Smart E-Book Viewer
An E-book viewer to help people with motor disabilities to read e-books with ease

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Overview / Abstract:
This novel application was designed with a noble cause in mind. It aims at providing a user-friendly means for people with severe motor disabilities to gain access to and read e-books by applying the emerging “brain computer interface” (BCI) technologies. By integrating ideas from pattern recognition and natural user interface design, this BCI e-book viewer system is able to detect the control signals sent by the user by analyzing the brainwave and then issue commands to turn to the previous or next page with over 97% accuracy. This real-time e-book viewer application can deliver a more natural and comfortable e-book reading experience for its target users.

Discovery-enriched Curriculum (DEC) journey for students:
The student innovator has successfully developed a working brain computer interface (BCI) for an e-book viewing application. One of the challenges faced by the student in this project was the need to decode the brain signal captured from the input device in order to differentiate the user’s various commands. Having compared different approaches and performed various experiments, the student was able to determine the most discriminative features and the best classification algorithms to be adopted.