless network _____ (= operators).
- provisions
- professionals
- providers

LESSON 9

COMPUTER SYSTEMS ANALYST

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
a bus	кабель
a cable	шина
a central processing unit (CPU)	графический процессор
a computer case	постоянное запоминающее устройство (ПЗУ)
a device	материнская плата
a fan	центральный процессор
a graphics processing unit (GPU)	сетевой адаптер (сетевая карта, сетевая плата)
a hard disk drive (HDD)	звуковая карта
a laptop ноутбук, портативный компьютер	вентилятор охлаждения, кулер
a light-emitting diode (LED)	жесткий диск

a motherboard (mainboard)	устройство
a network card	твердотельный накопитель
a port	светодиод
a power supply unit (PSU)	воздушное охлаждение
a solid-state drive (SSD)	графический процессор
a sound card, an audio card	сенсорный экран
a storage device	оперативная память (ОЗУ)
a touch screen	запоминающее устройство, накопитель
air cooling	блок питания
an expansion card	съемные носители информации
an optical disk drive	водяное охлаждение
an uninterruptible power source (UPS)	оптический привод
random-access memory (RAM)	карта (плата) расширения
read-only memory (ROM)	корпус системного блока
removable media	источник бесперебойного питания
water cooling	разъем, порт

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. All disks on a shared storage …. are automatically placed in an offline state.
2. It's a fiber-optic ….
3. Today's …. include the maths co-processor, cache memory, and one or more GPUs (graphics processing units), among other things.
4. You should shut down your computer when you must install new hardware enclosed in the.…
5. This is a device that detects infra-red radiation, the particular thermal pattern that is given off at thirty-seven degrees Celsius.
6. A small outlet …. turned silently in its circular hole over the entrance.
7. The hardware business makes computers more and more parallel, using new approaches like multicore processors and.…
8. Backing up to a hard disk drive is convenient, but does not protect against a fire.
9. …. play a ubiquitous if humble role in today's electronic world.

10. We will try to cram a bigger …. into a smaller case.
11. You will need a …. for each system; this slots into an available slot at the back of each computer and they're linked with cable.
12. Increasingly powerful computers demand increasingly hungry ….
13. Sudden power losses and other electronic problems can kill a …. and data recovery can be difficult.
14. The speed of a …. is also known as the data transfer speed.
15. Laptop …. are also considered internal cards.
16. We store all this data on an enormous array of …. in the other room.
17. This …. is used to produce the hydrogen.
18. Another computer component that can be upgraded easily is …., commonly called RAM.
19. Neither of the variables are stored in ….
20. After the image is prepared, you can burn the image to.…
21. It's like a high-powered gaming system with a ....

Task 3. *Read and translate the text carefully, mind the details.*

Computer systems analyst

Job description. Computer systems analysts design computer systems for client organizations. These professionals learn about the business models of their clients and research which technologies best fit the organization's specific needs and use cases. The overall goal is to design a computer system for the customer organization with the appropriate hardware, software and network for the organization's budget and needs. Computer systems analysts may be employed by client service firms for computer systems design or work in-house in industries, including banking, healthcare and technology.

Recommended skills. Computer systems analysts typically have the following:

- comprehensive understanding of computer systems and IT;
- comprehensive understanding of business models and how they use technology;
- general computer science knowledge;
- current knowledge of technology and business;
- critical thinking skills;
- research skills;
- communications skills; and
- client-facing skills.

Paths to this career. Computer systems analysts typically have a bachelor's degree in information systems or computer science. Some employers may prefer candidates who have bachelor's degrees in computer science and business-related studies or have a master's degree.

Demand. As forecasted only 9% increase in jobs. Most of these increases are linked to expansions in healthcare IT.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the main duties of a computer systems analyst?
2. What spheres of business are mainly interested in these specialists?
3. Why are the client-facing skills recommended?
4. Is this job highly paid in your country?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. LG Electronics recently _____ (= presented) a smartphone chip which can offer a connectivity speed that's eight times faster than that of current smartphones.
   - unraveled
   - unveiled
   - underestimated

2. Its capabilities are far _____ to (= much better than) those of current 3G devices.
   - super
   - above
   - superior

3. With this cell phone, you can even _____ high-definition movies without any buffering.
   - streak
   - stream
   - streamline

4. Cell phone = mobile phone = _____
   - Handset
   - Handy
   - Handle

5. They plan to _____ (= launch) this new phone in 2015.
   - roll out
   - throw out
   - break out

6. The new RIM BlackBerry has gotten _____ reviews. = Not everyone likes the new RIM BlackBerry.
- matted
- masked
- mixed

7. LTE (Long Term Evolution) technology will probably be used by many next-_____ (= future, the newest) mobile devices.
- generation
- genetics
- generalization

8. Many new mobile devices use a touch _____ instead of a real keypad.
- interface
- interaction
- intercom

9. The iPhone 6 is a little _____. (= it has minor technical problems)
- buddy
- buggy
- busy

10. New products often _____ space better than their predecessors. = New products often make better use of space than their predecessors.
- minimize
- use up
- maximize

LESSON 10

COMPUTER NETWORK ARCHITECT

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
a compiler	запрос
a debugger	шаблон
a desktop application/app	ядро (например, операционной системы)

a device driver	отладчик
a kernel	драйвер устройства
a mobile application/app	полоса прокрутки
a plug-in (plugin	система контроля версий
a programming language	строка состояния
a query	компилятор
a scroll bar	текстовый процессор
a snapshot	текстовый редактор
a spreadsheet	утилита (служебная программа)
a status bar	мобильное приложение
a template	язык программирования
a text editor	снимок состояния системы
a utility	гибкая методология разработки
a version control system (VCS)	приложение для настольного компьютера
a word processor	электронная таблица
acceptance testing	шрифт
agile methodology	плагин, расширение, дополнительный программный модуль
font	приемочное тестирование

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. That must be a …. bug.
2. You can run it in a.…
3. It works with a companion …., and supports up to two remote computers.
4. I'm developing an app which communicates with a.…
5. Their intention was eventually to develop a …. to be the center of the operating system.
6. Its findings are expected to be published online and on.…
7. The second …. connects fragments of input data and executed basic blocks of the target program.

8. The project has its own …. and its own development environment – both of which are free.
9. Keywords are search terms that users type into a search box when constructing a.…
10. I read long texts, so I press the spacebar to move down the screen, rather than using the mouse wheel or.…
11. It is just a snapshot based on obvious injuries.
12. Do you have access to a monthly ….?
13. A secure area on the website which displays a padlock symbol in the …. of your web page.
14. Using this matrix as a …., you can construct as many as you like.
15. You have to parse (=analyze) the data in a .... and then script it into a searchable database.
16. This free …. could become one of your most valuable tools.
17. It is a …., not a backup system.
18. Somehow we managed to design a …. that doesn't have fonts.
19. Has the team completed user ….?
20. The …. is an excellent tool for managing this process.

Task 3. *Read and translate the text carefully, mind the details.*

Computer network architect

Job description. Computer network architects are responsible for designing and constructing data communication networks for organizations. These include WANs, LANs and intranets. Tasks for a computer network architect can range from setting up simple connections between offices to setting up multicustomer cloud architectures. Core responsibilities for a computer network architect include building and presenting detailed networking plans to management and maintaining proper maintenance and upgrades for network hardware and software.

Recommended skills. Computer network architects typically have the following skills:

- expertise in networking technology;
- understanding of business IT;
- general computer science knowledge;
- interpersonal and presentation skills;
- ability to understand different business models; and
- knowledge of computer and network administration.

Paths to this career. Typically, computer network architects have a bachelor's degree in computer science, information systems or a related technical field. More competitive positions may prefer candidates with a master's degree in information systems. Computer network architect jobs are not entry-level, as they usually require five to 10 years of work experience in roles such as a network or database administrator or computer systems analyst.

Demand. There are projected to be new jobs created, as a result of expanding IT needs within various companies all over the world.

Task 4. *Answer the questions to the text in Task 3.*

1. Describe the main tasks for a computer network architect?
2. How many years of work experience is required for a good specialist?
3. What related technical fields must the candidate be involved in?
4. Are there managing skills important? Why?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. The keypad is _____ designed (= not designed very well).
 - awkwardly
 - astutely
 - seamlessly

2. The video still comes in a bit _____. (= the quality of the video is not very good)
 - high-level
 - pixelated
 - palatable

3. The camera quality still _____ the market. (= is worse than that of its competitors)
 - falls flat
 - is on
 - falls behind

4. Fancy options = _____ options
 - Slick
 - Slack
 - Sloping

5. This particular 3G phone is _____. (= it doesn't weigh a lot)
 - light of weight
 - soft to the touch
 - lightweight

6. This camera has a headset _____ where you can plug in

your headphones.
- compartment
- jack
- area

7. A keyboard that comes out is called a _____ keyboard.
- slide-out
- come-out
- go-out

8. Some companies are developing mobile devices that are more _____ to deaf and blind people. (= cellphones that deaf and blind people can use more easily)
- flexible
- accessible
- open

9. The light sensor automatically adjusts the brightness of the LCD screen to _____ (= save) power and extend battery life.
- constrain
- conserve
- construct

10. The phone is in camera _____. (= it is functioning as a camera)
- modus
- modem
- mode

LESSON 11

SITE RELIABILITY ENGINEER

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
an algorithm	кодировка
an array	алгоритм
an encoding	массив

an enterprise application	двоичные данные
an executable (file)	данные, информация
an interpreter	прошивка, микропрограмма
an operating system (OS)	корпоративное приложение
application software	платное программное обеспечение
aspect-oriented programming (AOP)	исполняемый файл
binary data	интерпретатор
commercial software	программное обеспечение
data	операционная система
data processing обработка данных	экстремальное программирование
extreme programming	прикладное программное обеспечение
firmware	бесплатное
freeware	интегрированная среда разработки
incremental development	итеративная модель разработки
integrated development environment (IDE)	вредоносное программное обеспечение
iterative development	инкрементная модель разработки
malicious software (malware)	аспектно-ориентированное программирование

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. An …. for calculating the integral with a fixed amount of memory is proposed.
2. For this purpose, …. of particles under mechanical stress has been formed on the silicon substrate.
3. They …. all messages with "safe" algorithms.
4. It is generated by an …., which I have no control over.
5. I wanted to run an …. in an AppDomain.
6. I actually wrote an …. once as part of a Test Automation framework.
7. Installing an …. usually involves formatting (erasing) a partition.
8. They use this …. as standalone software.
9. I thought maybe I could use some …. instead.
10. Computers deal in ….

