Chapter Three

Literature Review

3.1 Introduction

In this chapter we are going to illustrate the AI Basic Concepts in section (3.2), (3.2.1) AI Importance, (3.2.2) AI Technology , (3.2.3) Machine Learning ,(3.2.4) Deep learning, (3.2.4.1) Deep Learning Achievement ,(3.2.4.2) Deep Learning Methods, (3.2.4.3) Deep Learning Neural Networks , (3.3) Used Tools Description, (3.3.1) Primary Tools Description, (3.3.2) Secondary Tools Description.

3.2 AI Basic Concepts

Artificial intelligence has become an essential element in modern recruitment processes, where it is used to analyze and filter CVs accurately and efficiently. AI-powered recruitment systems rely on technologies such as Natural Language Processing (NLP) and Machine Learning (ML) to extract the most relevant information from CVs and rank them according to job requirements.

There are two main types of AI-based CV filtering and ranking systems:

- Rule-Based CV Filtering Systems

These systems operate based on a set of predefined rules, filtering CVs based on specific keywords such as academic qualifications, professional experience, or required technical skills. They are commonly used in the initial screening phases but lack the ability to adapt to dynamic recruitment criteria.

- Machine Learning-Based CV Filtering Systems

These systems analyze data and learn from past recruitment processes, allowing them to improve accuracy over time. They can infer context, recognize patterns in candidate data, and even predict a candidate's suitability for a position through deep analysis of CV content.

The Importance of AI in Enhancing Recruitment Processes

- Time and Effort Savings: AI can analyze and filter thousands of CVs within minutes, reducing the manual workload for recruiters.

- Improved Selection Accuracy: Intelligent algorithms help identify the best candidates based on a comprehensive analysis of their skills and experience rather than just relying on keyword matching.
- Reducing Human Bias: AI evaluates CVs based on actual data, minimizing the potential for personal bias in the selection process.

- Better Candidate Experience: By accurately analyzing candidate data, AI systems can guide applicants to job opportunities that best match their skills and experience.

The use of AI in CV filtering and ranking enhances recruitment efficiency, enabling companies to make better hiring decisions and quickly identify the most qualified candidates.

3.2.1 AI Importance

Artificial intelligence (AI) is UBIQUITOUS today, it is being used a lot, to understand what you say to virtual assistants, like CHAT- GPT, AMAZON's ALEXA and APPLE'S SIRI, to and t, ALEXA and RECATGN.

3.2.2 AI Technology

Artificial intelligence has already had a positive impact across various industries. It can automate processes to reduce workload on employees, provide personalized learning options for students, assist cyber security companies in deploying faster solutions, and even support fashion companies in designing better-fitting garments for customers.

For example, Deep Learning techniques are used in ChatGPT to identify coding errors and provide written responses to queries.

Examples of AI Applications

- **CV Filtering & Ranking AI**

  Many modern recruitment systems rely on AI to filter and analyze CVs more quickly and accurately. These systems scan hundreds or thousands of CVs in record time, extracting the most relevant information such as skills, experience, and academic qualifications. Candidates are then ranked based on their match with job requirements, saving hiring teams significant time and effort. Advanced AI systems can also detect hidden patterns in data and predict a candidate’s potential performance based on historical data.

- **Intelligent Robots**

  AI-powered robots have limited problem-solving and "thinking" abilities, but they are gradually being assigned more complex tasks. Examples include teaching Japanese children English or working on Tesla's assembly lines.

- **Apple AI**

Since 2011, Apple's digital assistant Siri has been integrated into its operating system, helping users make phone calls, search the internet, set timers, and reminders—all powered by AI technology.

- **Microsoft AI**

  Microsoft entered the smart assistant space in 2014 with the launch of Cortana, which is now part of the Microsoft 365 suite. AI-powered assistants can execute voice commands to join meetings via Teams or send notifications about important emails that need follow-ups.

- **Samsung AI**

  In 2018, Samsung introduced its smart assistant Bixby with the Galaxy S8 and S8+ smartphones. Bixby can execute simple commands like launching the camera or searching for lost Bluetooth earphones. It can also integrate with smart home devices, such as smart refrigerators, to control lighting and automate household tasks.

