DAFTAR PUSTAKA

Aliman, R., Atiq, A., Haetami, M., Yunitaningrum, W., Tanjungpura (2023). *Tingkat Vo2 Max (Volume Oksigen Maximal) Atlet Sepak Takraw*. *4*. https://jurnal.stokbinaguna.ac.id/index.php/JURDIP

Alwi, I. (2015). Kriteria Empirik Dalam Menentukan Ukuran Sampel Pada Pengujian Hipotesis Statistika Dan Analisis Butir. *Jurnal Formatif 2*, *2*, 140–148.

Ariyanto, A., Puspitasari, N., Nur, D., Universitas, U., & Yogyakarta, A. (2020). AKTIVITAS FISIK TERHADAP KUALITAS HIDUP PADA LANSIA Physical Activity To Quality Of Life In The Elderly. Dalam *Jurnal Kesehatan Al-Irsyad: Vol. XIII* (Nomor 2).

Chen, A., Zhu, J., Lin, Q., & Liu, W. (2022). A Comparative Study of Forehead Temperature and Core Body Temperature under Varying Ambient Temperature Conditions. *International Journal of Environmental Research and Public Health*, *19*(23). https://doi.org/10.3390/ijerph192315883

Chue, A. L., Moore, R. L., Cavey, A., Ashley, E. A., Stepniewska, K., Nosten, F., & McGready, R. (2012). Comparability of tympanic and oral mercury thermometers at high ambient temperatures. *BMC Research Notes*, *5*. https://doi.org/10.1186/1756-0500-5-356

El-Radhi, A. S., & Patel, S. (2006). An evaluation of tympanic thermometry in a paediatric emergency department. *Emergency Medicine Journal*, *23*(1), 40–41. https://doi.org/10.1136/emj.2004.022764

Gasim, G. I., Musa, I. R., Abdien, M. T., & Adam, I. (2013). Accuracy of tympanic temperature measurement using an infrared tympanic membrane thermometer. *BMC Research Notes*. http://www.biomedcentral.com/1756-0500/6/194

Graha, A. S. (2010). Adaptasi Suhu Tubuh terhadap Latihan dan Efek Cedera di Cuaca Panas dan Dingin. *Jurnal Olahraga Prestasi*, *6*, 123–134.

Huang, C., Que, J., Liu, Q., & Zhang, Y. (2021). On the gym air temperature supporting exercise and comfort. *Building and Environment*, *206*. https://doi.org/10.1016/j.buildenv.2021.108313

Huang, J. K., Huang, S. Y., Lee, C. H., Yang, I. F., Yang, T. F., & Wang, Y. M. (2023). Effect of Age on Heart Rate Variability in Patients with Mitral Valve Prolapse: An Observational Study. *Journal of Clinical Medicine*, *12*(1). https://doi.org/10.3390/jcm12010165

Hymczak, H., Gołąb, A., Mendrala, K., Plicner, D., Darocha, T., Podsiadło, P., Hudziak, D., Gocoł, R., & Kosiński, S. (2021). Core temperature measurement—principles of correct measurement, problems, and complications. *International Journal of Environmental Research and Public Health*, *18*(20). https://doi.org/10.3390/ijerph182010606

Indrayana, B., & Yuliawan, E. (2019). *Pentingnya Peningkatan Vo2max Guna Meningkatkan Kondisi Fisik*.

Ismunarti, D. H., Zainuri, M., Sugianto, D. N., & Saputra, S. W. (2020). Pengujian Reliabilitas Instrumen Terhadap Variabel Kontinu Untuk Pengukuran Konsentrasi Klorofil- A Perairan. *Buletin Oseanografi Marina*, *9*(1), 1–8. https://doi.org/10.14710/buloma.v9i1.23924

Jensen-Urstad, K., Storck, N., Bouvier, F., Ericson, M., Lindblad, L. E., & Jensen-Urstad, M. (1997). Heart rate variability in healthy subjects is related to age and gender. *Acta Physiologica Scandinavica*, *160*(3), 235–241. https://doi.org/10.1046/j.1365-201X.1997.00142.x

Joo-Young, L., Kouhei, N., Naoki, T., Su-Young, S., Bakri, I., & Yutaka, T. (2011). Validity of Infrared Tympanic Temperature for the Evaluation of Heat Strain While Wearing Impermeable Protective Clothing in Hot Environments. *Industrial Health*, *49*(INFRARED TYMPANIC TEMPERATURE AND HEAT STRAIN), 714–725.

Kadek, I., Erawan, A., Made, I., Mahardiananta, A., & Dharmayanti, C. I. (2023). Rancang Bangun Termometer Real Time Berbasis Internet of Things. *KONVERGENSI*, *19*(1), 1–8.

Kukus, Y., Supit, W., Lintong, F., Fisika, B., Kedokteran, F., Sam, U., & Manado, R. (2009). SUHU TUBUH: HOMEOSTASIS DAN EFEK TERHADAP KINERJA TUBUH MANUSIA. *Jurnal Biomedik*, *1*, 107–118.

Leduc, D., Woods, S., & Community Paediatrics Commitee. (2000). Temperature measurement in paediatrics. *Paediatr Child Health*, *5*, 273–276.

Mintarto, E., & Fattahilah, M. (2019). EFEK SUHU LINGKUNGAN TERHADAP FISIOLOGI TUBUH PADA SAAT MELAKUKAN LATIHAN OLAHRAGA. *Journal of Sport and Exercise Science*, *2*(1), 9–13. https://journal.unesa.ac.id/index.php/jses

Nengah Sandi, I., Gede Ariyasa, I., Wayan Teresna, I., Ashadi, K., Ilmu Kesehatan, F., Teknologi, dan, Dhyana Pura, U., & Negeri Bali, P. (2017). PENGARUH KELEMBABAN RELATIF TERHADAP PERUBAHAN SUHU TUBUH LATIHAN. *Sport and Fitness Journal*, *5*(1), 103–109.

No, M., & Kwak, H.-B. (2016). Effects of environmental temperature on physiological responses during submaximal and maximal exercises in soccer players. *Integrative Medicine Research*, *5*(3), 216–222. https://doi.org/10.1016/j.imr.2016.06.002

Odor, P. M., Bampoe, S., & Cecconi, M. (2017). Cardiac Output Monitoring: Validation Studies–how Results Should be Presented. *Current Anesthesiology Reports*, *7*(4), 410–415. https://doi.org/10.1007/s40140-017-0239-0

Prasetyo, A. V. I., & Qomarun. (2023). EVALUASI KENYAMANAN TERMAL PADA BANGUNAN KLINIK SAINTIFIKASI JAMU “HORTUS MEDICUS” TAWANGMANGU. *Seminar Ilmiah Arsitektur*. http://siar.ums.ac.id/

Prawiyogi, A. G., Sadiah, T. L., Purwanugraha, A., & Elisa, P. N. (2021). Penggunaan Media Big Book untuk Menumbuhkan Minat Membaca di Sekolah Dasar. *Jurnal Basicedu*, *5*(1), 446–452. https://doi.org/10.31004/basicedu.v5i1.787

Rosanti, N. M., Rahardjo, D. T., & Harjunowibowo, D. (2022). Pengembangan Alat Ukur Suhu Contact Less Thermogun Berbasis IOT Menggunakan Aplikasi BLYNK Sebagai Alat Ukur Suhu Di Era Covid-19. *Jurnal Materi dan Pembelajaran Fisika*, *12*(1), 35. https://doi.org/10.20961/jmpf.v12i1.60399

Rowland, T. (2008). First published December 13. *Invited Review HIGHLIGHTED TOPIC Biology of Physical Activity in Youth J Appl Physiol*, *105*, 718–724. https://doi.org/10.1152/japplphysiol.01196.2007.-Children

Sasna Junaidi, N., Daruwati, I., Febriani, Y., & Genesa Hatika, R. (2018). KETERKAITAN FISIKA DALAM PEMBELAJARAN SISTEM ADAPTASI TUBUH MANUSIA TERHADAP PERUBAHAN SUHU THE RELATION OF PHYSICS LEARNING IN HUMAN BODY SYSTEM OF ADAPTATION TO CHANGES IN TEMPERATURE. Dalam *Collaborative Medical Journal (CMJ)* (Vol. 1).