11. I am developing a plug-in for a ….
12. Final results of the surveys mentioned will be updated as more …. is processed.
13. There is a well-known …. principle – YAGNI.
14. If there hasn't been a …. update in the last year, the router has probably been discontinued.
15. Although shareware and …. programs are bountiful on the Web, some are better written than others.
16. This effect is part of the objective of incremental development.…
17. It also includes an optional web-based …. and admin interface.
18. A …. program is designed to damage or do other unwanted actions on a computer system.

Task 3. *Read and translate the text carefully, mind the details.*

Site reliability engineer

Job description. Site reliability engineers (SREs) ensure that websites and business applications are operating smoothly using software engineering skill sets to address problems with operations and architecture. Duties between SREs are typically split between developing -- such as automation, scaling and building new features -- and technical troubleshooting to address operational issues that arise.

Recommended skills. SREs typically have the following:

- comprehensive knowledge of software development;
- proficiency coding in programming languages, such as Java and Python;
- strong knowledge of major OSes and their administration;
- familiarity with DevOps engineering practices;
- knowledge of networking, load balancing, protocols such as TCP/IP and services like DNS; and
- thorough knowledge of technology such as servers, storage, virtualization and network monitoring.

Paths to this career. Like many of the other top in-demand tech jobs, SRE roles typically require a bachelor's degree in computer science. Work experience is often required as well. Most employers ask for work experience supporting scalable service environments, as well as coding experience. However, SRE job requirements can vary greatly between companies.

Demand. SRE roles have been experiencing 34% annual growth in the last four years, according to the LinkedIn "Emerging Jobs Report." SREs were also ranked 21st on the fastest-growing jobs according to the 2022 LinkedIn Jobs on the Rise list.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the main responsibilities of a site reliability engineer?
2. What programming languages should a site reliability engineer be proficient in?
3. Why do these job requirements vary greatly?
4. Have you ever heard about this job before?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. This phone _____ high in terms of versatility. = This phone is very versatile. Other phones will have a hard time matching this versatility.
- sets the stage
- makes the grade
- sets the bar

2. The home menu is _____. = You can personalize/alter the home menu.
- customary
- customizable
- accustomed

3. This phone can function as a gaming _____. = You can use this phone to play video games.
- tool
- device
- capability

4. This phone makes it easy to organize screen _____ of your favorites. (= where on the screen you would like your favorites to appear)
- placement
- place
- putting

5. The touch-screen is highly _____. (= sensitive)
- response-oriented
- touchy
- responsive

6. You ringer is off because your phone is in _____ mode.
- silent
- no-sound
- no-sounds

7. This particular model offers handwriting _____. If you

write something in your handwriting, it will convert it into text.
- recognition
- reclamation
- reconnaissance

8. Entertainment features are _____. = There aren't a lot of entertainment features.
- spread out
- open
- sparse

9. This _____ as an outlet for a USB or data cable. = This can also function as an outlet for a USB or data cable.
- splits
- doubles
- seconds

10. I need a phone that's a little more business-_____. (= one that is designed to be used for business)
- minded
- mode
- style

LESSON 12

DEVOPS ENGINEER

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
object-oriented programming (OOP)	быстрая разработка приложений (методология)
open source software	шпионское программное обеспечение
prototyping	шлюз
rapid application development (RAD)	объектно-ориентированное программирование
regression testing	узел сети
runtime (runtime environment)	гиперссылка
server software	среда выполнения кода

spyware	программное обеспечение с открытым исходным кодом
unit testing	брандмауэр, межсетевой экран
a bookmark	серверное программное обеспечение
a domain	создание прототипа, прототипирование
a firewall	регрессионное тестирование
a gateway	домен
a hyperlink	закладка (в браузере)
a node	модульное (блочное, компонентное) тестирование

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. In designing their model, the scientists chose an approach called …., which parallels the design of modern software systems.
2. Some IT consultants feel …. will appeal to small companies on the grounds of the security it offers their enterprises.
3. I'm …. an app right now.
4. Using the full framework on a small site might seem like overkill, but it still assists in.…
5. For …., you should absolutely keep files on disk.
6. The context menu verbs aren't actually stored anywhere; they're generated at …. by code inside the shell extension.
7. A decade ago, Microsoft sold perhaps a billion dollars or two of.…
8. …. collects personal information from your computer.
9. This is a result of the enhancements in the …. framework to improve extensibility, resilience, and performance.
10. I have a web app that is added to Home Screen as a.…
11. In addition to the requirements mentioned previously, the machine must be on a.…
12. A …. can also log traffic to and from the LAN.
13. I am writing a …. for some services.
14. Any external web site may provide a …. to the web site or to any of its pages without requesting permission.
15. How many …. are in the network?

Task 3. *Read and translate the text carefully, mind the details.*

DevOps engineer

Job description. DevOps engineers work on the operational side and solve development problems throughout the software lifecycle. DevOps engineers manage software code releases by working with both developers and IT employees. They understand both the coding and engineering for successful implementation of software systems and help create and improve existing software to increase efficiency and productivity. DevOps engineers are experts in automation tools for digital pipelines, which include continuous integration and continuous delivery.

Recommended skills. DevOps engineers typically have the following:

- knowledge of coding and scripting with programming languages, such as Python, Java and Ruby;
- familiarity with DevOps tools, such as integration servers, testing tools, containers, monitoring and analytics programs, and network protocols;
- strong automation skills with both manual and program testing;
- analytics skills to determine security needs, diagnose technical problems and develop software updates to fix issues;
- understanding of creating and modifying software codes by using tools such as Git, GitLab and GitHub; and
- working knowledge of databases and SQL.

Paths to this career. DevOps engineer roles typically require a bachelor's degree in computer science or engineering. Companies prefer work experience in software engineering and application development.

Demand. DevOps engineers are in the top 20 in-demand IT jobs, according to Indeed. The DevOps market is also projected to grow from its value of $6.78 billion in 2020 to $57.90 billion by 2030, according to Allied Market Research.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the responsibilities of DevOps engineers?
2. What specialists does a DevOps engineer usually work with?
3. What kind of skills are required?
4. What professional activities are they experts in?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. Many social networking sites like Facebook, Twitter, etc. help people _____ together (= get connected, become part of the same group) online.

- bend
- band
- bond

2. Twitter has implemented _____ search functionality, so that someone can find information as soon as it is posted on the network.
- timely
- faster-than-light
- real-time

3. Twitter recently _____ (= got rid of) a lot of spam accounts.
- positioned
- purged
- paced

4. The site now allows you to save _____ (= more than one) maps.
- multiple
- massive
- multiplied

5. A "friend _____" is something you send to someone asking them to join your network of friends.
- request
- network
- addition

6. The account has been _____. = The account is currently not active. -
- disassembled
- deactivated
- dismissed

7. On most social networking sites, you can _____ videos to your page. (= upload and show videos on your page)
- post
- make
- raise

8. Facebook recently launched a mobile _____. (= mobile version)
- platform
- zone
- copy

9. A lot of people find Facebook's applications and quizzes _____. (=

irritating)
- derogatory
- annoying
- nervous

10. A _____ is basically a line of text, like a sentence, etc.
- captive
- capture
- caption

LESSON 13

A FRONT-END DEVELOPER /A BACK-END DEVELOPER

Task 1. *Match the words from column **A** with their meanings in column **B**.*

A	B
a router	коммутатор, свитч
a search engine	беспроводная сеть
a subdomain	веб-сайт, веб-узел
a switch	витая пара
a website	задержка, период ожидания
a wireless network	система доменных имен
bandwidth	аппаратный адрес, MAC-адрес
broadband	облачные вычисления
client-server architecture	маршрутизатор, роутер
cloud computing	поисковая система
cloud storage	пропускная способность (канала передачи данных)
domain name system (DNS)	поддомен, субдомен
dynamic host configuration protocol (DHCP)	широкополосный доступ в интернет
instant messaging (IM)	облачное хранилище данных

Internet service provider (ISP)	одноранговая сеть, пиринговая сеть
latency	обмен мгновенными сообщениями
local area network (LAN)	глобальная сеть, широкомасштабная сеть
media access control (MAC) address	протокол динамической настройки узла
peer-to-peer (P2P)	клиент-серверная архитектура
twisted pair	интернет-провайдер
wide area network (WAN)	локальная сеть

Task 2. *Fill in the gaps with words from Task 1 in the correct form.*

1. You need a …. so your computers can share the connection.
2. I ran his username through …., to see if it would pop up on any other site, and I found this profile.
3. I have a domain that has a.…
4. Each time you …. you must either create a new database or connect to an existing one.
5. Don't rely on a …. as your only means of selling.
6. A non-broadcasting …. is also known as a hidden ….
7. I've found lots of high-level, encrypted traffic using a suspicious amount of ….
8. …. use of audio and video is on the increase.
9. I have a …. project.
10. Can this be done using any of the existing …. platforms?
11. Among other things, the app provides.…
12. The …. is about your ability to be seen and heard in the digital age.
13. He has probably just breached a ….
14. ….. go across wireless Internet.
15. If none of the above solutions worked, the error might be caused by your.…
16. Monitoring replication regularly is a good way to determine the normal replication …. on your network.
17. There should be a list of printers that are available on your.…
18. ….. is available only for the head of It department.
19. Voice and Video chat are handled almost entirely directly via a …. connection.
20. This company used …. to prove a stable internet connection in this area.
21. The data is transmitted over a …. designed for long-range communications at a low bit rate.

Task 3. *Read and translate the text carefully, mind the details.*

A Front-end developer / A Back-end developer

A **front-end developer** creates websites and applications using web languages such as HTML, CSS, and JavaScript that allow users to access and interact with the site or app. When you visit a website, the design elements you see were created by a front-end developer.

The difference between a front-end developer and a back-end developer.
Back-end developers work to develop the behind-the-scenes portions of a website or application, like data storage, security, site performance, or other server-side functions.

What does a front-end developer do?
Front-end developers create user interfaces (UI). UI is the graphical layout of an application that determines what each part of a site or application does and how it will look.

Front-end developer job description.
If someone wanted to build a website, they might hire a front-end developer to create the site's layout. The front-end developer determines where to place images, what the navigation should look like, and how to present the site. Much of their work involves ensuring the appearance and layout of the site or application is easy to navigate and intuitive for the user.

Where do front-end developers work?
The demand and flexibility of this position translate into many career opportunities across various industries and locations. Whether that means working with a non-profit organization, starting your own freelance business, or being an in-house developer for a company, you'll likely have the chance to find a role that fits your interests.

Remote developer employment.
The computer-heavy nature of the job also means plenty of opportunities to work remotely. Being a front-end developer can mean being able to work for companies across the country—or even the globe—from the comfort of your home.

The way to become a front-end developer.
A career as a front-end web developer can flex your creativity and problem-solving skills. As a field that is constantly evolving to incorporate new technology, front-end development can reward those who like to learn new things and face challenges. The next few sections outline some of the most prominent skills for front-end developers.
These three languages HTML, CSS, and JavaScript are essential to anyone who wants to work in front-end development.

