TC Merch

Quality Management Plan

C05

Muh. Nur Fajrin A.	05111940000005
Faisal Reza M.	05111940000009
Cahyadesthian R. W.	05111940000156
Rihan Farih B.	05111940000165

Departemen Teknik Informatika

Fakultas Teknologi Elektro dan Informatika Cerdas

Institut Teknologi Sepuluh Nopember

2021/2022

DOCUMENT CONTROL

INFORMASI DOKUMEN

	Informasi
Id Dokumen	Dokumen Manajemen Kualitas #1
Pemilik Dokumen	Kelompok C05
Tanggal Rilis	24 Oktober 2021
Tanggal Penyimpanan Terakhir	26 Oktober 2021
Nama File	Dokumen Manajemen Kualitas C05

RIWAYAT DOKUMEN

Versi	Tanggal RIlis	Perubahan
[1.0]	26 Oktober 2021	Keseluruhan Dokumen

PENGESAHAN DOKUMEN

Peran	Nama	Tanda Tangan	Tanggal
Project Sponsor	Muhammad Rivadhli Purnomo		
Project Review Group	Sarwosri, S.Kom. M.T		
Project Manager	Cahyadesthian R. W.		
Quality Manager	Rihan Farih Bunyamin		
Procurement Manager	Faisal Reza M.		
Communications Manager	Muh. Nur Fajrin A.		
Project Office Manager	Sarwosri, S.Kom. M.T		

Daftar Isi

STANDAR KUALITAS

Dalam proses pemantauan kualitas terhadap pengembangan proyek pembuatan TCMerch, akan digunakan ISO/IEC 9126. ISO 9126 adalah standar evaluasi yang telah diakui secara internasional dalam mengevaluasi sebuah perangkat lunak dari sisi *software engineering*. Model ini dipandang sebagai standar yang pengukurannya cukup valid, *reliable* dan efisien dalam mengukur kualitas dari sebuah perangkat lunak. Karakteristik yang terdapat pada ISO/IEC 9126 dilihat mampu memberikan tolak ukur yang baik dalam mengevaluasi website TC Merch nantinya. Evaluasi difokuskan pada bidang efektivitas, produktivitas, keamanan, dan Kepuasan. Gambar berikut menunjukkan metriks dari keempat bidang ISO/IEC 9126.

Matriks Efektivitas

Metric Name	Purpose of the metrics	Method of application	Measurement, formula and data element computations	Interpretation of measured value	Metric scale type	Measure type	Input to measurement	12207 reference	Target audience
Task effectiveness	What proportion of the goals of the task is achieved correctly?	User test	$M1 = \|1-\Sigma A_i\|$, A_i= proportional value of each missing or incorrect component in the task output	0<= M1 <=1 The closer to 1.0 the better.	-	A= ?	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer
NOTE Each potential missing or incomplete component is given a weight A_i based on the extent to which it detracts from the value of the output to the business or user. (If the sum of the weights exceed 1, the metric is normally set to 0, although this may indicate negative outcomes and potential safety issues.) (See for example G.3.1.1.) The scoring scheme is refined iteratively by applying it to a series of task outputs and adjusting the weights until the measures obtained are repeatable, reproducible and meaningful.									
Task completion	What proportion of the tasks are completed?	User test	X = A/B A = number of tasks completed B = total number of tasks attempted	0<= X <=1 The closer to 1.0 the better.	Ratio	A = Count B = Count X = Count/Count	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer
NOTE This metric can be measured for one user or a group of users. If tasks can be partially completed the Task effectiveness metric should be used..									
Error frequency	What is the frequency of errors?	User test	X = A/T A = number of errors made by the user T= time or number of tasks	0<= X The closer to 0 the better.	Absolute	A = Count	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer

Matriks Produktivitas

Metric Name	Purpose of the metrics	Method of application	Measurement, formula and data element computations	Interpretation of measured value	Metric scale type	Measure type	Input to measurement	12207 reference	Target audience
Task time	How long does it take to complete a task?	User test	X = Ta Ta = task time	0<= X The smaller the better.	Interval	T= Time	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer
Task efficiency	How efficient are the users?	User test	X = M1 / T M1 = task effectiveness T = task time	0<= X The larger the better.	-	T= Time X=	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer
Economic productivity	How cost-effective is the user?	User test	X = M1 / C M1 = task effectiveness C = total cost of the task	0<= X The larger the better.	-	T= Time X=	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer
NOTE Costs could for example include the user's time, the time of others giving assistance, and the cost of computing resources, telephone calls, and materials									
Productive proportion	What proportion of the time is the user performing productive actions?	User test	X = Ta / Tb Ta = productive time = task time - help time - error time - search time Tb = task time	0<= X <=1 The closer to 1.0 the better.	Absolute	Ta=Time Tb=Time X= Time/ Time	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer
NOTE This metric requires detailed analysis of a videotape of the interaction (see Macleod M, Bowden R, Bevan N and Curson I (1997) The MUSiC Performance Measurement method, Behaviour and Information Technology, 16, 279-293.)									
Relative user efficiency	How efficient is a user compared to an expert?	User test	Relative user efficiency X = A / B A = ordinary user's task efficiency B = expert user's task efficiency	0<= X <=1 The closer to 1.0 the better.	Absolute	X = A / B	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer

Matriks Keamanan

Metric Name	Purpose of the metrics	Method of application	Measurement, formula and data element computations	Interpretation of measured value	Metric scale type	Measure type	Input to measurement	12207 reference	Target audience
User health and safety	What is the incidence of health problems among users of the product?	Usage statistics	X = 1-A / B A = number of users reporting RSI B = total number of users	0<= X <=1 The closer to 1 the better.	Absolute	A = count B = count X = count/ count	Usage monitoring record	5.4 Operation	User Human interface designer
NOTE Health problems can include Repetitive Strain Injury, fatigue, headaches, etc.									
Safety of people affected by use of the system	What is the incidence of hazard to people affected by use of the system?	Usage statistics	X = 1-A / B A = number of people put at hazard B = total number of people potentially affected by the system	0<= X <=1 The closer to 1 the better.	Absolute	A = count B = count X = count/ count	Usage monitoring record	5.3 Qualification Testing 5.4 Operation	User Human interface designer Developer
NOTE An example of this metric is Patient Safety, where A = number of patients with incorrectly prescribed treatment and B = total number of patients									
Economic damage	What is the incidence of economic damage?	Usage statistics	X = 1-A/ B A = number of occurrences of economic damage B = total number of usage situations	0<= X <=1 The closer to 1 the better.	Absolute	A = count B = count X = count/ count	Usage monitoring record	5.4 Operation	User Human interface designer Developer
NOTE This can also be measured based on the number of occurrences of situations where there was a risk of economic damage									
Software damage	What is the incidence of software corruption?	Usage statistics	X = 1-A / B A = number of occurrences of software corruption B = total number of usage situations	0<= X <=1 The closer to 1 the better.	Absolute	A = count B = count X = count/ count	Usage monitoring record	5.4 Operation	User Human interface designer Developer