- **AI in Self-Driving Cars**

  The self-driving car industry heavily relies on AI. These vehicles are equipped with sensors that continuously collect data about their surroundings, such as pedestrian locations, road conditions, and the speed of other vehicles. This data is analyzed using AI to make split-second decisions, advancing autonomous driving technology and improving road safety

. 3.2.3 Machine Learning

Machine Learning is a branch of artificial intelligence that involves using computers and software to improve performance and make decisions. The goal of Machine Learning is to create models or algorithms that computers can use to recognize patterns in large amounts of data, and then use them to make predictions about the future, make logical and accurate decisions, and analyze data more effectively. This technology is used in many applications such as classification, voice input, image recognition, natural language processing, and statistical analysis.

There are three types of feedback that determine the three main types of learning:

- In **unsupervised learning** the agent learns patterns in the input even though no explicit feedback is supplied. The most common unsupervised learning task is clustering:

detecting potentially useful clusters of input examples. For example, a taxi agent might gradually develop a concept of “good traffic days” and “bad traffic days” without ever being given labeled examples of each by a teacher.

- In **reinforcement learning** the agent learns from a series of reinforcements—rewards or punishments. For example, the lack of a tip at the end of the journey gives the taxi agent an indication that it did something wrong. The two points for a win at the end of a chess game tells the agent it did something right. It is up to the agent to decide which of the actions prior to the reinforcement were most responsible for it.

- In **supervised learning** the agent observes some example input–output pairs and learns a function that maps from input to output.

3.2.4 Deep Learning

Deep learning is a subset of machine learning, This is essentially a three- or more-layered Neural Networks. These Neural Networks try to mimic how the human brain functions; however, they fall far short of being able to match it, enabling it to "learn" from vast volumes of data. Additional hidden layers can help to optimize and refine for accuracy even if a Neural Networks with only one layer can still make approximation predictions.

Many artificial intelligence (AI) apps and services are powered by deep learning, which enhances automation by carrying out mental and physical tasks without the need for human intervention. Both established products and services (including digital assistants, voice-activated TV remote controls, and credit card fraud detection) as well as cutting-edge innovations (like self-driving automobiles) are powered by deep learning technology.

3.2.4.1 Deep Learning Achievement

Now that you know what Deep Learning is and how it functions, you're ready to use it. A machine learning technique is called deep learning. With a collection of inputs, it enables us to train an AI to predict outputs. The AI may be trained using both supervised and unsupervised learning techniques. By creating a fictitious airline ticket price estimator service, we will gain an understanding of how deep learning functions. We'll use supervised learning to train it, For the sake of simplicity, we are removing return tickets from the inputs for our airline ticket price calculator like Origin Airport, Destination Airport, Departure Date, Airline

Neural Networks Let's take a closer look at our AI's brain. The brain of our estimating AI has neurons, much like a mammal. Circles are used to symbolize them. There are connections among these neurons. Three main categories of layers are used to organize the neurons, Input Layer, Hidden Layer and Output Layer.

- **The input layer** accepts data input. Four neurons—Origin Airport, Destination Airport, Departure Date, and Airline are present in our example in the input layer. The first hidden layer receives the inputs from the input layer.
- **The hidden layer** uses our inputs to do mathematical calculations. Choosing the number of hidden layers and neurons for each layer is one of the difficulties in building Neural Networks.
- **The output layer** returns the results information. In this instance, it provides us with a price forecast.

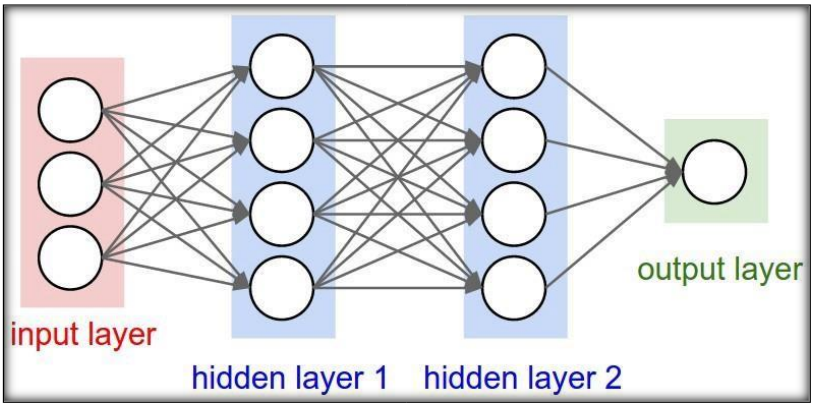

Fig 3. 1 Steps to achieve deep learning.

