

# Sekolah Lapang IoT: Pengembangan Masyarakat Desa Wisata Berbasis Budaya Ikan Koi Melalui Pengembangan Teknologi Digital

## (IoT Field School: Community Development in Tourism Villages Based on Koi Fish Cultivation Through Digital Technology Development)

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### ABSTRAK

Inovasi teknologi *Internet of Things* (IoT) mulai dikenal dalam aktivitas budidaya koi. IoT diharapkan dapat membantu petani koi dalam mengatasi berbagai tantangan yang semakin dirasakan seperti kualitas air sering berubah, kesalahan pemberian pakan, serangan penyakit, dan persaingan pasar. Kegiatan Sekolah Lapang IoT bertujuan untuk meningkatkan kapasitas masyarakat Desa Wisata dalam mengelola budidaya ikan koi melalui pemanfaatan teknologi digital berbasis Internet of Things (IoT). Selain itu, Sekolah Lapang IoT diharapkan dapat sebagai *technopark* IPB University pengembangan teknologi digital tepat guna bagi masyarakat desa. Pelaksanaan kegiatan dilakukan melalui metode pelatihan kerangka kerja IoT dalam budidaya ikan koi, meliputi sensor untuk monitoring kualitas air dan tanah, denah pemasangan sistem IoT dan sensor pada kolam budidaya, serta pemanfaatan IoT untuk otomatisasi pemberian pakan. Peserta juga diberikan gambaran perhitungan modal pembuatan sistem IoT yang terjangkau dan menjadi salah satu investasi jangka panjang. Selain itu, peserta juga mendapatkan pelatihan dan pendampingan pembuatan film pendek sebagai media promosi koi. Rangkaian kegiatan dilaksanakan di Dusun Kuwut, Desa Kemloko, Kecamatan Nglebok, Kabupaten Blitar, pada 24–27 September 2025. Melalui pelatihan ini petani koi dibekali pengetahuan tentang kerangka kerja IoT untuk budidaya ikan koi. Selain itu, pelatihan ini juga membekali petani pengetahuan dan keterampilan mempromosikan koi melalui film pendek yang menarik dan interaktif. Secara keseluruhan, kegiatan ini menyimpulkan bahwa petani mulai tertarik dalam menggunakan IoT untuk budidaya koi. Penerapan IoT dapat meningkatkan efisiensi budidaya, memperkuat daya tarik wisata, dan dapat mendorong kemandirian teknologi masyarakat desa yang menjadi keunikan dan nilai tambah yang berbeda dengan komunitas petani koi di daerah lainnya.

Kata Kunci: IoT, pengembangan kapasitas, promosi, teknologi budidaya ikan koi

### ABSTRACT

The innovation of Internet of Things (IoT) technology has begun to gain recognition in koi aquaculture activities. IoT is expected to help koi farmers address growing challenges such as fluctuating water quality, feeding errors, disease outbreaks, and increasing market competition. The IoT Field School aims to strengthen the capacity of Tourism Village communities in managing koi aquaculture through the use of digital technology based on the Internet of Things (IoT). In addition, the IoT Field School is expected to serve as an IPB University technopark that supports the development of practical digital technologies for rural communities. The activities were carried out through training on IoT frameworks for koi aquaculture, including the use of sensors to monitor water and soil quality, layout planning for IoT system and sensor installation in culture ponds, and the application of IoT for automated feeding. Participants were also introduced to cost estimates for developing affordable IoT systems as a potential long-term investment. In addition, participants received training and guidance on producing short films as a media tool for promoting koi. The series of activities was held in Kuwut Hamlet, Kemloko Village, Nglebok District, Blitar Regency, from 24 to 27 September 2025. Through this training, koi farmers were equipped with knowledge of IoT frameworks for koi aquaculture. The program also provided farmers with the skills and understanding needed to promote koi through engaging and interactive short films. Overall, the program suggests that farmers are beginning to show interest in using IoT for koi cultivation. The adoption of IoT has the potential to improve farming efficiency, enhance the village's tourism appeal, and foster technological self reliance that could be uniqueness and added value that distinguishes it from other koi farming communities.

Keywords: capacity building, IoT, koi fish farming technology, promotion