- HTML (hypertext markup language): The basic building block needed to develop websites; a language that allows you to make notes in digital documents that are different from regular text.

- CSS (cascading style sheets): The language used to create the layout, color, and overall style of the pages you create with HTML.
- JavaScript: The programming language that determines what the page will do.

HTML, CSS, and JavaScript work together to determine the look and functionality of the page.

How to get started: If you want to learn HTML, JavaScript, and CSS, consider enrolling in an online course like HTML, CSS, and JavaScript for Web Developers from John Hopkins University. You'll build the foundational knowledge you need to start a career in web development while earning a certificate for your resume.

Frameworks

Frameworks are platforms for developing software consistently, efficiently, and accurately. They are tools required for JavaScript and CSS to perform the way you want them to. Having a solid understanding of them is crucial for creating page structures.

How to get started: To brush up on your knowledge of popular web development frameworks, consider learning from an industry leader. For example, you can enroll in some Web Framework courses.

Developer tools and software

Software like version control, which tracks and controls changes in your source code, is critical. It allows you to make changes to your code without starting over. Understanding how to use various software development tools is a building block to a successful career.

How to get started: The Software Design Methods and Tools course by some famous university is an excellent way to expand your knowledge of software development tools. It's 100% online and self-paced.

Workplace skills

In addition to understanding the technology that drives a website, having specific non-technical (or soft) skills can make you a better candidate for becoming a front-end developer. Here are a few you'll want to keep in mind:

- Creativity
- Problem-solving skills
- Written and verbal communication skills
- Teamwork

Task 4. *Answer the questions to the text in Task 3.*

1. What does a front-end developer create?
2. What programming languages are generally used by a front-end developer?

3. What kind of workplace skills are essential for this job?
4. What is the main difference between a front-end developer and a back-end developer?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. Facebook has a _____ translation program. (= one that is created/developed by users)
- user-driven
- user-friendly
- user-specific

2. _____ features = great/amazing features
- killer
- faster-than-light
- real-time

3. This application is still in _____. (= still being worked on/tested)
- transition
- transit
- beta

4. It just doesn't _____ to the competition. = It's just not as good as the competition.
- stock up
- stack up
- stake out

5. They recently implemented multi-account _____. (= the ability to use/control more than one account)
- request
- assistance
- support

6. The site offers a lot of advanced _____ (= functionality) to its members. -
- traits
- options
- workings

7. Social networking sites often look for ways to create a _____ (= better, fuller) experience for their visitors.

- richer
- more eccentric
- more involved

8. Facebook and Twitter can easily _____ (= connect, share information, etc.) with other websites.
- interest
- intersect
- integrate

9. I don't want everyone to be able to _____ (= find) this information.
- assess
- access
- assume

10. I haven't _____ (= changed) my status in weeks.
- uploaded
- updated
- up-ended

LESSON 14

BI (BUSINESS INTELLIGENCE) DEVELOPER

Task 1. *Match the vocabulary **1–10** with the correct definition **a–j.***

1. An electronic machine. You use it for going on the internet, storing information and playing games.
2. An electronic letter.
3. You can play this on the computer for fun.
4. You use this to write on a computer. It has letters or characters on.
5. A computer that you can travel with.
6. Your personal telephone.
7. You use this to move and click on a computer.
8. The part of your computer where you see the pictures or words.
9. Google, YouTube and Wikipedia are types of …
10. Internet connection without wires or cables.

a. laptop	b. game	c. keyboard	
d. mobile	e. email	f. screen	
g. computer	h. website	i. Wi-Fi	j. mouse

Task 2. *Fill in the gaps in the sentences with the following words in the box:*

printer, Wi-Fi, synchronize, browser, touchscreen, mp3player, upgrade, burner, upload

1. We made a copy of the wedding DVD using the …... on the laptop. Then we sent it to my uncle.

2. Take the computer over near the TV, the ……. signal is stronger there.

3. These photos look great! Why don't you …….. them to your Facebook page so your friends can see them?

4. I need to read this report on the train tomorrow and our ……. isn't working, it's got no ink. What can I do?

5. If you go jogging around the neighborhood, don't use your ……. because you won't hear traffic and it's very dangerous.

6. The only problem I have with these …….. devices is that I get greasy fingerprints everywhere and have to clean it every day!

7. Every morning, before going to work, I ……. my home and office computers so they have the same files on them.

8. I was very satisfied with the free version of the application, so now I want to …….to the paid version.

Task 3. *Read and translate the text carefully, mind the details*.

BI (Business Intelligence) Developer

A BI (Business Intelligence) Developer is a professional who designs, develops, and maintains business intelligence solutions, including data analytics platforms and reporting tools. They translate business needs into technical specifications and create visualizations and reports. Proficiency in database management systems and BI technologies is required.

What is a BI Developer?

A BI Developer is a professional who designs, develops, and maintains business intelligence solutions. They use data analytics platforms, reporting tools, and visualization techniques to turn raw data into meaningful insights that help organizations make informed decisions. They have a background in data analysis and possess strong technical skills in database management systems and BI technologies.

What **does a BI Developer do?**
A BI Developer is responsible for translating business needs into technical specifications and building BI solutions accordingly. They design and deploy reporting tools, maintain data analytics platforms, and create databases to store data. They also conduct data analysis, develop visualizations and reports, and collaborate with teams to integrate systems. Their role involves troubleshooting, improving existing BI systems, and ensuring the accuracy and efficiency of data-driven solutions.

- Designing, developing and maintaining business intelligence solutions
- Crafting and executing queries upon request for data
- Presenting information through reports and visualization

The ideal candidate should possess a strong background in data and business analysis, along with analytical and communication skills. A sound business understanding and problem-solving abilities are also desired.
As a BI Developer, you will play a pivotal role in enhancing our business intelligence system to drive informed decision-making.
Join us to contribute to our quest for improved outcomes and strategic growth through the power of data-driven insights.

- Translate business needs to technical specifications
- Design, build and deploy BI solutions (e.g. reporting tools)
- Maintain and support data analytics platforms (e.g. MicroStrategy)
- Create tools to store data (e.g. OLAP cubes)
- Conduct unit testing and troubleshooting
- Evaluate and improve existing BI systems
- Collaborate with teams to integrate systems
- Develop and execute database queries and conduct analyses
- Create visualizations and reports for requested projects
- Develop and update technical documentation

- Proven experience as a BI Developer or Data Scientist
- Industry experience is preferred
- Background in data warehouse design (e.g. dimensional modeling) and data mining
- In-depth understanding of database management systems, online analytical processing (OLAP) and ETL (Extract, transform, load) framework
- Familiarity with BI technologies (e.g. Microsoft Power BI, Oracle BI)
- Knowledge of SQL queries, SQL Server Reporting Services (SSRS) and SQL Server Integration Services (SSIS)

- Proven abilities to take initiative and be innovative
- Analytical mind with a problem-solving aptitude
- BSc/BA in Computer Science, Engineering or relevant field

What makes a good BI Developer?

Strong technical skills, analytical mindset, innovation, and effective communication. Deep understanding of data analysis, data warehouse design, and ETL frameworks. Ability to deliver high-quality results and translate business requirements into technical solutions.

W**ho does a BI Developer work with?**

BI Developers work with business analysts, data scientists, data engineers, IT professionals, and end-users such as business managers and executives.

What skills should a BI Developer have?

Proven experience in BI development or data science, expertise in database management systems, SQL queries, and BI technologies.

Strong analytical thinking, problem-solving, communication, collaboration, and documentation skills.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the main responsibilities of a BI developer?
2. What ways of presenting the information can be used?
3. Why are collaboration skills considered to be necessary?
4. What technologies does this specialist should be familiar with?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning*.

1. SEO (Search Engine Optimization) is all about making your site easier to _____ in searches.

- search
- discover
- find

2. My site doesn't _____ (= appear) in any search results.

- come off
- come up
- come out

3. I _____ it (= did a search on Google), but I couldn't find any information.

- Google-input
- Googled
- Googlified

4. Meta tags are important, but not as important as they used to be, so you shouldn't put too much _____ on them.
- emphasis
- empathy
- empire

5. The search _____ 10,000 hits. = There were 10,000 results for the search.
- turned down
- turned around
- turned up

6. I submitted my site to the directory, but it hasn't been _____ yet (= it hasn't yet appeared in the directory).
- listed
- put
- listing

7. The Alexa traffic rank is based on a 3-month _____ of traffic to a particular website.
- analysis
- analytics
- customers

8. The site's "reach" is the actual number of _____ that visit the site during a particular period.
- usability
- usefulness
- users

9. _____ refers to how easy it is for people to navigate the site.
- Users
- Usability
- Usefulness

10. I'm _____ my recommendations on an in-depth analysis of your traffic reports.
- basing

- testing
- resulting

LESSON 15

A FULL-STACK DEVELOPER

Task 1. *Find an appropriate Russian equivalent for every term.*

Full-stack development is full of unique terms.

Angular JS: An open-source web application framework that Google maintains
API: Software that allows two applications to exchange information, short for Application Programming Interface
Bootstrap: An open-source collection of front-end tools to create websites and apps
Flask: A micro-web application framework, written in Python
Framework: A layered structure that provides a foundation for developing software applications
MEAN stack: A free, open-source JavaScript software stack to build websites and apps
Open-source software (OSS): Software that has a source code that can be modified, distributed, or integrated into other projects freely
PHP: Short for Hypertext Preprocessor, a server-side (back-end) scripting language for web development
Python: A general-purpose, high-level programming language
Stack: A set of tools and technologies that developers use to do their jobs

Task 2.
2.1. *Read the following conversation how to add the details from a CV/resume on to a database for candidates applying for job vacancies in some company. Try to guess the meaning of the words/phrases* ***in bold.***

John: 'For the vacancy in our department we have **to enter** all the CV details for the candidates on to the candidates' database. Do you know how to do that?'

Paul: 'No, I've never done it before.'

John: 'No problem, I'll show you how **to complete** the form in the database with the details. First of all, you'll need to have both the database and a copy of the CV open on the screen. Now, in the database click **on** the button that says 'new entry' using the mouse. This takes you to a new screen where you can enter the details.'

Paul: 'Ok.'

John: 'Now, at the top you'll see **a section** called 'candidate details'. You have to enter the candidate's name, date of birth, address etc... here. So, to enter the name, click on **the text box** next to name, then **type in** the name using **the keyboard**. When you have done that, tab down to the next text box for date of birth using **the tab key** on the keyboard. And **type** in the date of birth. To **move down** to the next text box you need **to** press the tab key again. Continue doing that until you've filled all the text **boxes** in this section.'