3.2.4.2 Deep Learning Methods

Strong deep learning models can be produced using a variety of techniques. These methods include dropout, learning rate decay, transfer learning, and starting from scratch. Decrease in learning pace. The learning rate is a hyperparameter that regulates how much change the model undergoes. A hyperparameter is a component that defines the system or establishes conditions for its functioning before the learning process. Every time the model weights are changed, the reaction to the estimated error. A suboptimal set of weights may be learned, or unstable training processes may be the result of excessive learning rates. A protracted training procedure with the possibility of being stuck can result from learning rates that are too slow.

The technique of adjusting the learning rate to improve performance and decrease training time is known as the learning rate decay method, also known as learning rate annealing or adaptable learning rates. Techniques to slow down learning rate over time are among the simplest and most popular adaptations of learning rate during training.

Transfer of knowledge. This technique entails refining a model that has already been trained, and it calls for access to a network's internal workings. Users first add new data including previously unidentified classifications to the already existing network. Once the network has been modified, new jobs can be carried out with more accurate categorization skills. The benefit of this approach is that it uses a lot less data than others, which cuts down computation time to minutes or hours.

Training from scratch. This technique entails refining a model that has already been trained, and it calls for access to a network's internal workings. Users first add new data including previously unidentified classifications to the already existing network. Once the network has been modified, new jobs can be carried out with more accurate categorization skills. The benefit of this approach is that it uses a lot less data than others, which cuts down computation time to minutes or hours.

Dropout. This approach tries to address the issue of overfitting in Neural Networks with a lot of parameters by randomly removing units and their connections during training. The dropout strategy has been demonstrated to enhance Neural Networks performance on supervised learning tasks in domains like speech recognition, document categorization, and computational biology.
[3]

3.2.4.3 Deep Learning Neural Networks

Most deep learning models are underpinned by an artificial Neural Networks, a sort of sophisticated machine learning algorithm. Deep learning is hence also known as deep neural learning or deep Neural Networks. Each type of Neural Networks, such as feedforward Neural Networks, recurrent Neural Networks, convolutional Neural Networks, and artificial Neural Networks, has advantages for particular use cases. However, they all work somewhat similarly in that data is fed into the model, and

the model then decides for itself whether it has made the correct interpretation or judgement for a particular data element.

Since Neural Networks learn by making mistakes, they require enormous volumes of training data. It's no accident that Neural Networks only gained popularity after most businesses adopted big data analytics and gathered enormous data repositories. The data used during the training stage must be labelled so the model can determine whether its educated estimate was correct because the model's initial iterations entail making educated guesses about the contents of an image or sections of speech. This indicates that even though many businesses using big data have a lot of data, unstructured data is less useful. Deep learning models cannot examine unstructured data unless they have been trained and have achieved an acceptable degree of accuracy. [4]

3.3 Used Tools Description

We used many tools while developing our project, some of them were primary (essential) Some of them were secondary so let us find out what tools were primary and what tools were secondary.

3.3.1 Primary Tools Description

We used multiple tools that played key roles in our project, and we were used five tools in the primary tools in our project like: Web development Framework, React framework , Asp.net c# , SQL server DB, figma .

3.3.1.1 Web Development Framework

Web development is a modern field supported by Google and other companies through open-source tools, allowing developers to create dynamic user interfaces compatible with multiple devices using a single codebase. Initially, development was limited to HTML and CSS, but with technological advancements, it is now possible to build fully functional web applications that run across different operating systems such as Windows, macOS, Linux, iOS, Android, and the web.

Web development offers performance close to native applications, as code is converted into JavaScript or WebAssembly for high speed and efficiency. Modern development environments rely on advanced rendering techniques like Virtual

DOM, ensuring smooth and consistent performance across platforms. Tools like Hot Reload allow developers to see changes in real-time without losing the application state, making development faster and more efficient.

Web development frameworks use programming languages such as JavaScript, TypeScript, Python, and Node.js, with TypeScript improving security and reducing errors. Developers receive strong support from open-source communities like GitHub, Stack Overflow, and Reddit, along with continuous updates from Google and Meta to enhance technologies like React and Next.js.

User interfaces in web development are built using components, where each element on a webpage is designed as a reusable part, making applications more organized and easier to maintain. Web development enables the creation of applications that run on multiple devices without the need to develop separate native applications for each platform, reducing costs and development time while ensuring a unified user experience across all systems.

