



Arduino Project

KU1202 Pengantar Rekayasa dan Desain

K-20

Sekolah Teknik Elektro dan Informatika
Institut Teknologi Bandung



Overview

- Project Details
- Project Options
- Grading

Project Details

Ringkasan

- Deskripsi:
 - Berkelompok (**2-3 anggota**).
 - Durasi **4-28 Mei 2021**.
- Output:
 1. Dokumen Laporan
 2. Video
- Jadwal:
 - Pengumpulan Tugas → **28 Mei 2021, pukul 16.00 WIB (batas akhir)**

Dokumen Laporan

1. Latar belakang
2. Spesifikasi
3. Alternatif yang ada, alasan pemilihan solusi
4. Desain
 - Flowchart
 - Komponen yang dibutuhkan
5. Implementasi
 - Gambar rangkaian di Tinkercad
 - Cara kerja alat
 - Bagaimana menerapkan solusi untuk menjawab latar belakang?
6. Pengujian
 - Simulasi pada Tinkercad
 - *Troubleshooting*

Video

- Konten berupa penjelasan **singkat** tentang:
 - Latar belakang
 - Solusi yang ditawarkan
 - Cara implementasi
 - Pengujian
- Ketentuan lainnya:
 - Durasi **maksimal 10 menit**.
 - Mencantumkan identitas (nomor kelompok, NIM, nama lengkap).
 - Perkenalan di awal video.



Pengumpulan

- GitHub Repository:
 - Buat repository dengan nama: **Kelompok-XX**, misalnya: **Kelompok-99**
- Ketentuan:
 - Semua file dikumpulkan/diunggah ke repository di atas, kecuali video.
 - Video diunggah di YouTube, yang kemudian linknya dicantumkan pada file **README.md** di repository.
 - Ketentuan lain yang lebih detail akan disampaikan melalui pengumuman di GitHub.

Project Options

Tingkat Kesulitan

- Ada 3 pilihan:
 - **Pilihan 1 (mudah):** 1 input, 1 output
 - **Pilihan 2 (sedang):** input ≥ 1 , output > 1
 - **Pilihan 3 (sulit):** multiple input, multiple output

Pilihan 1 (1 input, 1 output)

Examples:

Project Name	Input	Output	Description
Social Distancing	Ultrasonic Sensor	Buzzer	Buzzer turned on in a certain distance: <ul style="list-style-type: none"> • 1 beep/3 second if distance ≥ 2 meter • 1 beep/second if distance ≥ 1 meter and distance < 2 meter • 3 beep/second if distance < 1 meter
Water Leveling	Ultrasonic Sensor	Servo Motor	Tap closed if the water in tank is full.
Health Checking	Temperature Sensor	RGB LED	Check the human normal temperature. <ul style="list-style-type: none"> • LED Green if normal. • LED Red if not normal.
Residential Gate	Ultrasonic Sensor	LCD Monitor	Welcome message when a vehicle pass.
Calculator	Keypad	LCD Monitor	Standard calculator

Pilihan 2 (input ≥ 1 , output > 1)

Examples:

Project Name	Input	Output	Description
Social Distancing	Ultrasonic Sensor	<ol style="list-style-type: none"> Buzzer LCD Monitor 	<ol style="list-style-type: none"> Buzzer turned on in a certain distance. Display the distance.
Water Leveling	Ultrasonic Sensor	<ol style="list-style-type: none"> Servo Motor RGB LED Buzzer 	<ol style="list-style-type: none"> Tap closed if the water in tank is full. Certain color for certain distance. Buzzer on when tank is full.
Health Checking	Temperature Sensor	<ol style="list-style-type: none"> RGB LED LCD Monitor 	<ol style="list-style-type: none"> Check the human normal temperature. Display the value.
Residential Gate	Ultrasonic Sensor	<ol style="list-style-type: none"> LCD Monitor Servo Motor 	<ol style="list-style-type: none"> Welcome message when a vehicle pass. Gate opened.
Calculator	Keypad	<ol style="list-style-type: none"> LCD Monitor RGB LED 	<ol style="list-style-type: none"> Standard calculator Each math operation has different color

Pilihan 3 (multiple input, multiple output)

Examples:

Project Name	Input	Output
Monitoring System	<ol style="list-style-type: none">1. Ultrasonic Sensor2. Temperature Sensor3. PIR Sensor4. Photoresistor	<ol style="list-style-type: none">1. RGB LED2. LCD Monitor3. Buzzer
Hazard Detector	<ol style="list-style-type: none">1. Temperature Sensor2. Gas Sensor3. Photoresistor	<ol style="list-style-type: none">1. Buzzer2. RGB LED3. Servo Motor4. DC Motor
Security Gate	<ol style="list-style-type: none">1. Ultrasonic Sensor2. Temperature Sensor3. Keypad	<ol style="list-style-type: none">1. RGB LED2. LCD Monitor3. Servo Motor4. Buzzer

***Multiple** yang dimaksud adalah **minimal** 3 input, 3 output.

Grading

Penilaian

- Persentase penilaian:
 - Dokumen Laporan (60%)
 - Video (40%)
- Kriteria nilai akhir tugas proyek:
 - Opsi 1: Nilai maksimal = 80
 - Opsi 2: Nilai maksimal = 90
 - Opsi 3: Nilai maksimal = 100
- Setelah mengumpulkan tugas, silakan isi form tentang persentase pembagian tugas antar anggota kelompok.

Pertanyaan?

Terima Kasih