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| **Project Title** | EX Libris A Latin expression referring to stamps on books by libraries or persons to authenticate and prove ownership. | | |
| **Track** | **Team 5 (AiZ)** | | |
| **Supervisor** | Prof./Dr. Ayman Ezzat, Prof./Dr. Ahmed Bahaa & Prof./Dr. Islam ElSharaawy | **Mentor Name** | Prof./Dr. Islam ElShaarawy |
| **Team Name** | Team 5 ( AiZ) | | |
| **Team Members** | Ehab Tharwat ID: 193663 | Ahmed Issa ID: 191947 | Nada Ahmed ID:193589 |
| Elham Gomaa ID:183091 | Huda Fouad ID: 184025 | Text. |
| **Problem Summary** | By the availability of today’s inexpensive powerful hardware, it becomes possible to design real-time computer vision systems even in personal computers. Therefore, computer vision becomes a powerful tool for human-computer interaction (HCI). In this project, we applied three novel ways of HCI, which is hand gestures, voice recognition and laser pointer. | | |
| **Methodology** | Human – Computer Interaction (visual studio, C#)   * **Hand gestures**:   Hand gesture is a very natural form of human interaction and can be used effectively in human computer interaction (HCI). This project involves the design and implementation of a HCI using a small hand-worn wireless module with a 3-axis accelerometer as the motion sensor.   * **Voice Recognition**:   Speech recognition technology is a kind of technology that provides a communication between a man and machine. Much of the focus in this area has been on creating better technical speech recognition (SR) systems, and almost all of the testing has centered on accuracy and productivity gains. | | |
|  | * **Laser Pointe**r:   Edge detection plays a role in recognizing the dimensions of facial features, which means that higher percentage of specific dimensions indicates the existence of feature. On that account, edges of facial features are marked up by tiny circles | | |
| **Achievements and Skills Gained** | 1. Determining the appropriate user interface by choosing tkinter in order to provide a user-friendly experience and on demand features that are easily accessible. 2. Providing software that solves significant issues with minimum costs; attempting to create the ideal software for educational institutions. It is affordable, user-friendly, inclusive. | | |

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| **Project Title** | EX Libris |
| **Main Results** | Hand gesture: |
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|  | Voice command: |
|  | Laser pointer: |
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| **Discussion and Conclusion** | EX Libiris can be considered as the answer to user goal. By HCI ( human computer interaction) which deals with many features :  **Hand gestures:**  It has many advantages like immediate and powerful interaction and Intuitiveness and enjoyability. In other hand, it might make drawback like immersion and exit errors.  **voice recognition**:  Easy in interaction but numerous using of commands.  **Laser pointer:**  It has low functionally by just clicking on it. |
| **References** | **Sources:**  [**https://www.geeksforgeeks.org/new-trends-in-human-computer-interaction/**](about:blank)  **Readings:**  [https://www.researchgate.net/publication/296700573\_Human\_Computer\_Interaction\_Using\_Speech\_Recognition\_Technology](about:blank)  [https://www.sciencedirect.com/science/article/pii/S187705091501409X](about:blank) |
| **Future Work and Suggestions** | * All features of EX Libirs can be used to track the productivity of user requirements. * Merage multi-operations hand gestures and voice recognition to reach the requirement need. |
| **Group Photo** | None. (Remote teamwork) |