Compared to native applications, which are specifically developed for platforms like iOS and Android, web development is faster and more cost-effective, though it may have some limitations in accessing native device features. However, recent advancements in web technologies have enabled web applications to deliver performance and speed close to that of native apps.

With modern tools, web development has become the ideal choice for companies and developers looking to create high-quality applications that work efficiently across different devices at a lower cost 3.3.1.2 Dart programming Language

An open-source general-purpose programming language Dart is available. It was initially created by Google and then given the ECMA seal of approval as a standard. A brand-new programming language called Dart is intended for both the server and the browser. The Dart SDK includes the Dart VM, the compiler that Google introduced. The SDK also comes with the tool dart2js, a transpolar that converts

Dart Script into JavaScript. A fundamental understanding of the Dart programming language is provided by this lesson.

Audience, for all those developers who wish to create single-page web applications using Dart, this course will be very useful. It is aimed for programmers with a solid understanding of object-oriented principles.

Prerequisites, the lesson assumes that the readers are familiar with the fundamentals of object-oriented programming. Working with JavaScript will make it easier for you to learn Dart's ideas fast. [8]

3.3.1.3 React Framework

React is an open-source JavaScript library developed by Facebook (now Meta) for building user interfaces, particularly for single-page applications (SPAs). It allows developers to create fast, scalable, and interactive UIs using a component-based architecture, where each part of the interface is broken down into reusable components.

One of React's key features is the Virtual DOM, which optimizes rendering by updating only the necessary parts of the UI instead of reloading the entire page. This improves performance and enhances the user experience. React also supports state management, allowing components to update dynamically based on user interactions or data changes.

React can be used for both web and mobile development. With frameworks like Next.js, developers can implement server-side rendering (SSR) and static site generation (SSG) for improved performance and SEO. For mobile development, React Native enables the creation of cross-platform mobile apps using the same React principles.

The React ecosystem is vast, with libraries such as Redux, React Query, and React Router that help manage state, data fetching, and navigation efficiently. Additionally, React has a strong developer community, ensuring continuous improvements, extensive documentation, and numerous third-party tools to enhance development.

Overall, React is a powerful and flexible choice for modern web applications, offering high performance, reusability, and a strong ecosystem to streamline development

3.3.1.4 ASP.net C#

ASP.NET is a server-side web framework developed by Microsoft for building dynamic, scalable, and secure web applications. It works seamlessly with C#, a powerful object-oriented programming language, making it ideal for backend development.

Key Features:

- MVC Architecture – Supports Model-View-Controller (MVC) for better separation of concerns and maintainability.
- Blazor & Razor Pages – Allows building interactive web UIs using C# instead of JavaScript.
- High Performance – Uses asynchronous programming (async/await) for efficient handling of multiple requests.
- Security – Built-in support for authentication, authorization, and data protection.
- Integration with SQL Server – Easily connects with SQL Server for database management.
- Cross-Platform Support – With ASP.NET Core, applications can run on Windows, Linux, and macOS.
- Dependency Injection (DI) – Improves modularity and testability.
- RESTful APIs – Ideal for creating Web APIs for mobile and web applications.
- Cloud & Microservices Ready – Easily deployable to Azure, supports Docker & Kubernetes for microservices.

3.3.1.5 Figma

The tool Figma is primarily intended for those who want to build user interfaces. The software's initial release took place in September 2016. Over four million people are using Figma as of the time of writing in January 2023.

Figma is now a component of the Adobe ecosystem after being acquired by Adobe for $20 billion in September 2022.Unlimited collaborators and three files for Figma

are included in Figma's free plan. If you want access to more, you can select from paid subscriptions.

What Is the Purpose of a Figma? Let’s look at what you can accomplish with the service now that you are more familiar with the Figma tool. There are several advantages to utilizing Figma, some of which are listed here.

Brainstorming, Bring all your ideas for a large project together in one spot if you're in the conception phase. While you can sketch them out on paper, it will probably be simpler for you to record your thoughts online. A useful tool for brainstorming is Figma. You can enter whatever you might need to refer to later in text boxes, as well as make comments and use different shapes.

Designing Website Page, Businesses who want to increase sales and their customer base must have a well-designed website. But there needs to be a lot of preparation done in advance before a site goes online. Figma is useful if you want to preview different homepage designs before creating them.

In Figma, you may select from a variety of dimension sizes to precisely represent how your page will appear. For instance, if you're creating something for a smartphone, you can select from various iPhone sizes.

