1.1 :Software use for automate tasks, increase efficiency, allow to handle large amount of data and for complex processing. Below are some examples of different types of software solutions.

1. Mobile apps

* Healthcare apps – Mobile app that allows patients to book appointments, consult doctors, track health records, receive medication reminders.
* Fitness tracking app – Track workouts, check calorie count, schedule fitness plans

1. Web based software

* E-commerce platforms – Online marketplace for buying and selling, handle payment processing.
* Online learning platforms – Remote learning, track student records, deliver course materials.

1. Desktop applications

* Design tools – Vector drawing, photo editing, 3D design modelling.
* Games – Online and offline games,

1. Embedded systems

* Smart home systems – Homeowner can control like lights, security systems, smartphones, and voice assistance.
* Monitoring systems – Embedded systems that integrates with sensors to monitor temperature, pressure, vibration.

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| **Real-life problems** | **Solutions** |
| Managing personal finances | Finance management software (Mint, YNAB) |
| Inefficient healthcare appointment scheduling | Online healthcare appointment system (Zocdoc, Practo) |
| Tracking inventory | Inventory management system (TradeGecko) |
| Cyber security threats and data breaches | Security softwares and VPN (Norton, NordVPN) |
| Poor customer support | AI powered chatbots (Drift, Intercom) |
| Parking issues in traffic | Smart traffic management and parking system (Parkopedia) |
| Lack of access to education | Online learning platforms (Coursera, edX) |
| Inaccurate or slow data analysis | Business intelligence and data analytic tools (Power BI, Looker) |
| Difficulty in managing health | Health and fitness app (Apple health, Fitbit) |
| Lack of digital storage | Cloud storage (Google drive, Dropbox) |

**Healthcare Application**

* Python – Primary programming language for the application.
* SQLite – Database of the system (Lightweight, self-contained database engine).
* MFA – Authentication and Authorization.
* Hashing – For password security.
* Git – Version control system for code management.
* Tkinter – GUI framework (Built-in Python library)