T. Balachandran, A., Wang, Y., Szabo, F., Watts-Battey, C., Schoenfeld, B. J., Zenko, Z., & Quiles, N. (2023). Comparison of traditional vs. lighter load strength training on fat-free mass, strength, power and affective responses in middle and older-aged adults: A pilot randomized trial. *Experimental Gerontology*, *178*. https://doi.org/10.1016/j.exger.2023.112219

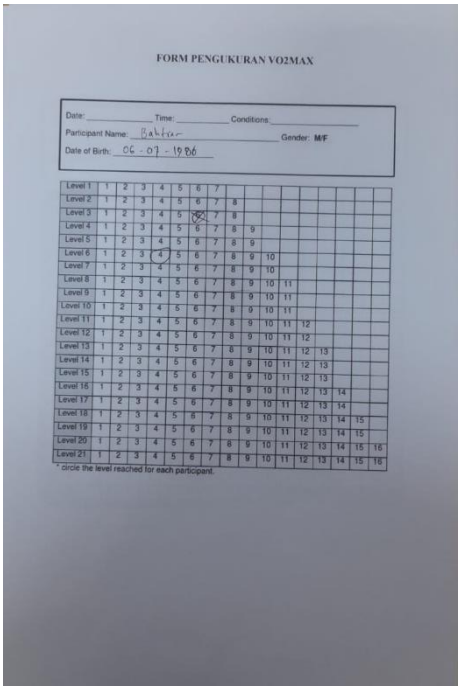
Yeoh, W. K., Lee, J. K. W., Lim, H. Y., Gan, C. W., Liang, W., & Tan, K. K. (2017). Re-visiting the tympanic membrane vicinity as core body temperature measurement site. *PLoS ONE*, *12*(4). https://doi.org/10.1371/journal.pone.0174120

Yunita Widodo, L., Sri Hanani, E., Pendidikan Jasmani Kesehatan dan Rekreasi, J., & Ilmu Keolahragaan, F. (2021). *Indonesian Journal for Physical Education and Sport Profil VO2Max Peserta Ekstrakurikuler Olahraga Bolabasket di SMA Negeri 3 Kota Tegal Article History*. http://journal.unnes.ac.id/sju/index.php/peshr

Zaki, R. (2017). Validation of Instrument Measuring Continuous Variable in Medicine. Dalam *Advances in Statistical Methodologies and Their Application to Real Problems*. InTech. https://doi.org/10.5772/66151

LAMPIRAN

Lampiran 1. Hasil VO2max responden



FORM PENGUKURAN VO2MAX

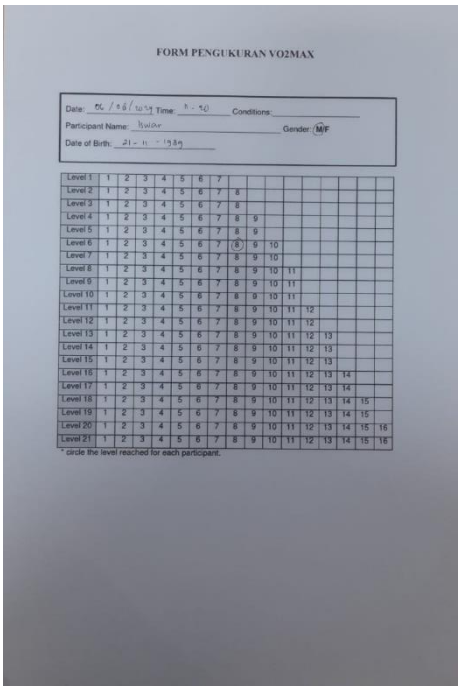
Date: _____ Time: _____ Conditions: _____

Participant Name: Bahtiar Gender: M/F

Date of Birth: 06-07-1986

Level 1	1	2	3	4	5	6	7								
Level 2	1	2	3	4	5	6	7	8							
Level 3	1	2	3	4	5	6	7	8							
Level 4	1	2	3	4	5	6	7	8	9						
Level 5	1	2	3	4	5	6	7	8	9						
Level 6	1	2	3	4	5	6	7	8	9	10					
Level 7	1	2	3	4	5	6	7	8	9	10					
Level 8	1	2	3	4	5	6	7	8	9	10	11				
Level 9	1	2	3	4	5	6	7	8	9	10	11				
Level 10	1	2	3	4	5	6	7	8	9	10	11				
Level 11	1	2	3	4	5	6	7	8	9	10	11	12			
Level 12	1	2	3	4	5	6	7	8	9	10	11	12			
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

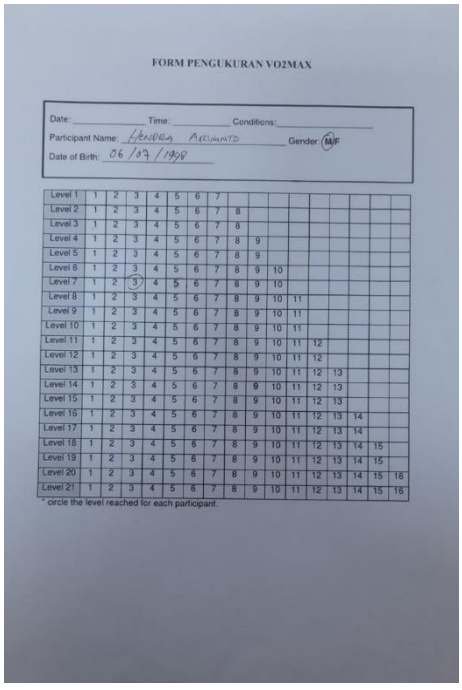
Date: 06/08/2019 Time: 11.40 Conditions: _____

Participant Name: Nuar Gender: M/F

Date of Birth: 21-11-1989

Level 1	1	2	3	4	5	6	7								
Level 2	1	2	3	4	5	6	7	8							
Level 3	1	2	3	4	5	6	7	8							
Level 4	1	2	3	4	5	6	7	8	9						
Level 5	1	2	3	4	5	6	7	8	9						
Level 6	1	2	3	4	5	6	7	8	9	10					
Level 7	1	2	3	4	5	6	7	8	9	10					
Level 8	1	2	3	4	5	6	7	8	9	10	11				
Level 9	1	2	3	4	5	6	7	8	9	10	11				
Level 10	1	2	3	4	5	6	7	8	9	10	11				
Level 11	1	2	3	4	5	6	7	8	9	10	11	12			
Level 12	1	2	3	4	5	6	7	8	9	10	11	12			
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

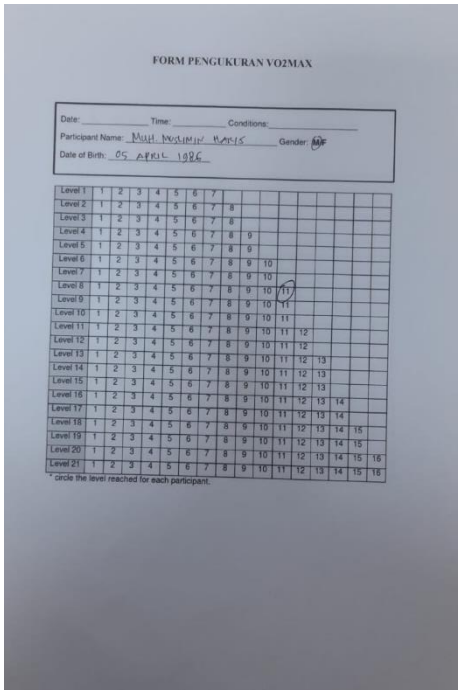
Date: _____ Time: _____ Conditions: _____

Participant Name: LANDRA ARIYANTO Gender: M/F

Date of Birth: 06/07/1998

Level 1	1	2	3	4	5	6	7								
Level 2	1	2	3	4	5	6	7	8							
Level 3	1	2	3	4	5	6	7	8							
Level 4	1	2	3	4	5	6	7	8	9						
Level 5	1	2	3	4	5	6	7	8	9						
Level 6	1	2	3	4	5	6	7	8	9	10					
Level 7	1	2	3	4	5	6	7	8	9	10					
Level 8	1	2	3	4	5	6	7	8	9	10	11				
Level 9	1	2	3	4	5	6	7	8	9	10	11				
Level 10	1	2	3	4	5	6	7	8	9	10	11				
Level 11	1	2	3	4	5	6	7	8	9	10	11	12			
Level 12	1	2	3	4	5	6	7	8	9	10	11	12			
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