You can also select more helpful options to observe how the website will operate in actual use, including scrolling.

Creating App Prototypes, in line with the foregoing, user interface (UI) and user experience (UX) designers absolutely require Figma as a tool. If you want to make app prototypes and test how they will work on various devices, the tool is helpful. You can select different iPhone dimensions, as was discussed in the part before, but there are other options as well. You may use Figma to see how your app will appear on iPads and Android devices.

Project management, you may imagine a program like Monday.com or Asana when you think of project management software. However, if you already use Figma for your projects, you might want to continue using it for project management.

Project management tools are available in Figma in a variety of forms. You could, for instance, work with lots of people and get their feedback. Additionally, you may design project timelines in Figma using the text and shapes.

Like when creating prototypes, you can incorporate a variety of plugins into Figma to help you manage your projects.

Mind Maps, Figma is a useful tool if you want to make mind maps instead of brainstorming. You can get a head start by using one of the many mind-mapping templates available, but there are also many tools available for creating your own mind maps from scratch. [9]

3.3.1.6 SQL Server DB

- SQL Server is a powerful relational database management system (RDBMS) developed by Microsoft. It is widely used in backend development to store, manage, and retrieve structured data efficiently. SQL Server is known for its scalability, security, and high performance, making it a popular choice for enterprise applications, web apps, and cloud-based solutions.

Key Features for Backend Development:

- **Data Management & Querying**

  SQL Server uses T-SQL (Transact-SQL), an extension of SQL, to write queries, stored procedures, and triggers that help in efficient data manipulation and business logic implementation.

- **Performance Optimization**

  It includes indexing, query optimization, and in-memory processing to ensure fast data retrieval and handling of large datasets without performance bottlenecks.

- Security & Access Control

  SQL Server provides role-based access control (RBAC), encryption, auditing, and data masking to protect sensitive information from unauthorized access.

- High Availability & Reliability

  Features like Always On Availability Groups, database mirroring, and failover clustering ensure that applications remain available with minimal downtime.

- Integration with Backend Technologies

  SQL Server seamlessly integrates with .NET, Node.js, Python, and Java, allowing backend developers to connect, query, and manipulate data easily. It also supports Restful APIs through SQL Server Web Services.

- **Cloud & Hybrid Deployment**

  With Azure SQL Database, developers can leverage SQL Server in the cloud for scalable, managed, and cost-effective database solutions. Hybrid deployments allow syncing between on-premise and cloud databases.

- **Stored Procedures & Triggers**

  SQL Server enables backend developers to encapsulate business logic in stored procedures, reducing the need for repetitive queries and improving application security and performance.

- **Backup & Recovery**

  Automated backup, point-in-time recovery, and disaster recovery solutions help maintain data integrity and prevent data loss.

3.3.2 Secondary Tools Description

We used multiple tools that played secondary roles in our application, and we were used eight tools in the Secondary tools in our project like: Postman , LARP, Microsoft Excel, VS code , Draw.io , GitHub , Microsoft Word, Microsoft PowerPoint.

3.3.2.1 Postman

Postman is the main complete API improvement condition. Today we have 10 million designers and more than 500,000 organizations utilizing our far-reaching set of implicit instruments to help each phase of the API life-cycle. With Postman you can
configure, mock, troubleshoot, test, report, screen, and distribute your APIs across the
board place.
Postman previously picked up notoriety in 2012 when Abhinav transferred his venture to the Chrome Web Store. Mailman in the long run graduated to powerful, local applications and is currently utilized by more than 10 million engineers and 500,000 organizations

3.3.2.2 LARP

A programming language for the aim of rapid algorithm prototyping, Logic of Algorithms for Resolution of Problems (LARP) is an instructional software for teaching algorithmic in structured programming using pseudocode and flowcharts.

The fundamental benefit of LARP over conventional programming languages is its adaptable and semi-natural syntax, which frees programmers from the limitations of obscure languages like C++, Pascal, or Java to create algorithms. Even a non-programmer can easily understand the simple syntax of LARP. Algorithms can also be represented as flowcharts in LARP. Therefore, rather than learning how to utilize a complicated interface or to program using dry grammar, the user concentrates on thinking up algorithms.

The software is especially useful for teaching programming because of the flexibility of the LARP programming language and the usability of its development environment. Programming concepts like conditions, loops, and modularity can be introduced simply and briefly by the instructor using pseudocodes and/or flowcharts in the LARP.