Paul: 'What next?'

John: 'To the right of the 'candidate details' section, there's a box called 'photo'. **Go back** to the copy of the CV and find the candidate's photo. Click on the photo and then drag or **move** the photo from the CV onto the candidate database and **put** it **over** the **photo box** and then drop it by taking your finger off the click button on the mouse. Now, the photo has been entered onto the database.'

Paul: 'Is that it?'

John: 'No, you have to enter the candidate's job history details. But you don't have to **type** it in. You can **copy** and **paste** it from the CV. But before you do that, you have to go to the '**job history**' section on the database. You can't see this section on the screen, because it's at the **bottom** of the database form. So, you have to scroll **down** the form until this section is on the screen. Here it is.
Now, go back to the CV and highlight using the mouse all the text from the candidate's job history that you want to copy. You highlight or select the text by clicking on the mouse button and with the mouse button still **pressed** move the **cursor** to the end of the text that you want copied. Then release the mouse button.
To copy the highlighted or selected text, you can either **press** the right mouse button and click copy in the menu that **appears** or with the keyboard, hold down the control/Ctrl key and press the key 'C'. Then **go back** to the 'job history' section on the database and paste it into the text box there. After that, **save** the form and all the information is on the database.'

Paul: 'It seems simple. But how can I **access** the information on the database when I'm in an interview?'

John: 'Well, you can access all the information on the database on an iPad. To open the database on the iPad, you need to tap **on** this icon on the screen using your finger. Then, when the database opens, **tap on** the text box next to **name** and type in the candidate's full name and press or tap the enter icon and all the candidate's details will **appear** on the screen. To move or **scroll up** and **down** the details in the database, you just need to slide your finger **up or down** the screen.'

Paul: 'Perfect, thanks.'

2.2. *Do the quiz to check the meaning of the words used in the text* ***in bold****. Fill in the blanks with one of these words/phrases* ***in bold****.*

1. When you press a key or a mouse button for more than 1 second, you ….
2. To move your finger while still touching the glass on a touch screen tablet/phone, is ….
3. To move through/down text boxes on an online form by the keyboard, you ….
4. A more common way to say 'press' a button on a mouse, is ….
5. When you select/click on an image or photo and then physically move it on the screen, you ….
6. When you stop holding down a key or mouse button, you ….
7. A different way to say 'click' or 'press' on a touch screen device (e.g. iPad), is….
8. A verb that means to move up or down a web page or document, is ….
9. After moving/dragging a photo on the screen, to put or place it in its new position, you ….
10. Another way to say 'enter' or 'write' words or numbers with a computer, is ….
11. To copy some of the text from a document, you first have to ….
12. To make the keys on a keyboard write letters, numbers etc..., you have to **….**

Task 3. *Read and translate the text carefully, mind the details*.

A Full-Stack Developer

A full-stack developer helps build and maintain both the front-end and the back-end of a website. Learn about full-stack developer skills, salary, and how you can become one.

A full-stack developer is a developer or engineer who can build both the front end and the back end of a website. The front end (the parts of a website a user sees and interacts with) and the back end (the behind-the-scenes data storage and processing) require different skill sets. Since full-stack developers are involved with all aspects of the development process, they must have expertise in both.

A full-stack developer can work in-house or at a computer development company that engineers websites, software, and other components for other businesses.

What does a full-stack developer do?

Full-stack developers design and create websites and applications for various platforms. A full-stack developer's job description might include the following:

- Develop and maintain web services and interfaces
- Contribute to front-end and back-end development processes
- Build new product features or APIs

- Perform tests, troubleshoot software, and fix bugs
- Collaborate with other departments on projects and sprints

The world of full-stack development is large, and many new and evolving technologies continually push the limits of what a full-stack developer can create. Staying on top of cutting-edge technology
and techniques in the full-stack development field is one of the many exciting aspects of working in this role.
According to 2022 Emerging Jobs Report, the industries with the most full-stack developer jobs are:

- Computer software
- Information technology and services
- Internet
- Financial services
- Higher education

Full-stack developers may be creative, graphically inclined, internet- and tech-savvy, and have excellent attention to detail. You'll want to learn the following skills to have a career in full-stack development:

Front-end development is the process of creating the interface of a website. It entails coding details like drop-down menus, fonts, colors, and page layouts. Full-stack developers should also know how to work with front-end technologies like HTML, CSS, and scripting languages such as JavaScript to make websites and applications visually viable and appealing. If you want to transition into full-stack development from back-end development, you might consider earning a Professional Certificate in front-end development from some industry leaders.

Back-end development skills entail using back-end programming languages like Python, PHP, Ruby on Rails, and CakePHP and understanding how algorithms and business logic work.
Web design includes using software such as Photoshop to create and design graphics and themes. It'll be helpful to familiarize yourself with basic UI (user interface) design principles to help you create navigational elements, backgrounds, and audio and video elements.

- Database management skills are required for full-stack developers, though it is part of the skills needed for back-end web development. A full-stack developer should be able to design, understand, and manipulate database queries and web storage.

As a full-stack developer, you may need to know your way around some of the following programming languages and tools:

- Angular JS
- Apache HTTP Server

- AWS
- CSS
- Ember.js
- JavaScript
- jQuery
- Laravel
- Microsoft SQL Server
- MySQL
- Nginx
- ils
- Vue.jsNode.js
- PHP
- Polymer
- React
- Ruby on Ra

A career in full-stack development combines creativity with analysis. As a full-stack developer, you'll have plenty of opportunities to learn and implement innovative principles in your work.

The way to become a full-stack developer

Consider earning a degree.

72% of software developers hold a bachelor's degree, although it's not a strict requirement. Full-stack developers typically study computer science, computer engineering, or a related field. A degree can hone the technical and workplace skills necessary to be an effective full-stack engineer.

Research entry-level roles.

There are various levels of full-stack development jobs. Search for junior or entry-level positions on job sites to understand what skills employers are looking for in applicants.

Develop your coding skills.

To be an effective full-stack developer, you should acquire and continue upgrading your knowledge of applicable programming language skills. Consider taking courses in relevant languages like Python, HTML, CSS, and JavaScript.

It can be challenging to showcase your skill set on a resume without hands-on experience. A portfolio shows potential employers what you're capable of by highlighting your best work. Gather projects you've completed through coursework or previous jobs. Include screenshots, and describe the technologies you used and your role in each.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the duties of a full-stack developer?
2. What education is necessary to become a professional full-stack developer?
3. What are the main ideas how to develop your coding skills?
4. Are there any additional skills required?
5. Is this job highly paid in your country?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. I have to install a new _____ of the anti-virus software.
 - release
 - version
 - layout

2. One of your cables was _____ . (= not connected)
 - clean
 - disengaged
 - unplugged

3. Your computer is _____ with a virus.
 - sick
 - infected
 - infiltrated

4. _____ can gather data from a user's system without the user knowing it.
 - Spyware
 - Software
 - Shareware

5. It is _____ to download these programs. (= You are not allowed to download these programs.)
 - illegal
 - illogical
 - legal

6. If you have any problems _____ (= setting up, customizing) the operating system, please let me know.
 - confiscating
 - commending
 - configuring

7. That program won't be able to open files with that _____.

- extension
- expansion
- extraction

8. Please _____ (= restart) your computer.
- reboot
- re-initiate
- rework

9. I've _____ the problem. (= I have found the source of the problem.)
- named
- identified
- inspected

10. It's not a major _____. = It's not a big problem.

LESSON 16

AN SQL DEVELOPER

Task 1. *Read the following conversation with the vocabulary to describe computer problems, try to guess the meaning of the words/phrases* ***in*** *bold. Make up your own sentences using these words/phrases* ***in*** *bold. Copy out these words, make up sentences using them.*

John: 'I know that it sounds stupid, but how is it possible that I can open the same word document on any of the **workstations** in the office. It doesn't matter which computer I'm on here, I can still open it.'

Paul: 'That's because all the computers or workstations in the office are connected to each other in a network. For our office, this network is called a LAN which is an abbreviation of '**Local Area Network'.'**

John: 'So every computer I use in the office can access or open any file or document on my computer?'

Paul: 'No, they can't. You can only open files and documents from any **computer/workstation** you use here, when the file or document is saved on a **server** and not on your computer. A server is basically a powerful computer on the

network which is dedicated to doing one thing, like **storing files**, or **connecting to the internet** or **running an application** etc... All the computers or workstations that people use at their desks can connect to these servers. Any application or file which people want to be shared or used by multiple computers are stored or put on to a server.

If you don't want **to share** a file with anybody, you can **save** or **store** it to t**he** local drive of your computer or laptop. A local drive is the **hard drive** on your computer. **Keeping a file** on only your computer's local drive means that you can't open the file from another computer and if the computer breaks, **the file is lost.** So it's better to save it to your own personal folders on a network drive. This is like a local personal drive for each user of a network, but all files are stored on **a file server**, a server dedicated to saving/storing files.

In addition, they are all backed up regularly. So even if the file server breaks down, there will always be a copy of all the files or documents stored on a different file server.'

John: 'So how does my computer **access** and open the word document on the file server?'

Paul: 'Well, your computer is connected to the LAN or office's computer network by **an** Ethernet cable at the back of the computer. The Ethernet cable is used to send and receive all the data from the computer to the server, other computers, the internet etc...'

John: 'Like emails or web pages?'

Paul: 'Yes, when you open a document on a server, the Ethernet cable **sends the request** to the file server and the file server sends **the data** in the file to your computer through the Ethernet cable to your computer. This data comes to your computer in what is called packets. For example, when a file server sends a word document that is on a network drive to your computer, the document is not sent all together, but is **divided into** small parts which are then sent one by one. When these small parts or packets **reach your computer** they **are reassembled** or **joined back together** and make the document. Data is sent on computer network in packets to make the network run quicker.'

John: 'It sounds complicated. But how does the file server know where to send the document or any type of data?'

Paul: 'Well, every computer, server, printer etc... has its own unique address. This is called an IP address**.** So, that's how a file server knows where to send a word document.'

John: 'So, there's a direct Ethernet cable from all the computers on the LAN network in the office to the file server?'

Paul: ‘No. In most offices, schools etc..., there are too many computers or servers to connect an Ethernet cable directly between each one. In our office there are 213 workstations/computers and 13 servers. It would be impossible for each computer to have 225 different Ethernet cable. Each computer or server only has one Ethernet cable. Those cables **connect** directly to a device called **a switch.** A switch is an **electronic box** that is used to direct the **data traffic** on the network to the correct IP address. All data is sent from a computer or server to it first. It's like a postman, when it receives the data (like an email, file, update) it reads the IP address of where it wants to go to (which is contained in the data) and sends it to the computer, server, printer on the network with that IP address.'