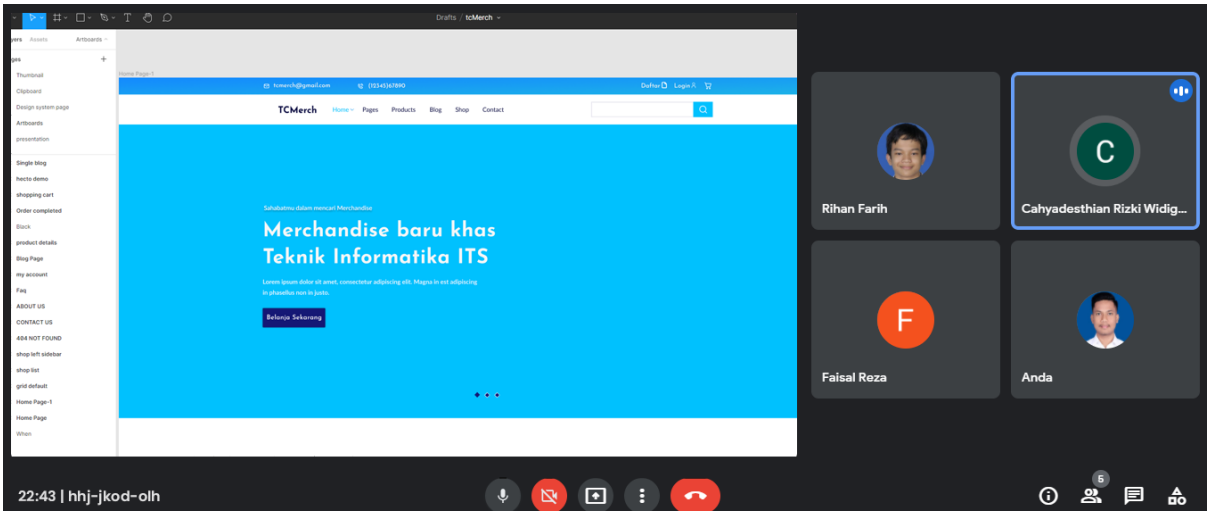
Matriks Kepuasan

Metric Name	Purpose of the metrics	Method of application	Measurement, formula and data element computations	Interpretation of measured value	Metric scale type	Measure type	Input to measurement	12207 reference	Target audience
Satisfaction scale	How satisfied is the user?	User test	X = A/B A = questionnaire producing psychometric scales B = population average	0<X the larger the better	Ratio.	A= Count X= Count	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer Developer
NOTE Examples of psychometric questionnaires can be found in F.3.									
Satisfaction questionnaire	How satisfied is the user with specific software features?	User test	X = ∑(Ai)/n Ai) = response to a question n = number of responses	Compare with previous values, or with population average	Ord.	A= Count X= Count	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer Developer
NOTE If the questionnaire items are combined to give an overall score, they should be weighted, as different questions may have different importance.									
Discretionary usage	What proportion of potential users choose to use the system?	Observation of usage	X = A/B A= number of times that specific software functions/applications/systems are used B = number of times they are intended to be used	0<=X<=1 The closer to 1 the better.	Ratio	A = Count B = Count X = Count/Count	Operation (test) report User monitoring record	6.5 Validation 5.3 Qualification testing 5.4 Operation	User Human interface designer

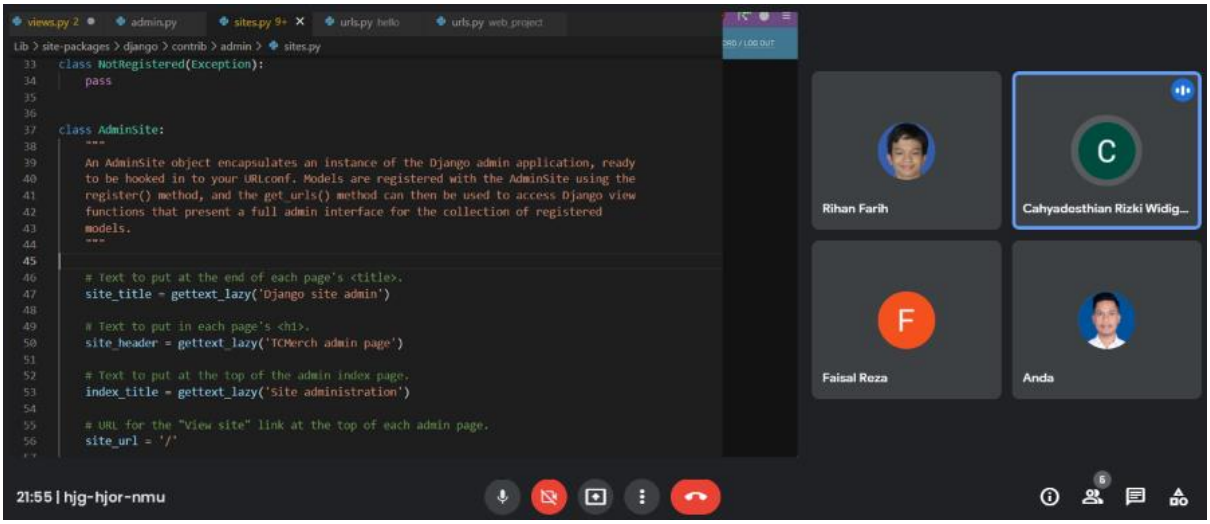
Selain itu, dalam pemantauan kualitas TCMerch juga dilakukan *walkthorugh, sofware inspection,* dan *technical review.*

WALKTHROUGH

- Walkthrough pertama dilakukan oleh analis dan designer yang memresentasikan mengenai use case diagram, CDM dan PDM, dan hal-hal lain yang berhubungan seperti misalnya logo dan desain website untuk menyesuaikan dengan kebutuhan *client.*



- Walkthorugh kedua dilakukan oleh programmer dengan menjelaskan proses pembuatan dalam implementasi website TCMerch.