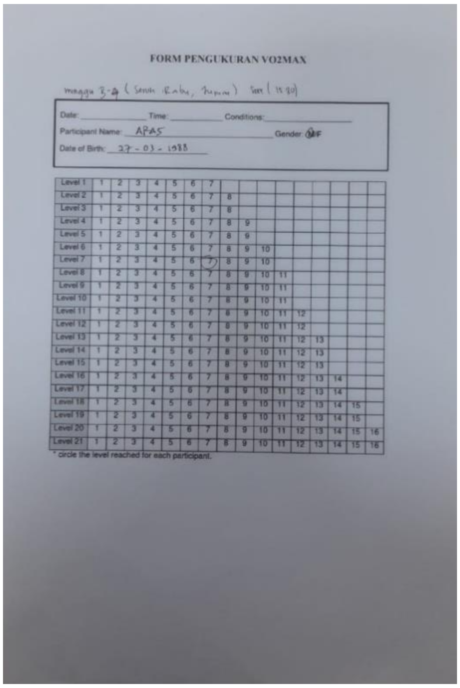
Date: _____ Time: _____ Conditions: _____

Participant Name: MUH. MUSLIMIN MAMIS Gender: M/F

Date of Birth: 05 APRIL 1986

Level 1	1	2	3	4	5	6	7								
Level 2	1	2	3	4	5	6	7	8							
Level 3	1	2	3	4	5	6	7	8							
Level 4	1	2	3	4	5	6	7	8	9						
Level 5	1	2	3	4	5	6	7	8	9						
Level 6	1	2	3	4	5	6	7	8	9	10					
Level 7	1	2	3	4	5	6	7	8	9	10					
Level 8	1	2	3	4	5	6	7	8	9	10	11				
Level 9	1	2	3	4	5	6	7	8	9	10	11				
Level 10	1	2	3	4	5	6	7	8	9	10	11				
Level 11	1	2	3	4	5	6	7	8	9	10	11	12			
Level 12	1	2	3	4	5	6	7	8	9	10	11	12			
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

minggu 3-4 (Senin, Rabu, Jumat) Sore (15.30)

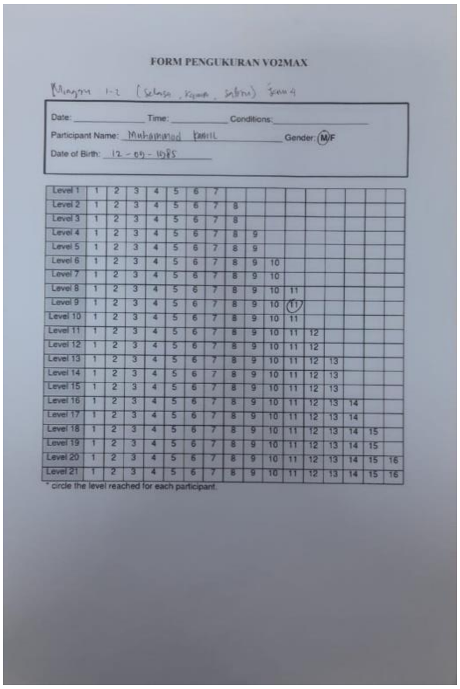
Date: ______ Time: ______ Conditions: ______

Participant Name: APAS Gender: M/F

Date of Birth: 27 - 03 - 1988

Level 1	1	2	3	4	5	6	7									
Level 2	1	2	3	4	5	6	7	8								
Level 3	1	2	3	4	5	6	7	8								
Level 4	1	2	3	4	5	6	7	8	9							
Level 5	1	2	3	4	5	6	7	8	9							
Level 6	1	2	3	4	5	6	7	8	9	10						
Level 7	1	2	3	4	5	6	7	8	9	10						
Level 8	1	2	3	4	5	6	7	8	9	10	11					
Level 9	1	2	3	4	5	6	7	8	9	10	11					
Level 10	1	2	3	4	5	6	7	8	9	10	11					
Level 11	1	2	3	4	5	6	7	8	9	10	11	12				
Level 12	1	2	3	4	5	6	7	8	9	10	11	12				
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

Minggu 1-2 (Selasa, Kamis, Sabtu) Sore

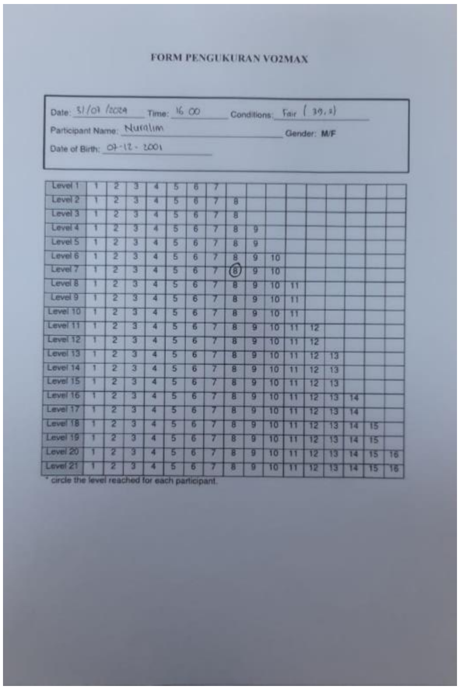
Date: ______ Time: ______ Conditions: ______

Participant Name: Muhammad Kamil Gender: M/F

Date of Birth: 12 - 09 - 1985

Level 1	1	2	3	4	5	6	7									
Level 2	1	2	3	4	5	6	7	8								
Level 3	1	2	3	4	5	6	7	8								
Level 4	1	2	3	4	5	6	7	8	9							
Level 5	1	2	3	4	5	6	7	8	9							
Level 6	1	2	3	4	5	6	7	8	9	10						
Level 7	1	2	3	4	5	6	7	8	9	10						
Level 8	1	2	3	4	5	6	7	8	9	10	11					
Level 9	1	2	3	4	5	6	7	8	9	10	11					
Level 10	1	2	3	4	5	6	7	8	9	10	11					
Level 11	1	2	3	4	5	6	7	8	9	10	11	12				
Level 12	1	2	3	4	5	6	7	8	9	10	11	12				
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

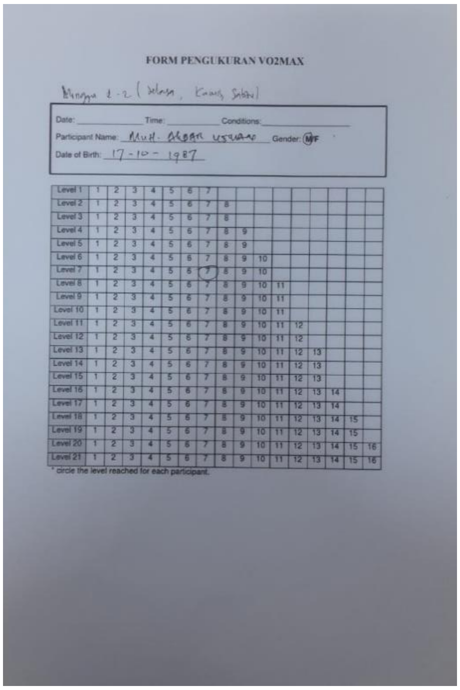
Date: 31/07/2024 Time: 16.00 Conditions: Fair (39,2)

Participant Name: Nuralim Gender: M/F

Date of Birth: 07-12-2001

Level 1	1	2	3	4	5	6	7									
Level 2	1	2	3	4	5	6	7	8								
Level 3	1	2	3	4	5	6	7	8								
Level 4	1	2	3	4	5	6	7	8	9							
Level 5	1	2	3	4	5	6	7	8	9							
Level 6	1	2	3	4	5	6	7	8	9	10						
Level 7	1	2	3	4	5	6	7	8	9	10						
Level 8	1	2	3	4	5	6	7	8	9	10	11					
Level 9	1	2	3	4	5	6	7	8	9	10	11					
Level 10	1	2	3	4	5	6	7	8	9	10	11					
Level 11	1	2	3	4	5	6	7	8	9	10	11	12				
Level 12	1	2	3	4	5	6	7	8	9	10	11	12				
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

Minggu 1-2 (Selasa, Kamis, Sabtu)