John: ‘Makes sense. But what happens if I want to send an email to somebody outside the company?'

Paul: ‘Well, the email is divided into packets and these packets are sent from your computer through the Ethernet cable to the switch. When the switch reads the IP address in the packets of data and knows that it's not for a computer or server on the LAN network, it sends the packets to **the** router on the LAN network. **A router** is another piece of **hardware** or device on the network that is used to send or receive data traffic from **a LAN network** (like in our office) to or from computers or servers which are outside the LAN network (like the internet, other companies or other offices).'

John: ‘So if I open a web page from the internet on my computer here, the data of the web page comes to my computer from the internet through the router, then the switch, then the Ethernet cable and finally to my computer?'

Paul: ‘Basically, yes. The router is the first place on the LAN network that **receives data** from outside of the LAN network. The router often has **a** firewall on it to make sure that any data it receives doesn't contain **a virus** or **words** or **material** which have been **banned or prohibited** by the company. Some companies ban their staff from accessing some websites and it's this **software** or program on the router that stops the web page.'

John: ‘Thanks Peter for explaining it.

Task 2. *Do the quiz to check the meaning of the words* ***in bold*** *used in the text. Fill in the blanks with one of these words/phrases* ***in bold****.*

1. Computers, mobile phone, servers, cables and switches are all types of …
2. When a copy of all the data and files of a computer is saved/stored on a different computer, it is ….
3. A powerful computer that is used on a computer network to store/save other computers' data and files, is called a …

4. A device/machine on a computer network that is used to move data between the different computers and servers, is a ….
5. A type of computer network that is normally used in an office or school, is called a ….
6. A cable that is used to transport data from one computer to another on a computer network, is called a …
7. Computer applications and programs are both types of ….
8. A 'hard drive' or place on a computer where applications or files are stored/saved, is also called a ….
9. The 'small parts' which an email is divided into to be transported on the network, are called …
10. When a person's files and applications are stored on the computer network and not on their local drive/computer, they are on a ….
11. The name of the software that stops viruses from entering into a computer network, is called a …
12. The 'computers' on computer network are often called ….
13. A device/machine where all the data entering and leaving a computer network goes through, is called a ….
14. The unique name/address that every computer in the world has, is called an …...

Task 3. *Read and translate the text carefully, mind the details.*

An SQL Developer

An SQL Developer is a hybrid database engineer and software developer who uses structured query language (SQL) to manipulate data, implement database-driven solutions, and build applications. SQL developers design relational databases and write code that interacts with stored data to complete functional requirements for a business. In today's digital information age, the quality and accessibility of data are more important than ever. As a result, SQL developers are in high demand across a wide range of industries, from health care to retail to finance.

What is an SQL developer?

An SQL developer is a database professional who often works alongside business analysts, database administrators, and other IT professionals. SQL developers help companies by creating and maintaining databases to control and manipulate their data.

The role of an SQL developer is to develop and manage SQL databases by planning, developing, and maintaining the databases. SQL developers use structured query language (SQL) to create and modify database tables using CRUD SQL commands. CRUD is an acronym for create, read, update, delete and refers to the four operations developers perform on database tables to manipulate the data.

As an SQL developer, you'll optimize database performance, create complex functions and stored procedures, analyze queries, develop security protocols, and resolve problems. They may design database architecture, write complex queries for applications and business intelligence reporting, or create dashboards.

Some queries and application functionality can be simple, such as a command to pull up all records related to a specific customer in an e-commerce database. Code can also be complex, involving multiple tables linked via a web of interconnected relationships, such in supply chain enterprise resource planning (ERP).

SQL developers' code allows users to interact with the information stored in databases, access metrics that show key business insights and provide decision support to the organization.

Skills needed to be an SQL developer

SQL developers must possess a combination of workplace and technical skills. These skills are necessary to thrive in an SQL developer role.

Proficiency in SQL

The first, and most apparent SQL developer competency, is proficiency in SQL (Structured Query Language). SQL is the programming language used to interface with databases.

Database management

Besides knowing the language, SQL developers need to be familiar with one of the major database management systems. These include MySQL, Microsoft SQL Server, and PostgreSQL.

MySQL

MySQL is currently the most popular open-source database management system. Michael Widenius, who cofounded MySQL AB, (which is now part of Oracle), with David Axmark in 1995, developed MySQL. It runs on multiple platforms—including Windows and Linux— and can support small and large databases.

PostgreSQL

PostgreSQL is another open-source relational database management system available on all major platforms (and some minor ones) and is supported in various cloud computing environments.

Microsoft SQL Server

Microsoft SQL Server is a popular relational database management system developed by Microsoft Inc., which runs on Windows servers. Like MySQL, SQL Server has a variety of versions, each supporting different features and scales of data. Microsoft also offers Azure SQL Database as a cloud-based service.

SQL Server is particularly popular in corporate environments. Job advertisements frequently list SSIS, SSRS, or SSAS SQL Server experience as essential criteria for application.

- SSIS (SQL Server Integration Services): Microsoft's tool for ETL processes, which is loading data from one database to another
- SSRS (SQL Server Reporting Services): Microsoft's reporting tool for SQL Server databases, which is useful for creating reports
- SSAS (SQL Server Analysis Services): Microsoft's tool for building OLAP cubes, which are useful for business intelligence applications

You don't need to be an expert in all these areas before becoming an SQL developer, but it helps to have a good grasp of at least a few of these tools and resources.

Integrating databases with business intelligence software

Business intelligence software is the umbrella term for applications that help companies analyze data. SQL developers often help connect databases with business intelligence software packages, like Power BI and Tableau.

It might be an SQL developer's responsibility to modify the database schema to ensure that external applications can access data or even to build a new database from scratch to meet the needs of a business case.

Excel, including pivot tables

If you're working with data in Excel and want to summarize it using pivot tables, you'll need to know how to write SQL code. Pivot tables extract and arrange data into neat categories and subcategories for quick analysis. You can also add filters, charts, and other visualizations on top of this data–which means you'll need to learn how to write queries to use them effectively.

Database design and management

Before writing programs, SQL developers must design a database. They are usually responsible for cataloging and organizing data into tables, specifying data types, primary and foreign keys, and other constraints. They may also develop processes to import data from external sources and migrate databases when moving to new technology, such as onto cloud database systems.

Experience in programming languages

SQL developers should have strong programming fundamentals, including experience with one or more programming languages such as Java. .NET, C++, Python, or Ruby on Rails. Developers should also know web application development languages and tools to design front-end user interfaces (e.g., HTML, PHP).

Additional helpful technical knowledge and skills include:

- Experience with NoSQL
- Knowledge of big data analytics
- Strong data management skills

- Good understanding of indexing, querying, and normalization
- Good understanding of relational database management system
- Good understanding of database integrity and security

Workplace skills
As an SQL developer, you'll need to have excellent interpersonal skills. SQL developers should be able to communicate with colleagues in IT functions and subject matter experts. They also need to be able to discuss functional business requirements with professionals who are not as well-versed in technology. They may collaborate with a diverse group of project professionals during day-to-day work. This could be in person or on a remote basis.
Job titles similar to SQL developer

Here are some common job titles you might see while searching for roles as an SQL developer:

- SQL Server Developer:
- Oracle Database Administrator (DBA)
- Oracle Developer
- Oracle PL/SQL Developer
- DBA Developer

The way to become an SQL developer
To become an SQL developer, you'll need the required education, experience, and certifications.

Education
As with many careers, a strong educational background can help you become an SQL developer. While a high school diploma may be sufficient for some positions, many employers prefer candidates who have a bachelor's degree in computer science, data analytics, data management, mathematics, engineering, statistics, or another related field.

Master's degrees in these fields are also useful for SQL developers. These programs build on undergraduate courses and students learn advanced programming techniques that develop their skills as SQL developers. Master's degrees for SQL developers are typically focused on computer science, data analytics, and information technology.

Gain experience
Employers often state that their minimum requirement for SQL developer positions is one to two years of experience with SQL and relational databases.
To gain experience, consider freelancing, junior roles, or even volunteer positions in a related field working on projects using SQL in an actual production environment. Employers want to see real-life experience from a professional work environment.

Certifications

You can enhance your progress in your SQL development career by earning Professional Certificates. These certifications demonstrate commitment, proficiency, and mastery of the subject matter, which can help you stand out from the crowd when applying for jobs.

Popular certifications for SQL developers include:

- Microsoft Certified Systems Engineer: Data Management and Analytics
- Oracle PL/SQL Developer Certified Associate
- Microsoft Certified Professional Developer (MCPD)
- MySQL 5.7 Database Administrator Certification
- IBM Certified Database Associate
- Azure Data Fundamentals
- Oracle Database SQL Certified Associate Certification
- EDB PostgreSQL 12 Associate Certification

Typical SQL developer career roles

There are quite a number of senior roles up the ladder on SQL developer career paths. The following are some common roles and their estimated annual salaries, according to Glassdoor:

- Big Data Consultant
- Information Technology Manager
- Information Technology Operations Manager
- Senior Software Engineer
- Director Of Software Development
- Informatica Consultant
- Project Manager
- Development Manager
- Senior Development Manager
- Senior Programmer Analyst
- Manager Applications Development
- Application Development Director

Task 4. *Answer the questions to the text in Task 3.*

1. What does a SQL Developer do?
2. Does it include different It directions?
3. Name necessary additional technical knowledge and skills for this position.
4. Is this job highly paid in your country?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. A dedicated server is one that you don't share with anyone else. It can be used for both web hosting and _____ hosting.
- application
- appliance
- applied

2. Would you like your application to _____ on a dedicated server, or a shared one?
- resolve
- reside
- result

3. A dedicated server has _____ (= many) advantages over a shared server.
- numbered
- numeral
- numerous

4. I would like to _____ my site from a shared server to a dedicated one.
- transfer
- transform
- transplant

5. These days, the cost of dedicated hosting has _____ considerably.
- lowered
- downed
- dropped

6. One of the pluses of this hosting plan is that it allows you to _____ (= change) the server settings.
- impersonate
- customize
- personify

7. This plan has no _____ limitations. You can download and upload as much data as you like.
- bandwidth
- information
- band

8. These days, even small business can _____ dedicated hosting.

- apart
- afford
- abort

9. Let's discuss some of the _____ of this hosting plan.
- goodness
- benefits
- beneficiaries

10. I think I'll _____ (= choose) the dedicated hosting plan.
- get with
- get by
- go with

LESSON 17

A SOFTWARE DEVELOPER

Task 1. *Read the following conversation about computer code sign & symbol names. The names of the signs and symbols are* ***in bold****.*

If you work in any type of Information Technology job you will have to understand how to write or read some type of computer code. In computer code, a lot of different signs and symbols are used. For example, ‘? ' or ‘. ' . Not knowing these names can be a problem if you are speaking to somebody about computer code.

