MON -21

Team Members:
Mohammad Samiuddin Shafi (22B3912)
Shivam Panwar (22B3965)
Sumanth Gogineni (22B3915)
Lokesh Borra (22B3906)
Yashwanth Juluwa (22B1271)

P-31 : Simulator for firefly flashing synchronization studies

What is your project?

A programmable firefly system using STM32 microcontrollers and IR communication to explore synchronization in complex systems.

Who will use your product?

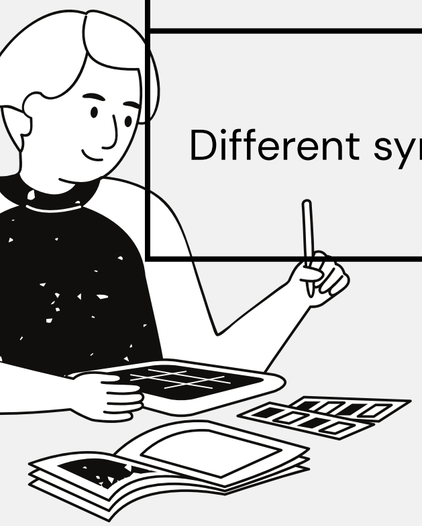
Designed as an educational platform for professors studying coupled systems and dynamics.

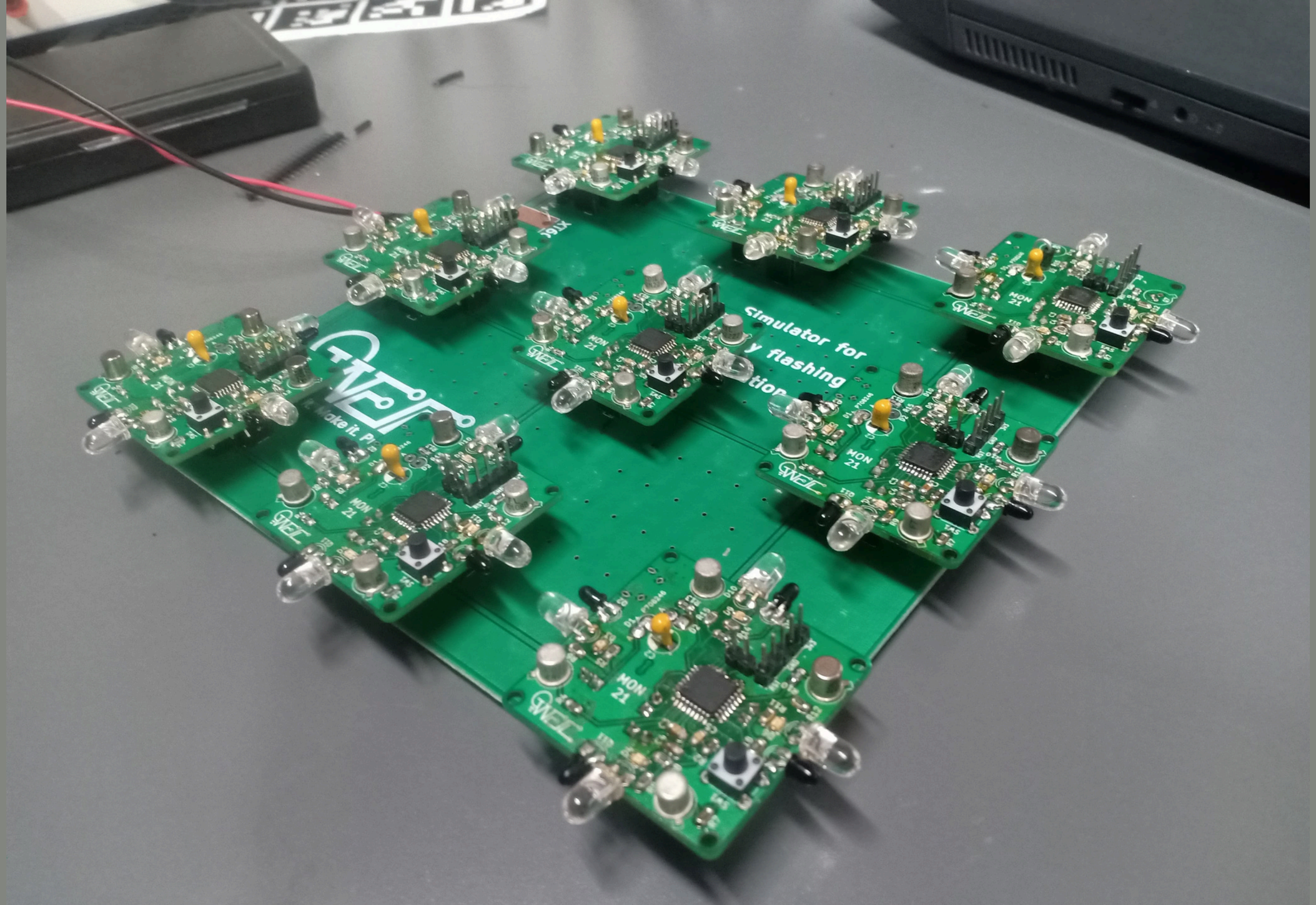
Which problem faced by your user does your product solve?