Students can utilize LARP to practice and study algorithms they have learned in class. Its development environment provides online help, exposing LARP's programming syntax in pedagogical style, to make it easier to utilize LARP in a classroom setting.

. LARP makes learning programming simple, whether it's done in a classroom setting or just on your own.

3.3.2.3 Microsoft Excel

Microsoft's Excel spreadsheet program is a part of the Office family of business software programs. Users of Microsoft Excel may format, arrange, and compute data in a spreadsheet.

Data analysts and other users can make information easier to examine as data is added or altered by organizing data using tools like Excel. The boxes in Excel are referred to as cells, and they are arranged in rows and columns. These cells are used to store data.

The Microsoft Office and Office 365 suites include Excel, which works with the other Office programs. The spreadsheet application can be used on Windows, macOS, Android, and iOS devices.

Typical Excel use cases, Excel is most frequently utilized in professional contexts. It is utilized, for instance, in operations management, performance reporting, human

resource management, and business analysis. Excel uses a sizable group of prepared cells to arrange and edit data as well as perform mathematical operations. Utilizing formulas, pivot tables, and graphing tools, users can arrange data in the spreadsheet. Visual Basic for Applications is a macro programming language that is integrated into the spreadsheet application.

The active cell, indicated by a green box, is the currently chosen cell. Workbook, one or more worksheets are present in this Excel document. Worksheet, the various files that make up a Workbook are listed below. Sheets tab, the spreadsheet has these tabs in the lower left corner.

Row and column headings, these are the cells with numbers and letters that are situated close to the edges of the columns and rows. When a header is chosen, the entire row or column is highlighted.

Filter, A user can use these rules to choose which rows in a worksheet to display. The home bar's top right corner has this option under "Sort & Filter." Rows that match values will be displayed if the auto filter option is chosen.

AutoFill, Users can automatically copy data to several cells using this feature. A user can choose both cells in a series of two or more cells and drag the bottom right corner downward to automatically fill the remaining cells.

AutoSum, Users can add several values with the help of this functionality. Users can press the Alt and Equal keys while selecting the cells they want to add. Additionally, there is a button to turn on this function in the upper right corner of the home page, just below "Fill" and across from "Sort & Filter."

Data sources, this data is what is utilized to build a pivot table, competitors who excel, even though Excel may be one of the most well-known spreadsheet programs, other manufacturers have rival offerings. Some examples are as follows:

Sheets on Google, with comparable designs and capabilities to Excel, Google Sheets is a free alternative. Google Sheets is available to everyone with a Gmail account. Users of Google Sheets can view their spreadsheets from any location and on a variety of devices because they are stored in the cloud. Additionally, several users can work together on the same spreadsheet.

Numbers, Every Mac includes a free spreadsheet program from Apple that includes prebuilt templates, charts, and graphs. Although Microsoft Excel is better at

handling huge data sets, Numbers shine at visuals and charts. Additionally, Numbers are only available on Apple devices. However, users can save spreadsheets as Excel files, allowing Windows users to still browse spreadsheets created in Numbers in Excel.[10]

3.3.2.4 VS code

The simplicity of a source code editor is combined with strong developer tooling, like IntelliSense code completion and debugging, in visual Studio Code, an editor gets out of your way first and foremost. Less effort is spent fussing with your surroundings and more time is spent putting your ideas into action thanks to the delightfully frictionless edit-build-debug cycle. Accessible on Windows, Linux, and macOS, no matter the platform, Visual Studio Code supports macOS, Linux, and Windows, allowing you to get started quickly.

Easily edit, build, and debug, A super-fast source code editor is at the core of Visual Studio Code, making it ideal for everyday usage. With hundreds of languages supported, VS Code makes it easy for you to get started right away and be productive with features like syntax highlighting, bracket matching, auto-indentation, box selection, snippets, and more. You can traverse your code with ease thanks to intuitive keyboard shortcuts, simple modification, and community-contributed keyboard shortcut mappings.

For serious coding, tools with more code understanding than merely blocks of text are frequently beneficial. Code refactoring, sophisticated semantic code understanding and navigation, and IntelliSense code completion are all features that come standard with Visual Studio Code. And as coding becomes challenging, the skilled turn to debugging. We added debugging since it's frequently the one thing that developers miss most in a reduced coding environment. An interactive debugger is built into Visual Studio Code, allowing you to step through source code, explore variables, see call stacks, and run console commands.