John: «Do you know what one of the biggest problems is with computer code?"

Paul: «No, what?"

John: «I can never remember the names in English of some of the signs or symbols that are used in computer code. It's not a problem when writing the symbol, but you look stupid when you have to write or type the symbol when talking to someone, because you don't know its name. For example, what do you call this symbol ' **-** '? Is it called a dash?"

Paul: «Yes, the ' **-** ' is commonly called a **dash** in computer code, but it is also called a hyphen when writing in both English and in computer code. And you call this symbol ' **_** ', an **underscore**."

John: «I knew that. What's the name for the little star symbol?"

Paul: «Do you mean ' ***** ' this?"

John: «Yes."

Paul: «The ' ***** ' symbol is called an **asterisk**."

John: «And the ' **@** ' symbol which you use in email addresses?"

Paul: «The ' **@** ' symbol is called an **at sign**."

John: «Another symbol I have seen, is this ' **/** '."

Paul: «The ' **/** ' symbol is called **forward slash**, because its top part is leaning forward."

John: «So I suppose the ' \ ' symbol is called **backslash** because the top part is leaning back?"

Paul: «That's right. It's called backslash."

John: «And what do you call this symbol ' **#** '?"

Paul: «It has many names, it's often called the pound sign in America, but everywhere else, ' **#** ' is called **hash**."

John: «And the ' **(**' and '**)** ' symbols?"

Paul: «They are called **parentheses**, although they are sometimes called brackets (but not in America). The ' **(**' symbol is normally called open parenthesis and the '**)** ' symbol, close parenthesis.'

John: 'I am confused. I thought that the brackets symbols were ' **[** ' and '**]** '?"

Paul: «They are type of brackets, and although they are sometimes called brackets in America, the ' **[** ' and '] ' symbols are normally called **square brackets**. There are another two types of brackets that are used. ' < ' and ' > ' are called **angle brackets** and ' **{**'and ' **}** ' are normally called **curly brackets**. With all types of brackets, the first bracket is called 'open' and the second bracket is called 'close'. So, for example, ' < ' is called 'open angle bracket' and '] ' is called 'close square bracket'. Does that make sense?"

John:"I think so."

Task 2. *Choose the sign/symbol from the question's selection box which you believe is the correct sign/symbol for the name.*

@ # ( ) { } [ ] \ / * - _ < >

1. The sign/symbol that is called a **Forward Slash**, is **….**
2. The signs/symbols that are called **Curly Brackets**, are …

3. The sign/symbol that is called an **Asterisk**, is …
4. The sign/symbol that is called a **Hash**, is ….
5. The signs/symbols that are called **Square Brackets**, are …
6. The sign/symbol that is called an **Underscore**, is …
7. The sign/symbol that is called a **Dash**, is …
8. The signs/symbols that are called **Parentheses**, are …
9. The sign/symbol that is called an **at Sign**, is …
10. The signs/symbols that are called **Angle Brackets**, are …
11. The sign/symbol that is called a **Backslash**, is ...

Task 3. *Read and translate the text carefully, mind the details.*

A Software Developer

There are many ways to become a software developer, from earning a degree or certification to self-directed learning. Learn more about how to become a software developer and how to take the next step.

If you've made the decision to pursue a career as a software developer, there are a number of paths you can take to achieve your goal. Teaching yourself, earning a certification, or enrolling in college to earn a degree are all steps you can take—either one or any combination of the three can help you get the job done.

What is a software developer?
Software developers research, design, and develop software and applications using different programming languages. While creating these programs, they're also responsible for testing the software to make sure it works. After the project goes live, it's a software developer's job to fix any bugs, refactor old code, make updates, and more.

Recommended skills
The job of a software developer can look like many different things, so holding a few essential skills will help ensure your success in this career. As a software developer, your role may involve turning a client's idea into a working application. Other times you may be working with a team, having tickets assigned, or developing small pieces of code that fit into the larger application. No matter the project, the following skills can help you be successful as a software developer.

Sharpen your workplace skills.

- **Patience:** The process of developing software can be tedious and time-intensive. Developing, testing, and, finally, deploying the project can be an excellent test of patience. After completing the project, it may need updating or debugging. Patience will also come in handy when working under tight deadlines or with other developers and coworkers.

- **Clear and concise communication:** Having excellent communication skills will be a tremendous asset when working with colleagues and clients alike. Clear and effective communication with the rest of the development team will make for a much smoother project. Being able to communicate effectively and find out precisely what the customer needs their software to do is a necessary skill of an effective software developer.

- **Problem-solving:** It's not uncommon for issues to arise when developing software. Having excellent problem-solving skills can help you better handle issues efficiently, without significant disruptions to the project.

- **Adaptability:** Adaptability demonstrates the ability to handle changes that are typically found in software development. For software developers, it's essential to be versatile and ready to adapt as plans change and technology evolves.

Develop your technical skills and learn common tools.

- **Git and Github:** Git is free version tracking software for code and the industry standard. It allows developers to save snapshots of code (commits) as they work on a project and lets them roll back to an earlier version of the project. It enables developers to safely experiment with new features with a reduced risk of introducing bugs. GitHub is a code hosting platform that allows collaboration on projects from anywhere, sending code after making a comment. Being familiar with both tools is essential in working as a software developer.

- **Full-stack developer skills:** A full-stack developer is essentially a jack of all trades. As a full-stack developer, you can work with both the back end (server-side) and the front end (customer-facing side) of an application. For someone to be considered a full-stack developer, they would also need to have knowledge of UX/UI, databases, and sometimes graphic design. It also helps to be familiar with a few widely used languages like Python, Ruby, HTML, and JavaScript. Having these technical skills gives you the ability to create and fix pretty much any part of an application.

- **Specialized developer skills:** If full-stack doesn't sound appealing, there is also an option of specializing in one or two languages. The advantage of being specialized is that you have a deep understanding of the intricacies of their language or framework. Specialized developers are categorized as either front-end or back-end developers.

Degree programs to consider.

Many companies hiring a software developer may require a bachelor's degree for entry-level positions. Many different degree pathways can help you reach your goal of being a software developer. Here are a few of the most common degree choices:

Software engineering
With a degree in software engineering, you focus more on developing technical skills such as designing, building, and employing software. The courses required for this degree often overlap with those in a computer science degree.

Computer science
A computer science degree combines math, science, and engineering to study and develop everything from software to networks and computers. Many choose to pursue a degree in computer science with the goal of becoming a software engineer, but it also affords opportunities for many other careers in the field.

Information technology
Information technology majors study the development of networks, databases, computer systems, web applications, and more. These majors also study the hardware required for all those digital processes. A background in IT can help a hopeful developer gain the skills needed to become a software engineer.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the responsibilities of a software developer?
2. Are there any recommended skills for such specialists?
3. Why are communicative skills of great importance for a software developer?
4. What kind of degrees are necessary to become an in-demand specialist?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. Our business has _____ shared hosting. = Our business has become too big for shared hosting.
   - outlasted
   - outgrown
   - outplayed

2. VPS _____ for "virtual private server".
   - stays
   - stops
   - stands

3. Does this plan provide root level _____ (complete control over the server settings)?
   - accent
   - access

- accessories

4. VPS (virtual private server) hosting is a _____ between shared hosting and dedicated hosting.
- compromise
- comfort
- control

5. Tell me about some of the _____ of this plan (= what this plan offers).
- features
- facets
- factors

6. This plan offers free daily _____ (= backing up of data).
- backlogs
- back-rubs
- backups

7. A stripped-_____ server = A server that has only essential or minimal features
- down
- up
- away

8. We offer a 99.9% _____ guarantee (we guarantee that the server will be working 99.9% of the time).
- uptime
- downtime
- transfer time

9. In hosting terms, a server is sometimes colloquially referred to as a _____.
- carton
-box
- package

10. We have to run a test on this server's _____ speed.
- processed
- process
- processing

LESSON 18

BIG DATA ENGINEER

Task 1. *Read the following conversation how to use the computer system in the company. Try to guess what the meaning of the words/phrases* ***in bold*** *are. Make up your own sentences using these words/phrases* ***in bold.***

John: 'This is your first day here. You already know what you have to do with the project. But to do that, you need to have the information that we have on our computer network. So, I'll show how to use your network account on the computer, so you can do your work.'

Paul: 'Perfect.'

John: 'The IT department set up your network account last week, so it's ready to use. Here's your user name and password. The first thing that you need to do, is to log in to your network account on the computer. So can you type in the user name and password.'

Paul:'Ok, done that.'

John: 'You're logged in ok. After you've logged in, you will always go to this screen where there are icons of all the applications you have. For example, there are icons for Chrome, Word, email etc... You also have access to the Operations Department Database, which contains data on all the staff and equipment in the company. You don't have access to the Customer Database, but you won't need that to do your job. You also have access to the company's procedures folder**.** It's the icon at the top right. If you click on it, it will take you to a folder containing lots of Word documents about the different procedures we have in the company. If you click on the file called 'disaster procedures', you can read the procedures we have in place if there is a fire or explosion in one of our factories.'

Paul: 'Where should I save files like Word documents or Excel spreadsheets?'

John: 'It's your choice. You can save them to your hard drive on your computer. But you won't be able to access the files from another computer. So it's better to save it to a network drive. Your network account has a drive on the network to save files to. It's the L: drive. If you save files there, you can access them from any computer on the company's network. Also, there's a shared folder on the network for our team. It's called 'Operations Shared Folder' and it's this icon on the screen. You should save any file or document here which other people in the team need to have access to. Some of the files here are password protected. So you can't open them without a password. If you need

to access a file that is password protected, tell me and I'll give you the password. Do you have any questions?'

Paul: 'Yes, I do. Because I'll be visiting lots of factories to do my job, I'm not sure having a desktop **computer is the best idea. I can't carry it with me, it's too heavy to move. Would it be possible to have laptop** instead? They are designed so you can travel with them.'

John: 'It was stupid of me not to think about that before. I'll request a laptop for you from the IT department. It'll take 5 days to come, so you'll have to work on the desktop for now. I'll also request a docking station for the laptop, so you can use a normal keyboard and a normal screen when you're using the laptop here at your desk. I forgot to mention that this computer is connected to the printer in front of us. So when you print any document, it will go there.'