Our system uses a modern microcontroller to enable programmable control, enhanced customization, and real-time experimentation.

Status of Project

Key specifications and requirements proposed at beginning of semester	Status at end of semester	Remarks/Justification
IR communication which is immune to ambient light	Complete	Our system works perfectly in any light condition and do not need dark room to work
Synchronisation	Complete	Our fireflies synchronisation works as can be seen in the demo video
Baseboard for mounting	Complete	We said to add this as additional feature and have completed it
Different synchronization patterns	Incomplete	We have implemented natural firefly synchronization but have not yet explored more complex synchronization algorithms.

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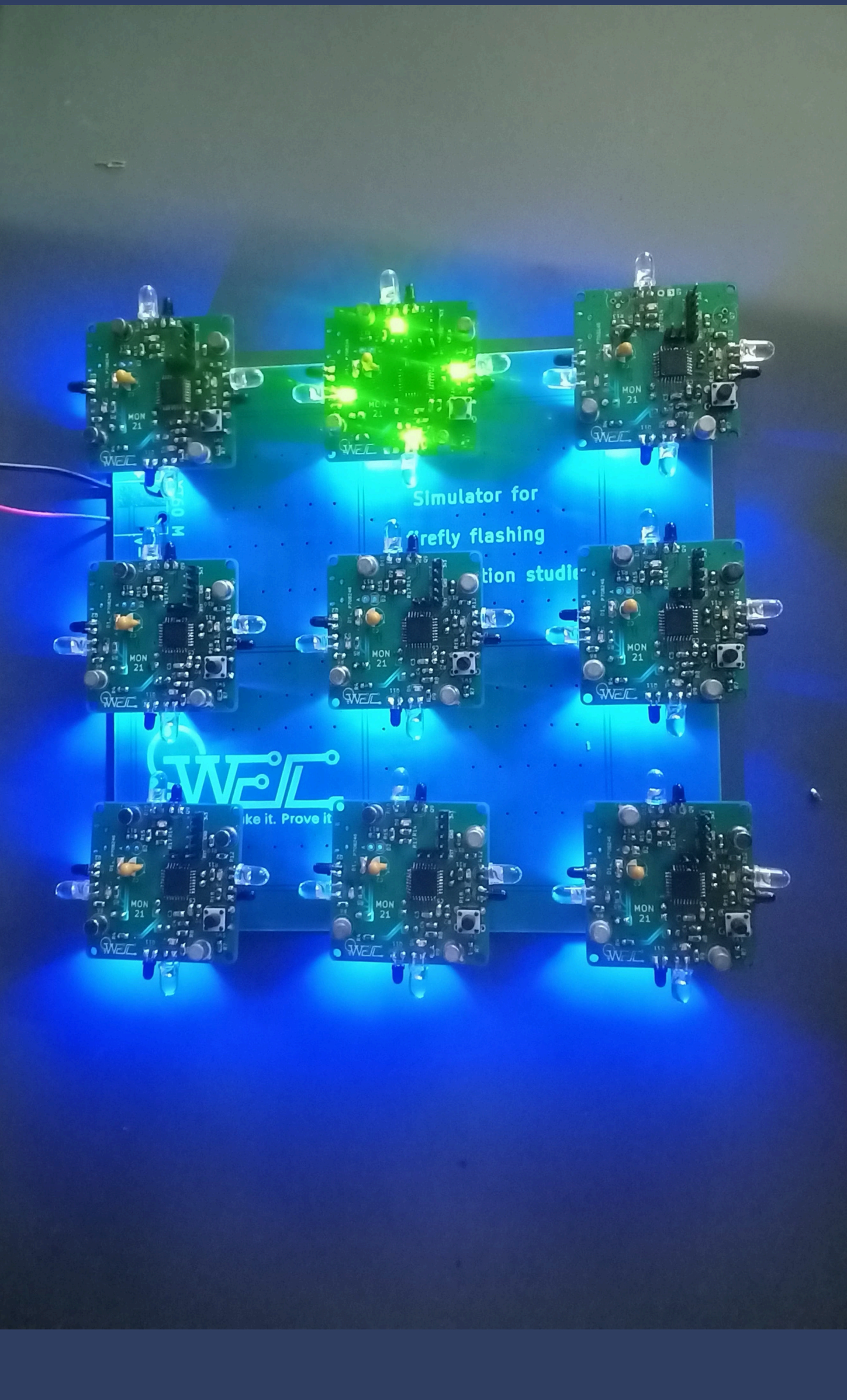
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Demo Video

Thank you very much!