

**INTISARI
PROYEK AKHIR**

**ANALISIS *QUALITY OF SERVICE* TERHADAP PERANCANGAN SISTEM
GERBANG PARKIR KAMPUS MENGGUNAKAN *OPTICAL CHARACTER
RECOGNITION* BERBASIS RASPBERRY PI**

Perkembangan teknologi, khususnya *internet of things* (IoT) semakin menunjukkan kemajuan dari tahun ke tahun. Dalam salah satu penerapannya, IoT dapat dimanfaatkan untuk membantu mengamankan kendaraan di lahan parkir area kampus. Proses otorisasi pada gerbang parkir sebelumnya dilakukan oleh petugas keamanan kini dapat diminimalisir dengan perkembangan teknologi. Otorisasi atas pengendara dan kendaraan dapat dilakukan dengan memanfaatkan Kartu Tanda Mahasiswa (KTM) dan juga plat nomor kendaraan yang diolah menggunakan Raspberry Pi. Setiap KTM memiliki *unique identifier* (UID). UID pada KTM dibaca menggunakan *RFID Reader* sedangkan plat nomor ditangkap melalui *webcam* yang selanjutnya akan diolah menggunakan proses *optical character recognition* (OCR) menjadi bentuk teks. Kedua data tersebut selanjutnya dikirim ke *database* lokal melalui protokol TCP/IP lalu ditampilkan pada *website* sederhana untuk *monitoring*. Pengiriman data dari *nodes* ke *database* diukur kualitas performa (*Quality of Services*) dengan hasil *throughput* sebesar 4,58 Mbps, *packet loss* sebesar 0%, dan rata-rata *delay* sebesar 2,948 milidetik.

Kata Kunci: *Internet of Things (IoT), Quality of Services, Optical Character Recognition, Radio Frequency Identification, Raspberry Pi*

ABSTRACT

QUALITY OF SERVICE ANALYSIS TO RASPBERRY PI BASED CAMPUS PARKING GATE DESIGN SYSTEM USING OPTICAL CHARACTER RECOGNITION

Technology development especially Internet of Things (IoT) increasingly showing progress from year to year. In one of the applications, IoT can be utilized for helping secure vehicles in the campus parking lot. The authorization process on parking gate previously carried out by security officers, now can be minimized with the technology development. Driver and vehicle authorization can be done by utilizing student's ID (KTM) and plate number. Both data processed by Raspberry Pi. Every KTM has its own unique identifier (UID). UID from KTM can be read by RFID Reader whereas plate number captured by webcam which next processed using optical character recognition into the text format. Both data send to local database through TCP/IP protocol then next showed on simple website for monitoring purpose. The performance quality (QoS) of data delivery from nodes to database measured with result that throughput of 4,58 Mbps, has packet loss of 0%, and average delay of 2,948 milliseconds.

Keywords: Internet of Things (IoT), Quality of Services, Optical Character Recognition, Radio Frequency Identification, Raspberry Pi