Task 2. *Do the quiz to check the meaning of the words* ***in bold*** *used in the text above. Fill in the blanks with one of these words/phrases* ***in bold.***

1. A type of computer that is designed so it can be easily moved, is called a ……
2. A 'document' on a computer like 'report.doc', is also called a ……...
3. A group of computers connected together, is called a ……
4. A file/document that needs a password to be opened, is ….
5. The name of the place where a group of files/documents are stored/saved on a computer, is a ….
6. A machine that makes paper copies of files/documents, is called a ….
7. To use a company's computer system, you need to have a …
8. The name of the part of a computer where all programs, folders and files are stored, is the …
9. A two-word verb that means 'to create' and is used with network accounts, is ….
10. A formal way to say 'to ask for' something new, is ….
11. Computer 'programs' like Word or Excel, are commonly called …
12. A piece of equipment that you enter a laptop into, so you can use the laptop with a normal keyboard and screen, is a ….
13. A word that means 'the ability to open or read' a file or document, is …
14. A computer that is designed to only be used on a desk, is called a ….
15. To use your network account, you first have to …
16. When a person's files and applications are stored on the computer network and not on their local drive/computer, they are on a ….

Task 3. *Read and translate the text carefully, mind the details.*

Big Data engineer

Big data engineers develop, test, and maintain Big Data solutions for a company. Their job is to gather large amounts of data from multiple sources and ensure that downstream users can access the data quickly and efficiently. Essentially, big data engineers ensure the company's data pipelines are scalable, secure, and able to serve multiple users.

A talented Big Data Engineer will be required to design and implement Big Data tools and frameworks, implement ELT processes, collaborate with development teams, build cloud platforms, and maintain the production system.

To succeed working as a Big Data Engineer you should have in-depth knowledge of Hadoop technologies, excellent project management skills, and high-level problem-solving skills. Suitable Big Data Engineers understand the needs of the company and institutes scalable data solutions for its current and future needs.

- In-depth knowledge of Hadoop, Spark, and similar frameworks.
- Knowledge of scripting languages including Java, C++, Linux, Ruby, PHP, Python, and R.
- Knowledge of NoSQL and RDBMS databases including Redis and MongoDB.
- Familiar with Mesos, AWS, and Docker tools.
- Excellent project management skills.
- Good communication skills.
- Ability to solve complex networking, data, and software issues.
- Bachelor's degree in Computer Engineering or Computer Science.
- Previous experience as a Big Data Engineer.

Big Data Engineer Requirements

- Meet with managers to determine the company's Big Data needs.
- Develop Hadoop systems.
- Load disparate data sets and conducting pre-processing services using Hive or Pig.
- Finalize the scope of the system and delivering Big Data solutions.
- Manage the communications between the internal system and the survey vender.
- Collaborate with the software research and development teams.
- Build cloud platforms for the development of company applications.
- Maintain production systems.
- Train staff on data resource management.
- In-depth knowledge of Hadoop, Spark, and similar frameworks.
- Knowledge of scripting languages including Java, C++, Linux, Ruby, PHP, Python, and R.
- Knowledge of NoSQL and RDBMS databases including Redis and MongoDB.
- Familiar with Mesos, AWS, and Docker tools.
- Excellent project management skills.
- Good communication skills.
- Ability to solve complex networking, data, and software issues.

- Bachelor’s degree in Computer Engineering or Computer Science.
- Previous experience as a Big Data Engineer.

Task 4. *Answer the questions to the text in Task 3.*

1. What are the main duties of a big data engineer?
2. What scripting languages are necessary to obtain?
3. Why are excellent project management skills to be advantages?
4. Is this job in high demand in your country?

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. This hosting plan is _____.
 - 100% reliable
 - 100% reliable
 - reliable in 100%

2. The server _____. (= stopped working) - We have to restart it.
 - smashed
 - clashed
 - crashed

3. What ASP _____ does this server have installed on it?
 - companies
 - components
 - composers

4. I'm sorry, we don't _____ (= offer) PHP hosting.
 - provide
 - provoke
 - program

5. A hosting company's servers are most often _____ (= found) in a "data center".
 - located
 - placated
 - packaged

6. These data centers have to be set up properly so as to _____ optimal performance.

- make sure
- make out
- ensure

7. A VPS (virtual private server) is a single server that is _____ (= divided) into multiple dedicated servers.
- partitioned
- parted
- bounded

8. Let's discuss some of the _____ of an open-source operating system.
- advantages
- advantaged
- advantage

9. We can offer the same service for a _____ of the cost (= for much less money).
- faction
- fraction
- friction

10. A dedicated server is sometimes referred to as a _____ server.
- primal
- privatized
- private

LESSON 19

BIOINFORMATICS SPECIALIST

Task 1. *Read the following conversation about problems with a laptop. Try to guess what the meaning of the words/phrases* ***in bold*** *are. Make up your own sentences using these words/phrases* ***in bold.***

John: 'What's happening Peter, you look frustrated?'

Paul: 'My laptop won't **turn on**. It was working before. I don't know what's wrong!'

John: 'Is it **plugged in**?'

Paul:'Yeah, I have connected it to the mains electricity, but that shouldn't be important because the laptop's **battery** still has charge or power.'

John: 'Are you sure that the **socket** in the wall has power? Try to plug it into another socket.'

Paul: 'I've tried that already and the socket has power. I thought that there may be a problem with the power **cable**, but it's working fine with the other laptop here.'

John: 'I had a problem with my desktop computer last year where the **wires had come loose** in the power cable. So I had to replace the power cable. You can use my laptop to show it.'

Paul: 'Thanks Juan, but I only saved the presentation to my **hard drive**. So I can't show the presentation on your laptop.'

John: 'Can you remember when I had that problem with my laptop in July. When suddenly the screen **froze** and the laptop wouldn't respond when I **pressed** any of the **keys** on the keyboard or when I moved my finger on the **touch pad**. Sometimes it recovered and I could continue to use the application, but other times it **crashed** and stopped working completely. So, I had to **reboot** the laptop. It was so frustrating, because I sometimes lost all of the work I'd been doing. Then the application **didn't load** at all, so I couldn't even use it then. The IT Engineer told me it was a software **fault** with the application. So she just **reinstalled** the application and it's been working fine.'

Paul: 'I'm happy for you, but I don't have any power to the laptop, so it's not a software fault. It seems like a hardware fault.'

Task 2. *Do the quiz to check the meaning of the words **in bold** used in the text above. Fill in the blanks with one of these words/phrases **in bold***

1. Another way to say 'touch' or 'push' a button or a key, is …
2. The name of the part of a computer where you save/store your applications and documents, is the ...
3. When talking about computers, people call an electrical, software or hardware 'problem' a …
4. Another way to say 'switch on' or 'start' a computer, is …
5. The part of a laptop where you move the cursor on the screen with a finger, is called the ….
6. A 'lead' or 'wire' which connects a computer to a printer or a power supply, is called a …
7. A different way to say 'restart' a computer, is …

8. A two-word verb that means to connect a 'cable' to a computer or to an electrical power supply, is …
9. When you can't move the cursor on the screen, the screen is …
10. A possible reason why a cable isn't working, is …
11. Another way to say that an application 'doesn't start', is …
12. The hole/holes where a cable is connected to, is called a …
13. The buttons on a keyboard that have letters or numbers on them, are called …

14. When an application/program on a computer is damaged/not working correctly, it normally has to be …
15. The name of the power supply for a laptop or a mobile phone, is called the …
16. When a computer or application fails or stops working, it ...

Task 3. *Read and translate the text carefully, mind the details.*

Bioinformatics Specialist

A Bioinformatics Specialist is responsible for the analysis and interpretation of large-scale biological data using various computational tools and techniques. They work with biologists and other researchers to understand complex biological phenomena, such as genetic mutations or protein interactions, by analyzing and interpreting genomic, proteomic and other types of data. The specialist may also develop and maintain databases, software and algorithms for efficient data analysis. They are experts in the use of programming languages, such as R and Python, and have a strong understanding of biology and genetics. In summary, a Bioinformatics Specialist plays a crucial role in increasing our understanding of biological processes and helping to improve human health and wellbeing.

Our Bioinformatics Specialist job description includes the Bioinformatics Specialist responsibilities, duties, skills, education, qualifications, and experience.

What does a Bioinformatics Specialist do?

A Bioinformatics Specialist is required to join a leading biotechnology company. The successful candidate will be responsible for designing, developing, implementing and maintaining bioinformatics solutions to support the company's research activities.
The Bioinformatics Specialist will be required to work in close collaboration with the research and development teams to develop and implement databases, pipelines and software to support the company's activities. Candidates will need to analyse existing data sets and develop novel bioinformatics approaches to support the company's research.

The successful candidate will need to have a good understanding of bioinformatics principles and techniques, as well as experience in developing software and databases. A qualification in bioinformatics or a related field is essential.

This is an exciting opportunity for a motivated individual with a keen interest in developing leading edge bioinformatics solutions.

The purpose of a Bioinformatics Specialist is to use computational and analytical methods to interpret biological data and develop new technologies, algorithms, and software to solve biological problems. They work closely with research teams to identify and analyze key trends and patterns in large datasets. They also develop strategies to interpret, present, and store large datasets, ensuring the accuracy and reliability of the data. Additionally, they develop and maintain databases and software, and provide technical and scientific support to other researchers.

A Bioinformatics Specialist is responsible for developing and maintaining computer systems and databases to store, analyze and interpret biological data. They use their knowledge of computer programming, statistics and mathematics to solve problems related to biology, genetics, medicine and other life sciences. They may also design and develop software to analyze biological data and create models for biological applications.

- Developing and implementing bioinformatics strategies and methods
- Developing, maintaining and supporting software
- Designing and developing databases and data pipelines
- Analyzing and interpreting biological data
- Creating and delivering reports and presentations
- Collaborating with scientists and other stakeholders

Bioinformatics Specialist Requirements
- A degree or equivalent qualification in bioinformatics or a related field
- Proven experience in bioinformatics
- Excellent knowledge of bioinformatics software and programming languages
- Good understanding of molecular biology and genetics
- Strong analytical and problem-solving skills
- Good communication skills and attention to detail

Bioinformatics Specialist Skills
- Proficiency in programming languages, such as Python and R
- Knowledge of bioinformatics tools and techniques
- Experience with data management and analysis
- Ability to interpret and present complex data
- Familiarity with databases and web-based resources
- Strong problem-solving and communication skills

- Excellent problem-solving skills

- Familiarity with laboratory techniques
- Strong analytical and communication skills
- Excellent organisational and time management skills
- Ability to work independently and as part of a team

Task 4. *Answer the questions to the text in Task 3.*

1. What are the special requirements for a bioinformatics specialist?
2. What kind of data can this specialist interpret?
3. What qualification is essential for this job?
4. Name main personal traits for this specialist.