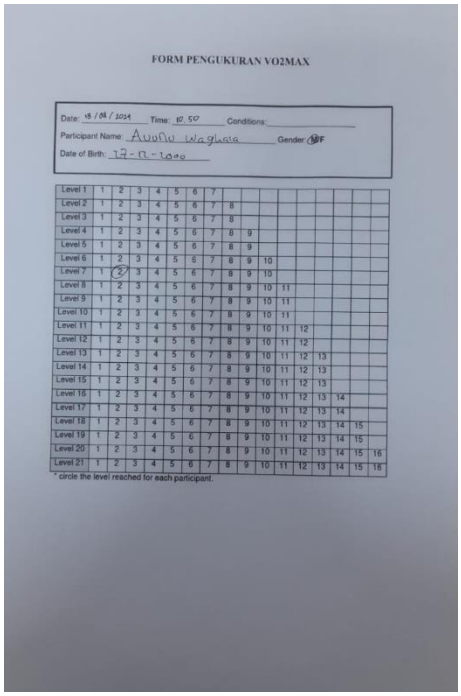
Date: ______ Time: ______ Conditions: ______

Participant Name: MUH. AKBAR USMAN Gender: M/F

Date of Birth: 17 - 10 - 1987

Level 1	1	2	3	4	5	6	7									
Level 2	1	2	3	4	5	6	7	8								
Level 3	1	2	3	4	5	6	7	8								
Level 4	1	2	3	4	5	6	7	8	9							
Level 5	1	2	3	4	5	6	7	8	9							
Level 6	1	2	3	4	5	6	7	8	9	10						
Level 7	1	2	3	4	5	6	7	8	9	10						
Level 8	1	2	3	4	5	6	7	8	9	10	11					
Level 9	1	2	3	4	5	6	7	8	9	10	11					
Level 10	1	2	3	4	5	6	7	8	9	10	11					
Level 11	1	2	3	4	5	6	7	8	9	10	11	12				
Level 12	1	2	3	4	5	6	7	8	9	10	11	12				
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

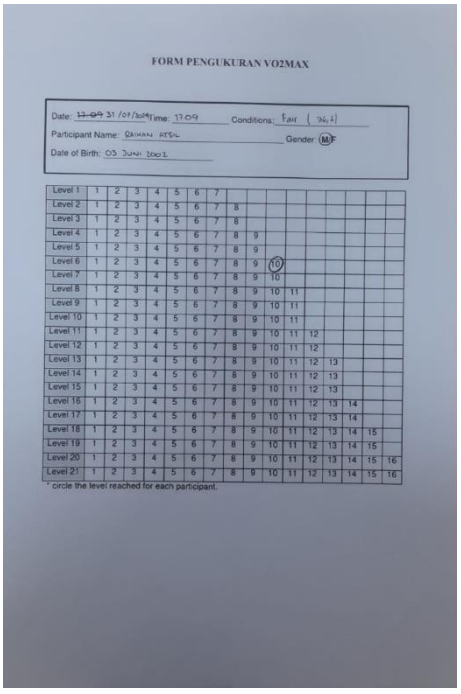
Date: 18 / 04 / 2024 Time: 10.50 Conditions:

Participant Name: Auqilu Waghsila Gender: (M)F

Date of Birth: 17-12-2000

Level 1	1	2	3	4	5	6	7								
Level 2	1	2	3	4	5	6	7	8							
Level 3	1	2	3	4	5	6	7	8							
Level 4	1	2	3	4	5	6	7	8	9						
Level 5	1	2	3	4	5	6	7	8	9						
Level 6	1	2	3	4	5	6	7	8	9	10					
Level 7	1	(2)	3	4	5	6	7	8	9	10					
Level 8	1	2	3	4	5	6	7	8	9	10	11				
Level 9	1	2	3	4	5	6	7	8	9	10	11				
Level 10	1	2	3	4	5	6	7	8	9	10	11				
Level 11	1	2	3	4	5	6	7	8	9	10	11	12			
Level 12	1	2	3	4	5	6	7	8	9	10	11	12			
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

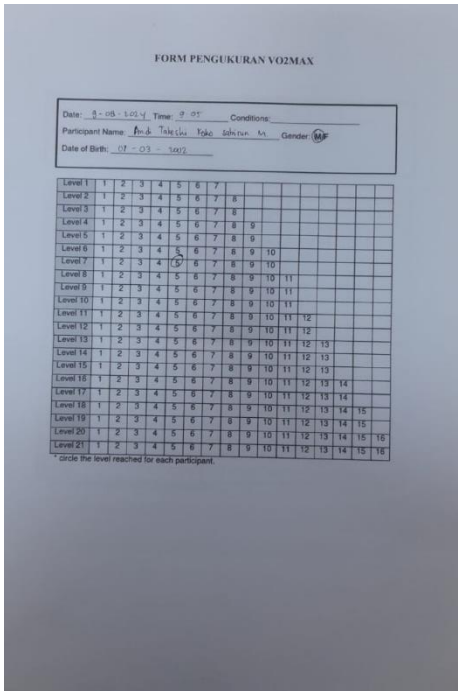
Date: ~~17-09~~ 31/07/2024 Time: 17.09 Conditions: Fair (26,4)

Participant Name: RAIHAN AFSL Gender: (M)F

Date of Birth: 03 JUNI 2002

Level 1	1	2	3	4	5	6	7								
Level 2	1	2	3	4	5	6	7	8							
Level 3	1	2	3	4	5	6	7	8							
Level 4	1	2	3	4	5	6	7	8	9						
Level 5	1	2	3	4	5	6	7	8	9						
Level 6	1	2	3	4	5	6	7	8	9	(10)					
Level 7	1	2	3	4	5	6	7	8	9	10					
Level 8	1	2	3	4	5	6	7	8	9	10	11				
Level 9	1	2	3	4	5	6	7	8	9	10	11				
Level 10	1	2	3	4	5	6	7	8	9	10	11				
Level 11	1	2	3	4	5	6	7	8	9	10	11	12			
Level 12	1	2	3	4	5	6	7	8	9	10	11	12			
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

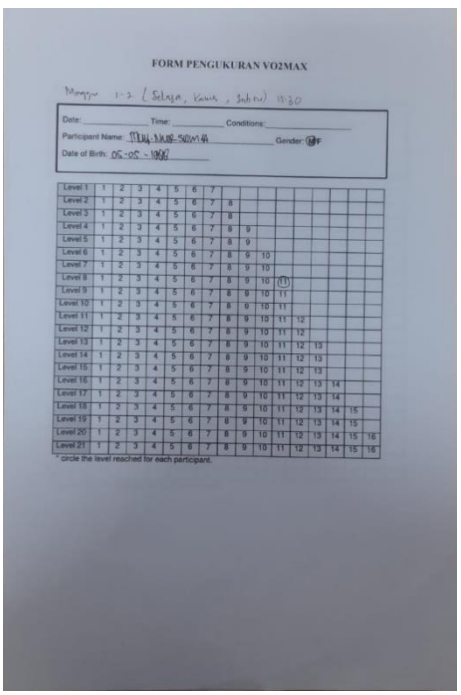
Date: 9-08-2024 Time: 9.05 Conditions:

Participant Name: Andi Taufiq Pako Sahrun M Gender: (M)F

Date of Birth: 07-03-2002

Level 1	1	2	3	4	5	6	7								
Level 2	1	2	3	4	5	6	7	8							
Level 3	1	2	3	4	5	6	7	8							
Level 4	1	2	3	4	5	6	7	8	9						
Level 5	1	2	3	4	5	6	7	8	9						
Level 6	1	2	3	4	(5)	6	7	8	9	10					
Level 7	1	2	3	4	(5)	6	7	8	9	10					
Level 8	1	2	3	4	5	6	7	8	9	10	11				
Level 9	1	2	3	4	5	6	7	8	9	10	11				
Level 10	1	2	3	4	5	6	7	8	9	10	11				
Level 11	1	2	3	4	5	6	7	8	9	10	11	12			
Level 12	1	2	3	4	5	6	7	8	9	10	11	12			
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.