VS Code, which was created with a love for the web, has enhanced built-in support for Node.js development, including JavaScript and TypeScript, and is powered by the same core technologies as Visual Studio. Additionally, VS Code has excellent web development tools for JSX/React, HTML, CSS, SCSS, Less, and JSON.

The tools service architecture that VS Code employs also enables it to interface with many of the same technologies that run Visual Studio, including TypeScript, Roslyn for.NET, the Visual Studio debugging engine, and others. A public extensibility approach built into Visual Studio Code enables developers to create and use extensions as well as fully customize the edit-build-debug experience.

3.3.2.5 GitHub

GitHub, Inc. is a United States-based worldwide organization that gives

facilitating to programming improvement rendition control utilizing Git. It is an

auxiliary of Microsoft, which gained the organization in 2018 for US$7.5 billion.[3] It

offers the appropriated rendition control and source code the executives (SCM)

usefulness of Git, in addition to its own highlights. It gives get to control and a few

coordinated effort highlights, for example, bug following, include demands, task the

executives, and wikis for each project .

GitHub offers designs for nothing out of pocket, and expert and venture

accounts. Free GitHub accounts are usually used to have open source projects. As of

January 2019, GitHub offers boundless private archives to all plans, including free

accounts. As of January 2020, GitHub reports having more than 40 million users and

in excess of 100 million repositories (counting at any rate 28 million open repositories),

making it the biggest host of source code in the world .

3.3.2.6 Draw.io

Open-source diagram and flowchart software called Draw.io was developed for contemporary business needs and duties. You will have access to a few tools and features for editing your designs thanks to their free availability across devices and browsers. This straightforward approach will enable you to start working right away

and receive results without hesitation. Draw.io is a userfriendly design that lets you put your data into a more palatable format and keeps tools and instructions close at hand regardless of your degree of technical expertise.

3.3.2.7 Microsoft Word

The users' ability to type and save documents is the goal of MS Word. It includes useful capabilities to create documents, just like other word processors. Microsoft Word, sometimes known as word, has many advantages. Let's talk about it in greater depth.

It's the most widely used word processing application on the planet. The availability of it is one of its most evident advantages. Microsoft suit is installed on almost every Windows user's machine. It can be found and used on all popular PCs. Documents are saved in Microsoft Word. The documents can be copied to a flash drive, which functions as your computer's external memory.

This enables you to use the stored paper and carry it about easily.

3.3.2.8 Microsoft PowerPoint

Meetings are essential to business success, but they take up a lot of your time, your most asset. One meeting with a small group of people can take up the entire day. Additionally, studies have shown a link between unorganized meetings and decreased market share, innovation, and stability.

therefore, can you guarantee that your meetings are both successful and productive PowerPoint is useful! Utilize PowerPoint presentation design to make the most of every meeting minute. PowerPoint is still the most important tool for meetings when used properly. Better graphics and meeting communications have helped our clients at slide have more successful meetings and more profitable business outcomes.

The following list of seven justifications for using PowerPoint in your subsequent meeting:

PowerPoint Maintains Meeting Focus: A strong PowerPoint aids the presenter in organizing and pacing the meeting. Keeping an audience attentive during virtual meetings is considerably harder, thus a strong PowerPoint presentation design will

assist the presenter in maintaining control of the audience's attention. Attendees will stay on topic, and you'll get the job done even if you just use an agenda slide.

Presenter confidence is increased via PowerPoint: Anything that makes public speaking simpler is a gain because most people find it difficult. Presenters won't have to worry about forgetting any of their key points if they have a well-designed slide deck to use as a content guide. This enables individuals to unwind and feel more assured, which enhances their ability to come out as informed, authoritative, and entertaining. The likelihood that audiences will pay attention and be persuaded by their message is increased by all of this.

Quick Communication of Complex Ideas is Made Possible by PowerPoint: Presenters can use PowerPoint to simplify complex concepts, data, or figures into understandable visualizations. The right hemisphere of the brain is stimulated when information is presented visually, allowing viewers to analyse, explain, and interact with what they are seeing. This right-sided brain function is ideal for using the core function of PowerPoint, which is to translate complex material into graphics that help the presenter avoid audience misunderstanding and keep the meeting on schedule.

PowerPoint Improves Presentation and Presentation Skills: Making a PowerPoint presentation requires the presenter to refine their message since it forces them to put their ideas "on paper." They have a better understanding of their material by going through this process. They have a better chance of presenting a presentation that has been careful.