Task 5. *Choose the right synonym (words) to make the two sentences have the same meaning.*

1. A good Digital Asset Management system can ensure that your content _____ (= is in compliance) with a variety of government (or internal) regulations.
- complies
- complicates
- completes

2. More and more government laws and regulations (such as the USA Patriot Act) require certain types of organizations to _____ and store information about people. This is one reason why content management software is becoming increasingly popular.
- collocate
- collect
- collate

3. Most ECM systems guarantee that your information will be stored _____.
- securely
- security
- secure

4. A lot of these processes are automated, since _____ (= non automated) processes require more labor and are more prone to error.
- menial
- manual
- maniacal

5. Will we have to _____ (= rearrange) our data infrastructure before importing it into the new ECM system?
- undo
- recognize
- rework

6. The goal of the software is to _____ (= markedly) improve your business operations.
- signify
- signal
- significantly

7. We need a system which will allow us to all _____ this information.
- share
- shared
- sharing

8. Peter has installed ECM systems at two major corporations. He can help us _____ and maintain an effective program.
- imply
- implement
- implicate

9. Every ECM system is able to _____(= successfully) manage various content types such as electronic documents, scans, web content, email, etc.
- effective
- affected
- effectively

10. We'll help you manage all types of documents with equal _____ (= ease).
- facility
- easy
- simplification

LESSON 20

USEFUL TIPS AND PHRASES USED BY IT SPECIALISTS

TASK 1. *Study the following Tips. Make up dialogues using these phrases and constructions.*

1. USE Present Simple tense to describe products
— It costs fifty dollars. (How much does it cost?)
— It monitors employee activity. (What does it monitor?)
— It is easy to use. (Is it easy to use?)
— It is available in three colours. (Is it available in other colours?)
— It comes with a two-year guarantee. (Does it come with a guarantee?)

2. USE Passive Voice for technical purposes, in instructions and manuals
— This device is manufactured in India. (Where is this device manufactured?)
— It is designed for competent users. (Who is it designed for?)
— It can be used for internal communication. (What can it be used for?)
— It is equipped with a signature recognition software. (What is it equipped with?)
— The cover is made of leather. (What is the cover made of?)

3. USE comparatives and Superlatives of adjectives
— The new version is more reliable than the old one. (Is the new version more reliable than the old one?)
— It's smaller than a laptop. (Is it smaller than a laptop?)
— It's not as expensive as a PC. (Is it cheaper than a PC?)
— It's the cheapest product on the market.

4. USE Present Perfect tense when speaking about improving, mending, debugging something
— Have you tried removing the program?
— Have you checked your network settings?
— Have you disabled the extensions?

5. USE appropriate Past Tenses asking about different actions in the past
— What were you doing when the error occurred?
— Did you initialize the drive?
— Did you verify software compatibility?

6. USE "Should" when you give some kind of advice
— You should download a data recovery software.
— You should back up all the restored data.

7. USE "Why don't you…"
— Why don't you try using the default password?
— Why don't you run some tests to make sure everything is stable?

8. USE Imperative to give instructions and orders
— Burn the ISO to a blank DVD.

— Disable the internal GPU.
— Don’t attempt to write anything on the hard drive.
— Don’t click Yes to format the drive.

TASK 2. *Read the following phrases. Use these phrases in your own dialogues.*

PHRASES FOR TELEPHONE SPEAKING WITH COLLEAGUES AND CLIENTS

— This is Dmitry Ivanov speaking.
— I would like to speak to Mr. Smith. / Can I speak to Mr. Smith?
— I would like to leave a message for Ms. Smith. Can you ask her to call me back as soon as possible?
— I’ll make sure she gets the message.
— I’m sorry, I don’t understand / I can’t hear you very well.
— Could you say that again? Can you speak up a little?
— I’m calling to make an appointment with Mr. Smith.
— I’m calling about the problem you reported this morning.
— I’m calling about the computer you have ordered.
— I’m sorry, I’m in a meeting / I’m very busy at the moment.
— I’ll get back to you as soon as possible.
— Can I call you back this afternoon?

WRITING AN EMAIL

— Dear Mr./Ms. Barns,
— Dear Dr Smith,
— Dear Sir/Madam,
— I am writing to let you know that your payment is overdue.
— Thank you for your e-mail of 15 February regarding the sale of…
— I am sending you the brochure as an attachment.
— Please see the statement attached.
— I am afraid I cannot open the file you have sent me.
— Could you send it again in … format?
— I look forward to hearing from you.
— Yours faithfully, (when you start with Dear Sir/Madam,)
— Yours sincerely, (when you start with the name e.g. Dear Ms. Johns)

SMALL TALK with colleagues

— How are you? Did you have a good weekend?
— How is your wife/husband? How are the children?
— It’s so hot today, isn’t it? / It’s so cold today, isn’t it?

— Yes, very hot/cold for this time of the year. What are you doing at the weekend?

— Have you been working here long?
— Have you met the new accountant?
— Do you know any good restaurants near here?
— I just love the chocolate eclair they make in the canteen. Have you tried it? —

— My dog just didn't want me to come to work this morning. Do you have a dog? —
— Did you watch the match last night?
— Have you seen any good films lately? I'd like to take my wife to the cinema this weekend.

TASK 3. *Read the Tips carefully and mind the details. Try to give answers to these questions.*

GENERAL TIPS HOW TO GO THROUGH THE TECHNICAL INTERVIEW QUESTIONS AND LOOK LIKE A SUITABLE CANDIDATE

These examples of **Technical interview questions** can help you complete the interview successfully and get the desired position.

10 technical questions can be given to the candidates

1. What programming languages are you most familiar with?
2. Describe the troubleshooting process you'd follow for a crashing program.
3. How can you debug a program while it's being used?
4. What is your field of expertise and what would you like to learn more about?
5. Have you implemented significant improvements to an IT infrastructure? What were they, and how did you implement them?
6. What's the most effective way to gather user and system requirements?
7. Describe a time you had to explain technical details to a non-technical audience. How did you modify your presentation?
8. Where do you place most of your focus when reviewing somebody else's code?
9. What did you find most challenging about this assignment? What resources did you use to complete the assignment?
10. What did you learn from [X] project?

Here are 10 essential interview questions and sample answers for the best candidates.

1. What programming languages are you most familiar with?
This question assesses the candidate's technical skills and familiarity with programming languages.
Sample answer:
"I am most familiar with Python, Java, and C++. I have used Python for data analysis,

Java for building backend systems, and C++ for performance-critical applications."

2. Describe the troubleshooting process you'd follow for a crashing program.
This question evaluates the candidate's problem-solving skills and their approach to debugging.
Sample answer:
"First, I would check the error logs to identify the point of failure. Then, I'd isolate the issue by running tests and using debugging tools. Finally, I would fix the code and test it thoroughly before deployment."

3. How can you debug a program while it's being used?
This question gauges the candidate's ability to handle real-time issues without disrupting user experience.
Sample answer:
"I would use debugging tools that allow for real-time monitoring and set breakpoints in a development environment that mirrors the production system. This way, I can debug without affecting the users."

4. What is your field of expertise and what would you like to learn more about?
This question helps to understand the candidate's specialization and their willingness to learn.
Sample answer:
"My expertise is in cloud computing, but I'm interested in learning more about machine learning and its applications."

5. Have you implemented significant improvements to an IT infrastructure? What were they, and how did you implement them?
This question assesses the candidate's experience in making impactful changes in an IT environment.
Sample answer:
"Yes, I led a team that migrated our services to a cloud-based infrastructure, which improved scalability and reduced costs. We planned meticulously and executed it in phases to minimize downtime."

6. What's the most effective way to gather user and system requirements?
This question evaluates the candidate's approach to requirement gathering, a crucial step in project planning.
Sample answer:
"I usually start with stakeholder interviews to understand their needs and expectations. Then, I consult with the technical team to assess system capabilities. Finally, I document everything in a formal requirements specification."

7. Describe a time you had to explain technical details to a non-technical audience. How did you modify your presentation?
This question assesses the candidate's communication skills, particularly in explaining technical concepts to non-technical people.
Sample answer:
"I once had to explain the benefits of migrating to a cloud-based system to our board of directors. I used simple language and analogies to make it relatable and avoided technical jargon."

8. Where do you place most of your focus when reviewing somebody else's code?
This question gauges the candidate's code review skills and what they prioritize during the process.
Sample answer:
"I focus on code readability, efficiency, and whether it adheres to best practices. I also look for any security vulnerabilities."

9. What did you find most challenging about this assignment? What resources did you use to complete the assignment?
This question assesses the candidate's problem-solving skills and resourcefulness.
Sample answer:
"The most challenging part was optimizing the algorithm for performance. I consulted online forums and used profiling tools to identify bottlenecks."

10. What did you learn from [X] project?
This question helps to understand what the candidate takes away from their experiences.
Sample answer: "From that project, I learned the importance of thorough requirement gathering. We faced challenges that could have been avoided with better initial planning."

What does a good technical candidate look like?
A good technical candidate not only has strong technical skills but also possesses problem-solving abilities, excellent communication skills, and a willingness to adapt and learn. They should be able to work well in a team and adapt to the company culture.
Technical interview questions based on level

- What programming languages are you most familiar with?
- Describe the troubleshooting process you'd follow for a crashing program.
- How can you debug a program while it's being used?
- What is your field of expertise and what would you like to learn more about?

- Have you implemented significant improvements to an IT infrastructure? What were they, and how did you implement them?
- What's the most effective way to gather user and system requirements?

- Describe a time you had to explain technical details to a non-technical audience. How did you modify your presentation?
- Where do you place most of your focus when reviewing somebody else's code?

- What would you have done differently if you had more time?
- What would you do differently if you were under a strict deadline and you couldn't meet the project scope? Which features would you prioritize?
- What did you find most challenging about this assignment? What resources did you use to complete the assignment?

- In which of your previous positions/past projects did you use [X] software?
- Tell me about [X] project. Who did you work with and what was your specific contribution? Describe the timeframe and how you worked within it.
- What did you learn from [X] project?

- **Unclear answers.** Candidates who struggle to explain their resume might have had little or no participation in the projects they listed. Candidates should clearly identify their exact roles and contributions.
- **Lack of energy.** Developers are passionate about their profession, even if you can't tell at first sight. Be ready to tell about fun side projects, or about your favorite tools.
- **Inflexibility.** Candidates who are willing to adjust to a company's way of working are more likely to collaborate with the team. Candidates should show a desire to learn and be couraged by getting used to new systems.
- **Bad team players.** Developers might usually work in front of a computer screen, but they need to communicate with various people and teams on a daily basis. Poor interpersonal skills and signs of rudeness or arrogance indicate lack of team spirit.
- **Order-takers.** Candidates who fail to see the "big picture" are not able to understand your company's needs and objectives. Candidates should be eager to be engaged in the full software development life cycle. These people are proactive and suggest solutions – they don't simply wait for instructions.

Task 4. *Image that you apply for some kind of It jobs. Choose a partner and make up a dialogue using the above mentioned questions and answers taking into account general tips.*

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