FORM PENGUKURAN VO2MAX

Minggu 1-7 (Selasa, Kamis, Sabtu) 15.30

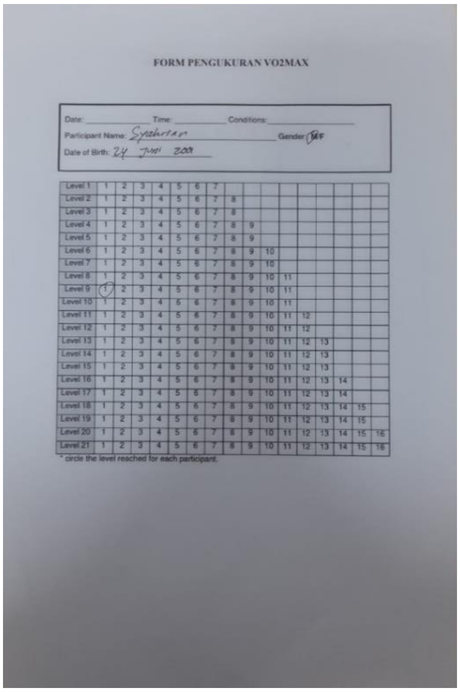
Date: Time: Conditions:

Participant Name: MUH. IKHSAN SUDIRMAN Gender: (M)F

Date of Birth: 05-05-2000

Level 1	1	2	3	4	5	6	7								
Level 2	1	2	3	4	5	6	7	8							
Level 3	1	2	3	4	5	6	7	8							
Level 4	1	2	3	4	5	6	7	8	9						
Level 5	1	2	3	4	5	6	7	8	9						
Level 6	1	2	3	4	5	6	7	8	9	10					
Level 7	1	2	3	4	5	6	7	8	9	10					
Level 8	1	2	3	4	5	6	7	8	9	10	(11)				
Level 9	1	2	3	4	5	6	7	8	9	10	11				
Level 10	1	2	3	4	5	6	7	8	9	10	11				
Level 11	1	2	3	4	5	6	7	8	9	10	11	12			
Level 12	1	2	3	4	5	6	7	8	9	10	11	12			
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13		
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.

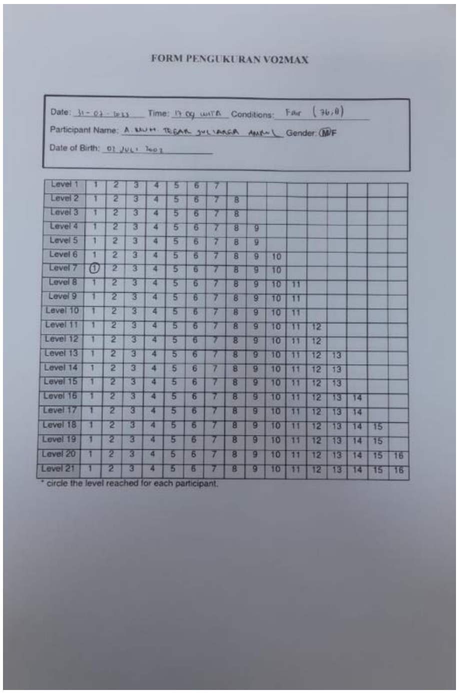


FORM PENGUKURAN VO2MAX

Date: ______ Time: ______ Conditions: ______
Participant Name: Syahrian Gender: (M)/F
Date of Birth: 24 Juni 2001

Level 1	1	2	3	4	5	6	7									
Level 2	1	2	3	4	5	6	7	8								
Level 3	1	2	3	4	5	6	7	8								
Level 4	1	2	3	4	5	6	7	8	9							
Level 5	1	2	3	4	5	6	7	8	9							
Level 6	1	2	3	4	5	6	7	8	9	10						
Level 7	1	2	3	4	5	6	7	8	9	10						
Level 8	1	2	3	4	5	6	7	8	9	10	11					
Level 9	(1)	2	3	4	5	6	7	8	9	10	11					
Level 10	1	2	3	4	5	6	7	8	9	10	11					
Level 11	1	2	3	4	5	6	7	8	9	10	11	12				
Level 12	1	2	3	4	5	6	7	8	9	10	11	12				
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.

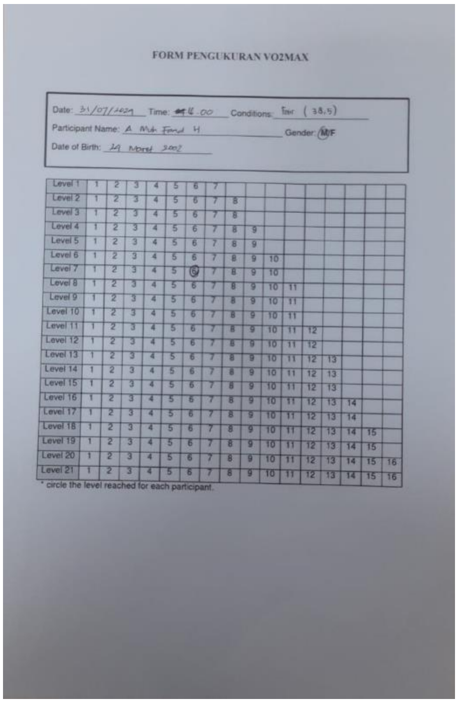


FORM PENGUKURAN VO2MAX

Date: 31-07-2023 Time: 17.09 WITA Conditions: Fair (36,0)
Participant Name: A MUH TEGAR JULIANGGA AMRUL Gender: (M)/F
Date of Birth: 07 JULI 2003

Level 1	1	2	3	4	5	6	7									
Level 2	1	2	3	4	5	6	7	8								
Level 3	1	2	3	4	5	6	7	8								
Level 4	1	2	3	4	5	6	7	8	9							
Level 5	1	2	3	4	5	6	7	8	9							
Level 6	1	2	3	4	5	6	7	8	9	10						
Level 7	(1)	2	3	4	5	6	7	8	9	10						
Level 8	1	2	3	4	5	6	7	8	9	10	11					
Level 9	1	2	3	4	5	6	7	8	9	10	11					
Level 10	1	2	3	4	5	6	7	8	9	10	11					
Level 11	1	2	3	4	5	6	7	8	9	10	11	12				
Level 12	1	2	3	4	5	6	7	8	9	10	11	12				
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.

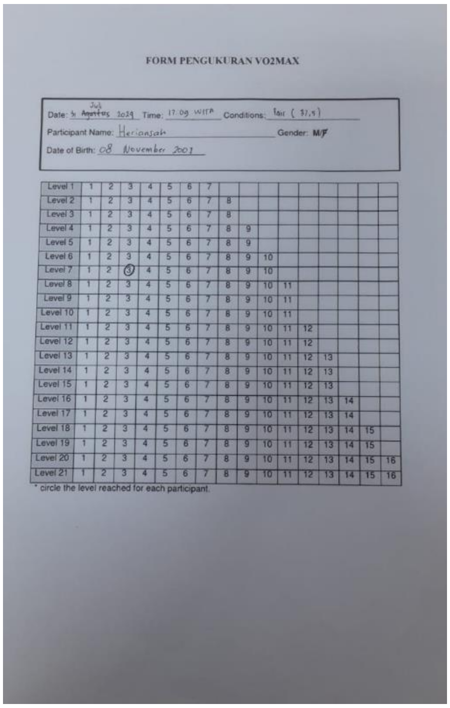


FORM PENGUKURAN VO2MAX

Date: 31/07/2024 Time: ~~17~~ 16.00 Conditions: Fair (38,5)
Participant Name: A Muh Farid H Gender: (M)/F
Date of Birth: 29 Maret 2002

Level 1	1	2	3	4	5	6	7									
Level 2	1	2	3	4	5	6	7	8								
Level 3	1	2	3	4	5	6	7	8								
Level 4	1	2	3	4	5	6	7	8	9							
Level 5	1	2	3	4	5	6	7	8	9							
Level 6	1	2	3	4	5	6	7	8	9	10						
Level 7	1	2	3	4	5	(6)	7	8	9	10						
Level 8	1	2	3	4	5	6	7	8	9	10	11					
Level 9	1	2	3	4	5	6	7	8	9	10	11					
Level 10	1	2	3	4	5	6	7	8	9	10	11					
Level 11	1	2	3	4	5	6	7	8	9	10	11	12				
Level 12	1	2	3	4	5	6	7	8	9	10	11	12				
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* circle the level reached for each participant.



