Task 1:

AI application examples without use of data:

Game applications like xo and chess games

Task 2:

Companies that work with artificial intelligence

1. Alibaba

Chinese company Alibaba is the world's largest e-commerce platform that sells more than Amazon and eBay combined. Artificial intelligence (AI) is integral in Alibaba's daily operations and is used to predict what customers might want to buy. With natural language processing, the company automatically generates product descriptions for the site. Another way Alibaba uses artificial intelligence is in its City Brain project to create smart cities. The project uses AI algorithms to help reduce traffic jams by monitoring every vehicle in the city. Additionally, Alibaba, through its cloud computing division called Alibaba Cloud, is helping farmers monitor crops to improve yield and cuts costs with artificial intelligence.

2. Alphabet – Google

Alphabet is Google's parent company. Waymo, the company's self-driving technology division, began as a project at Google. Today, Waymo wants to bring self-driving technology to the world to not only to move people around, but to reduce the number of crashes. Its autonomous vehicles are currently shuttling riders around California in self-driving taxis. Right now, the company can't charge a fare and a human driver still sits behind the wheel during the pilot programme. Google signalled its commitment to deep learning when it acquired DeepMind. Not only did the system learn how to play 49 different Atari games, the AlphaGo programme was the first to beat a professional player at the game of Go. Another AI innovation from Google is Google Duplex. Using natural language processing, an AI voice interface can make phone calls and schedule appointments on your behalf. Learn even more about how Google is incorporating artificial intelligence and machine learning into operations.

3. Amazon

Not only is Amazon in the artificial intelligence game with its digital voice assistant, Alexa, but artificial intelligence is also part of many aspects of its business. Another innovative way Amazon uses artificial intelligence is to ship things to you before you even think about buying it. They collect a lot of data about each person's buying habits and have such confidence in how the data they collect helps them recommend items to its customers and now predict what they need even before they need it by using predictive analytics. In a time when many brick-and-mortar stores are struggling to figure out how to stay relevant, America's largest e-tailer offers a new convenience store concept called Amazon Go. Unlike other stores, there is no checkout required.

The stores have artificial intelligence technology that tracks what items you pick up and then automatically charges you for those items through the Amazon Go app on your phone. Since there is no checkout, you bring your own bags to fill up with items, and there are cameras watching your every move to identify every item you put in your bag to ultimately charge you for it.

4. Apple

Apple, one of the world's largest technology companies, selling consumer electronics such as iPhones and Apple Watches, as well as computer software and online services. Apple uses artificial intelligence and machine learning in products like the iPhone, where it enables the FaceID feature, or in products like the AirPods, Apple Watch, or HomePod smart speakers, where it enables the smart assistant Siri. Apple is also growing its service offering and is using AI to recommend songs on Apple Music, help you find your photo in the iCloud, or navigate to your next meeting using Maps.

5. Baidu

The Chinese equivalent of Google, Baidu, uses artificial intelligence in many ways. They have a tool called Deep Voice that uses artificial intelligence and deep learning that only needs 3.7 seconds of audio to clone a voice. They use this same technology to create a tool that reads books to you in the author's voice—all automated with no recording studio necessary.

6. Facebook

One of the primary ways Facebook uses artificial intelligence and deep learning is to add structure to its unstructured data. They use DeepText, a text understanding engine, to automatically understand and interpret the content and emotional sentiment of the thousands of posts (in multiple languages) that its users publish every second. With DeepFace, the social media giant can automatically identify you in a photo that is shared on their platform. In fact, this technology is so good, it's better at facial recognition than humans. The company also uses artificial intelligence to automatically catch and remove images that are posted on its site as revenge porn.

7. IBM

IBM has been at the forefront of artificial intelligence for years. It's been more than 20 years since IBM's Deep Blue computer became the first to conquer a human world chess champion. The company followed up that feat with other man vs. machine competitions, including its Watson computer winning the game show Jeopardy. The latest artificial intelligence accomplishment for IBM is Project Debater. This AI is a cognitive computing engine that competed against two professional debaters and formulated human-like arguments.

8. JD.com

JD.com is the Chinese version of Amazon. Its founder Richard Liu expects and is driving toward having his company be 100% automated in the future. Right now, its warehouse is already fully automated, and they have been making drone deliveries of packages for the last for years. JD.com is driving

business with artificial intelligence revolution, big data, and robotics while building the retail infrastructure for the 4th industrial revolution.