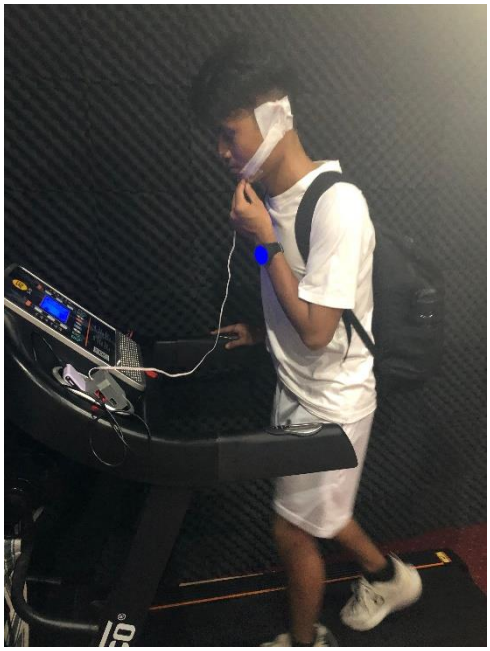
FORM PENGUKURAN VO2MAX

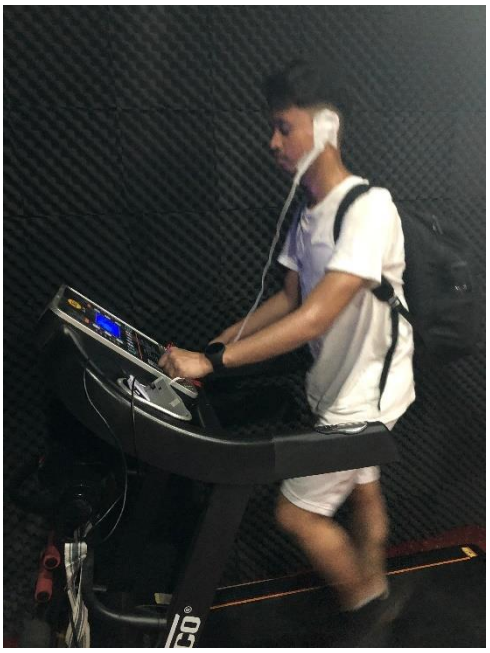
Date: 31 ~~Agustus~~ Juli 2024 Time: 17.09 WITA Conditions: fair (37,5)
Participant Name: Heriansah Gender: M/F
Date of Birth: 08 November 2001

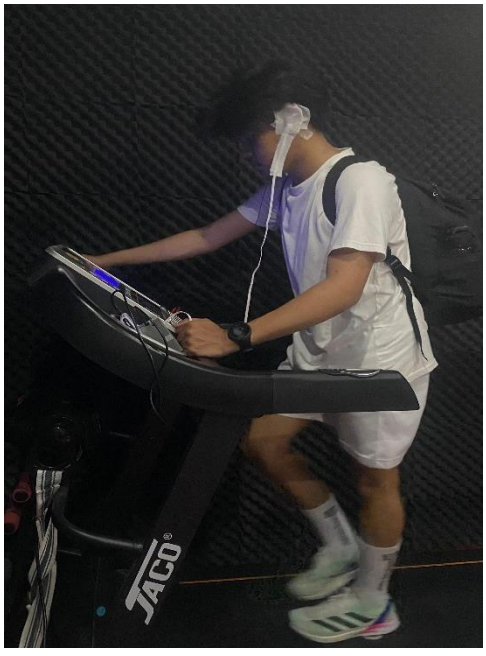
Level 1	1	2	3	4	5	6	7									
Level 2	1	2	3	4	5	6	7	8								
Level 3	1	2	3	4	5	6	7	8								
Level 4	1	2	3	4	5	6	7	8	9							
Level 5	1	2	3	4	5	6	7	8	9							
Level 6	1	2	3	4	5	6	7	8	9	10						
Level 7	1	2	(3)	4	5	6	7	8	9	10						
Level 8	1	2	3	4	5	6	7	8	9	10	11					
Level 9	1	2	3	4	5	6	7	8	9	10	11					
Level 10	1	2	3	4	5	6	7	8	9	10	11					
Level 11	1	2	3	4	5	6	7	8	9	10	11	12				
Level 12	1	2	3	4	5	6	7	8	9	10	11	12				
Level 13	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 14	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 15	1	2	3	4	5	6	7	8	9	10	11	12	13			
Level 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Level 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Level 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

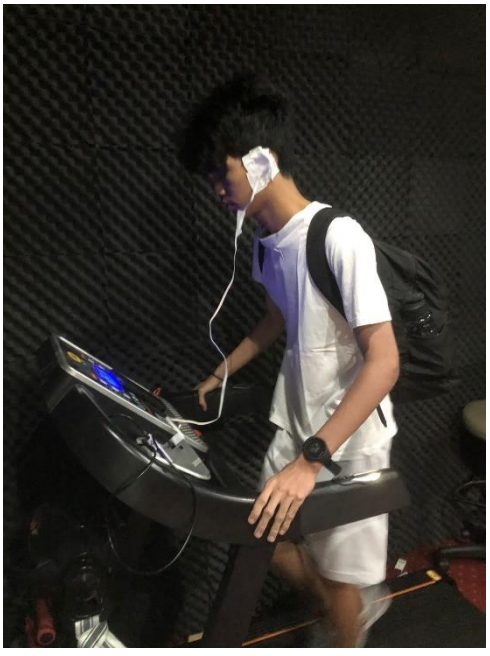
* circle the level reached for each participant.