9. Microsoft

Artificial intelligence is a term that appears on Microsoft's vision statement, which illustrates the company's focus on having smart machines central to everything they do. They are incorporating intelligent capabilities to all its products and services, including Cortana, Skype, Bing, and Office 365, and are one of the world's biggest AI as a Service (AIaaS) vendors.

10. Tencent

Chinese social media company Tencent has incorporated artificial intelligence into its operations in its quest to become "the most respected internet enterprise," Tencent relies on artificial intelligence. It has 1 billion users on its app WeChat, but has extended its reach to gaming, digital assistants, mobile payments, cloud storage, live streaming, sports, education, movies, and even self-driving cars. One of the company's slogans is "AI in all." Tencent acquires huge amounts of information and insights about its customers that it processes and leverages to the company's advantage.

Task 3:

Compiled programming languages

- Ada
- ALGOL
    - ALGOL 60
    - ALGOL 68
    - SMALL
- BASIC
    - PowerBasic
    - Visual Basic (to bytecode)
    - PureBasic
- C
- C++
- C# (to bytecode)
- Carbon (programming language)
- CLEO
- COBOL
- Cobra
- Crystal
- D
- eC
- Eiffel
    - Sather
    - Ubercode
- Erlang (to bytecode)
- F# (to bytecode)
- Factor (later versions)
- Forth

- Fortran
- Go
- Haskell
- Haxe (to bytecode or C++)
- Java (to bytecode)
    - Clojure[2]
    - Scala
    - Kotlin
- JOVIAL
- Julia (through JIT)
- LabVIEW, G
- Lisp
    - Common Lisp
- Mercury
- ML
    - Standard ML
        - Alice
    - OCaml
- Nim (to C, C++, or Objective-C)
- Pascal
    - Object Pascal
        - Delphi
        - Free Pascal / Lazarus
    - Modula-2
    - Modula-3
    - Oberon
- Objective-C
- PL/I
- RPG
- Rust
- Seed7
- SPITBOL
- Swift
- Vala
- Visual Foxpro
- Visual Prolog
- Zig

Interpreted programming languages

- Ant
- APL
- AutoHotkey scripting language
- AutoIt scripting language
- BASIC (some dialects)
- Programming Language for Business (PL/B, formerly DATABUS, later versions added optional compiling)
- Eiffel (via *Melting Ice Technology* in EiffelStudio)
- Emacs Lisp
- FOCAL
- GameMaker Language
- Groovy
- J

- jq
- Julia (compiled on the fly to machine code, by default, interpreting also available)
- JavaScript
- Lisp (early versions, pre-1962, and some experimental ones; production Lisp systems are compilers, but many of them still provide an interpreter if needed)
- LPC
- Lua
- MUMPS (an ANSI standard general-purpose language)
- Maple
- Mathematica (Wolfram language)
- MATLAB
- OCaml
- Pascal (early implementations)
- PCASTL
- Perl
- PHP
- PostScript
- PowerShell
- PROSE
- Python
- Rexx
- R
- REBOL
- Ring
- Ruby
- S-Lang
- Speakeasy
- Standard ML (SML)
- Spin
- Tcl
- Tea
- TorqueScript
- thinBasic scripting language
- VBScript
- Windows PowerShell – .NET-based CLI

Task 4:

Difference between open-source languages and closed source ones

> With **closed source software** (also known as proprietary software), the public is not given access to the source code, so they can't see or modify it in any way.
>
> But with **open-source software**, the source code is publicly available to anyone who wants it, and programmers can read or change that code if they desire. Keep in mind that you don't have to read or modify any code in order to use an open-source product.

Task 5:

Is R a programming language

R is an open-source programming language that's optimized for statistical analysis and data visualization. Developed in 1992, R has a rich ecosystem with complex data models and elegant tools for data reporting.

Popular among data science scholars and researchers, R provides a broad variety of libraries and tools for the following:

- Cleansing and prepping data
- Creating visualizations
- Training and evaluating machine learning and deep learning algorithms

Task 6:

Programming languages that don't support OOP

- Assembler
- C
- Fortran
- COBOL
- Forth
- Pascal