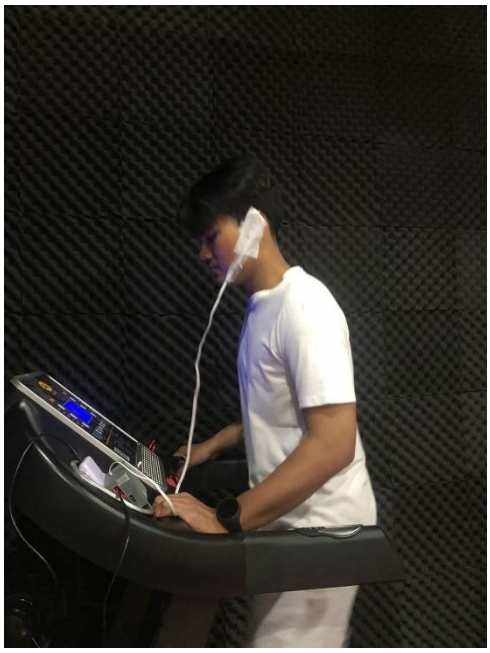
Lampiran 2 Dokumentasi pengambilan data

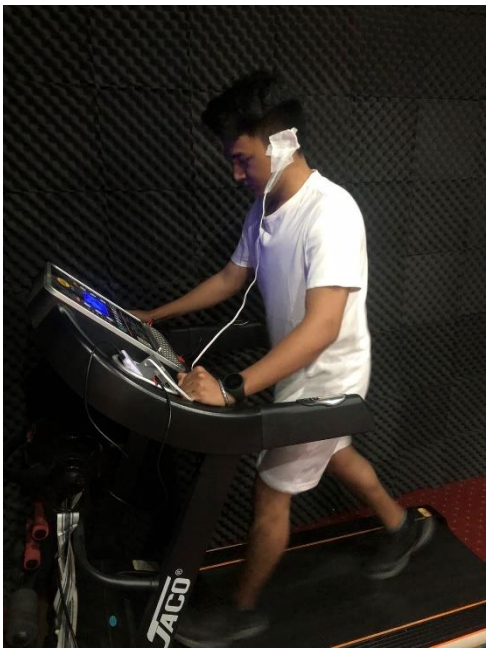




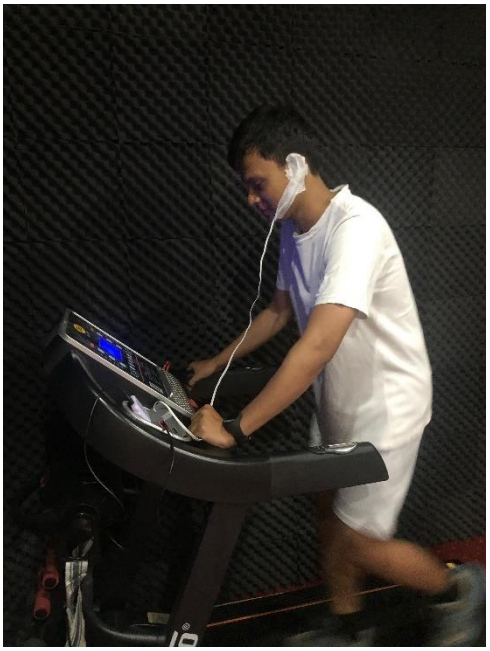


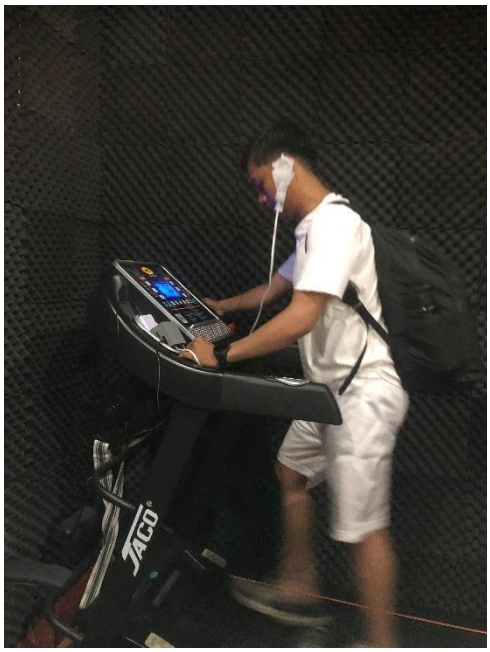







JACO

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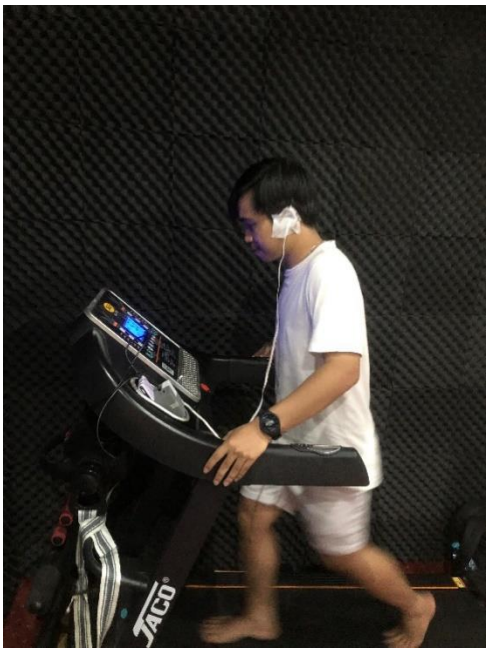
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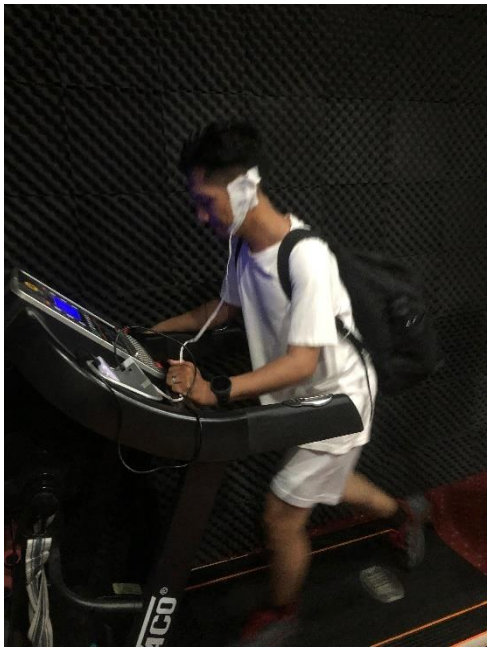
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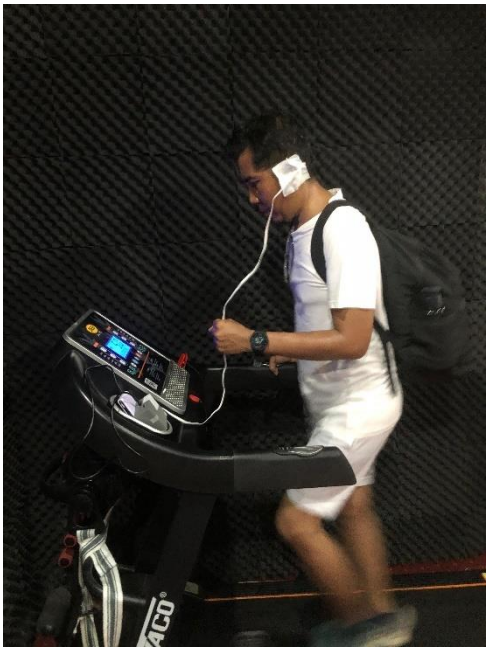
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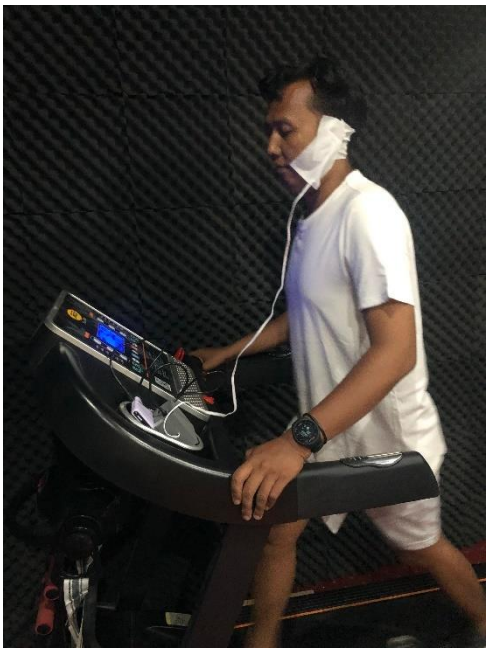

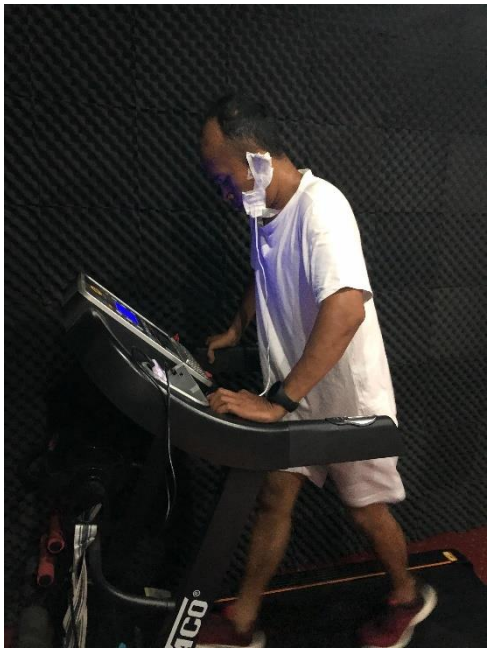

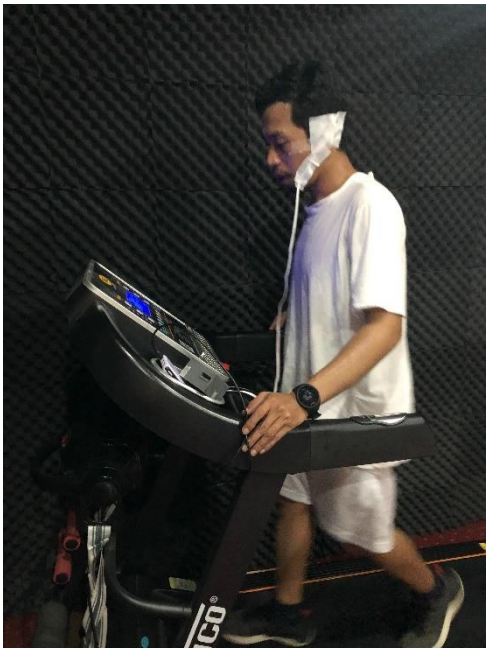

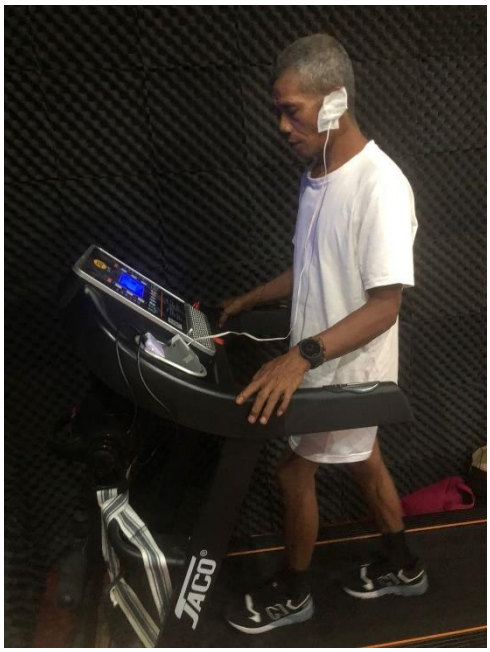
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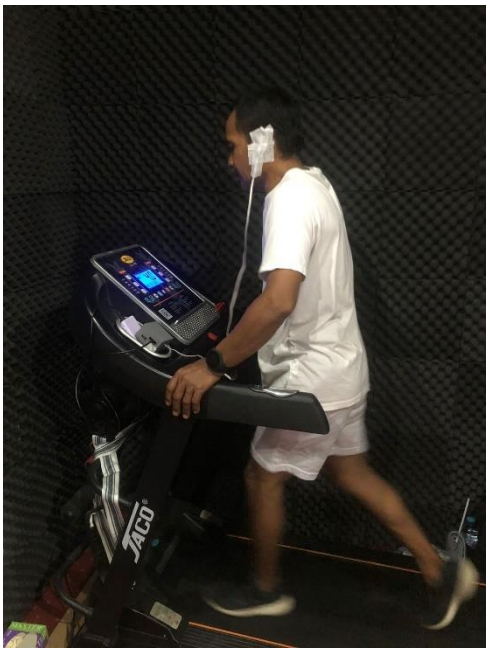
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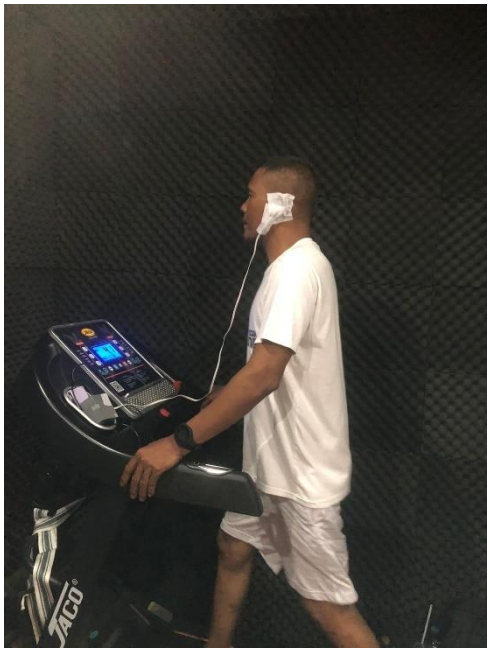
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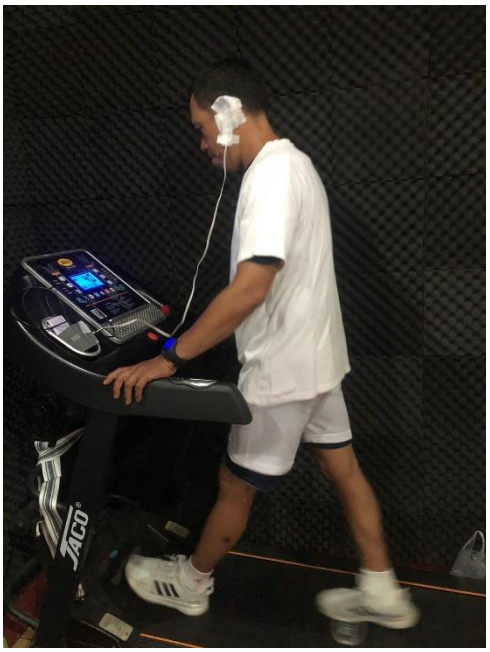
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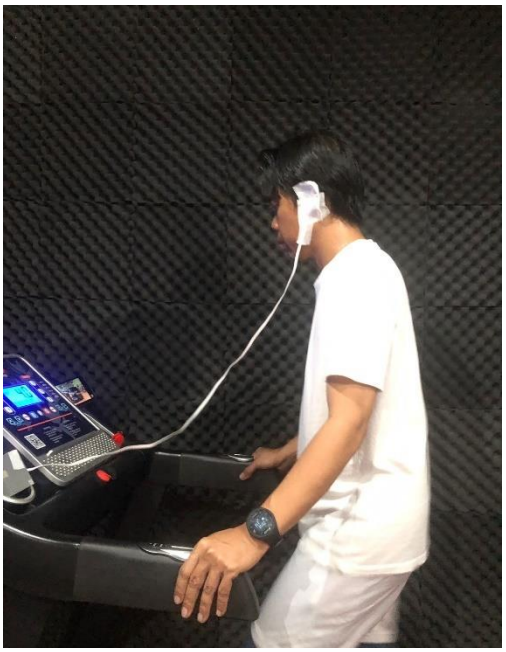

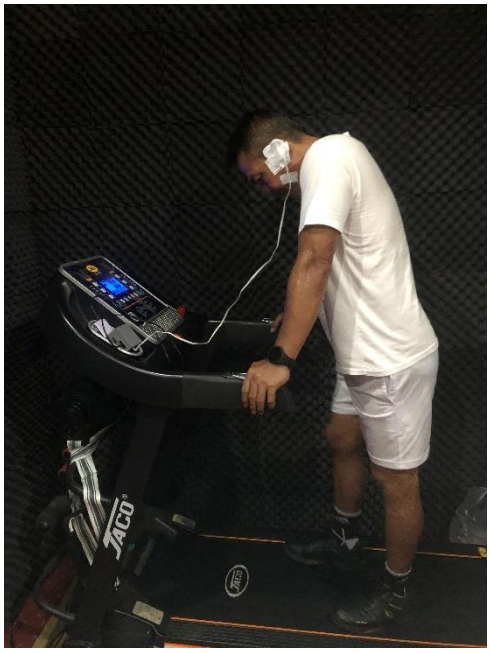
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Lampiran 3. Dataset chip MLX90614

Melexis
Microelectronic Integrated Systems

MLX90614 family

Single and Dual Zone
Infra Red Thermometer in TO-39

Features and Benefits

- Small size, low cost
- Easy to integrate
- Factory calibrated in wide temperature range:
  -40 to 125 °C for sensor temperature and
  -70 to 380 °C for object temperature.
- High accuracy of 0.5°C over wide temperature range (0..+50°C for both Ta and To)
- High (medical) accuracy calibration optional
- Measurement resolution of 0.02°C
- Single and dual zone versions
- SMBus compatible digital interface
- Customizable PWM output for continuous reading
- Available in 3V and 5V versions
- Simple adaptation for 8 to 16V applications
- Power saving mode
- Different package options for applications and measurements versatility
- Automotive grade

Applications Examples

- High precision non-contact temperature measurements;
- Thermal Comfort sensor for Mobile Air Conditioning control system;
- Temperature sensing element for residential, commercial and industrial building air conditioning;
- Windshield defogging;
- Automotive blind angle detection;
- Industrial temperature control of moving parts;
- Temperature control in printers and copiers;
- Home appliances with temperature control;
- Healthcare;
- Livestock monitoring;
- Movement detection;
- Multiple zone temperature control – up to 100 sensors can be read via common 2 wires
- Thermal relay/alert
- Body temperature measurement

Ordering Information

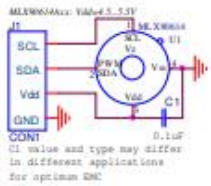
Part No. MLX90614 X X X
(1) (2) (3)

(1) Supply Voltage:
A - 5V power (adaptable for 12V)
B - 3V power

(2) Number of thermopiles:
A – single zone
B – dual zone

(3) Package type:
A – Filter inside
B – Filter outside

1 Functional diagram



MLX90614 connection to SMBus

Figure 1 Typical application schematics

2 General Description

The MLX90614 is an Infra Red thermometer for non contact temperature measurements. Both the IR sensitive thermopile detector chip and the signal conditioning ASSP are integrated in the same TO-39 can.
Thanks to its low noise amplifier, 17-bit ADC and powerful DSP unit, a high accuracy and resolution of the thermometer is achieved.
The thermometer comes factory calibrated with a digital PWM and SMBus output.
As a standard, the 10-bit PWM is configured to continuously transmit the measured temperature in range of -20 to 120 °C, with an output resolution of 0.14 °C.
The POR default is SMBus interface

Lampiran 4. Rata-Rata Suhu dan Kelembapan Ruangan