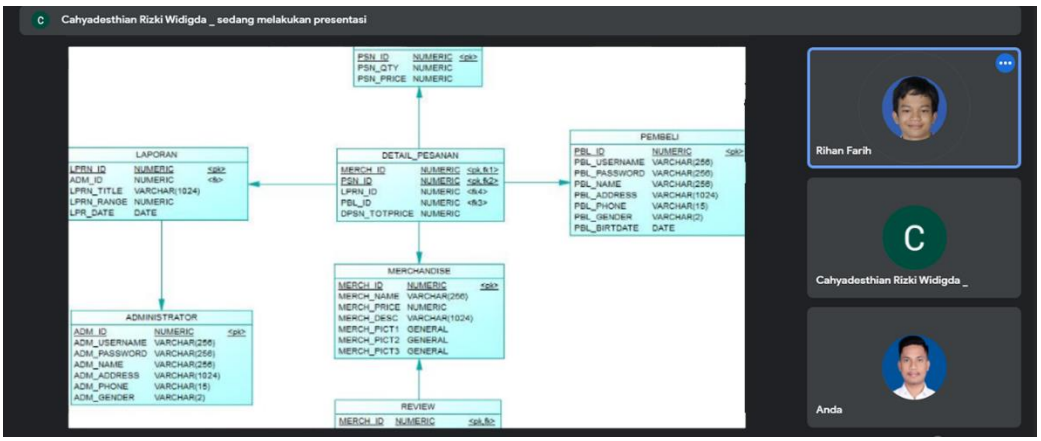
SOFTWARE INSPECTION

Software inspection dilakukan untuk meninjau hal-hal yang dikerjakan sudah memenuhi kebutuhan fungsional yang diiginkan oleh *client* atau belum.

Nama Parameter	Sesuai
Analisa dan Desain Sisitem	
Use Case Diagram	✓
Use Case Spesification	✓
CDM	✓
PDM	✓
Desain Aplikasi	
Halaman Login	
Halaman Pendaftaran	
Halaman Etalase Merchandise	
Halaman Detail Merchandise	
Halaman Profil	
Halaman Pembeli Daftar	
Halaman Pemesanan	
Pembuatan Program	
Pendaftaran	
Login	
Mengelola Data Diri	
Mengelola Merchandise	
Melakukan Proses Pemesanan	
Pembatalan Pemesanan	
Mengelola data Pembeli	
Fitur Review Merchandise	
Fitur Laporan Pendapatan	

TECHNICAL REVIEW

Sejauh ini, technical review dilakukan untuk mengobservasi dan mengevaluasi proses yang sedang dalam proses pengerjaan



QUALITY OBJECTIVES

DELIVERY TO SCOPE

Pengukuran metrik ini dilakukan dengan melibatkan *client* dalam memberikan penilaian terhadap proses atau hal-hal yang dikerjakan serta melakukan *user acceptance testing* dari hal-hal yang memungkinkan.

DELIVERY ON TIME

Proses pengerjaan TC Merch memiliki waktu sebagai berikut

Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Actual Duration
Sistem Informasi Merchandise Informatika ITS (TC Merch)	70 days	Mon 9/6/21	Fri 12/10/21			
Initiating	2 days	Mon 9/6/21	Tue 9/7/21	Mon 9/6/21	Tue 9/7/21	2 days
Pemilihan PM dan peran tim	1 day	Mon 9/6/21	Mon 9/6/21	Mon 9/6/21	Mon 9/6/21	1 day
Identifikasi Stakeholder	1 day	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	1 day
Membuat Project Charter	1 day	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	1 day
Mendefinisikan Proyek dan tujuannya	1 day	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	1 day
Menentukan Batasan Umum Proyek	1 day	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	1 day
Menentukan Project Deliverables	1 day	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	Tue 9/7/21	1 day
Planning	15 days	Wed 9/8/21	Tue 9/28/21			
Pembuatan Dokumen Manajemen Cakupan	2 days	Wed 9/8/21	Thu 9/9/21	**9/21/2021**	**9/23/2021**	2 days
Mendefinisikan Ruang Lingkup	1 day	Wed 9/8/21	Wed 9/8/21	9/21/2021	9/23/2021	
Pembuatan WBS	1 day	Thu 9/9/21	Thu 9/9/21	9/21/2021	9/23/2021	
Pembuatan Dokumen Perencanaan Kebutuhan	2 days	Fri 9/10/21	Sat 9/11/21	**9/17/2021**	**9/23/2021**	
Mengumpulkan informasi kebutuhan	1 day	Fri 9/10/21	Fri 9/10/21	9/17/2021	9/23/2021	
Menganalisis Kebutuhan	1 day	Sat 9/11/21	Sat 9/11/21	9/17/2021	9/23/2021	
Pembuatan Dokumen Manajemen Waktu	3 days	Sun 9/12/21	Tue 9/14/21	9/21/2021	9/28/2021	3 days
Mendefinisikan Kegiatan	1 day	Sun 9/12/21	Sun 9/12/21	9/21/2021	9/28/2021	
Memperkirakan Sumber Daya dan Waktu Kegiatan	1 day	Sun 9/12/21	Sun 9/12/21	9/21/2021	9/28/2021	
Menyusun Jadwal Kegiatan	1 day	Mon 9/13/21	Mon 9/13/21	9/22/2021	9/28/2021	
Membuat Gantt Chart dan CPM	1 day	Tue 9/14/21	Tue 9/14/21	9/23/2021	9/28/2021	
Pembuatan Dokumen Manajemen Biaya	2 days	Wed 9/15/21	Thu 9/16/21	9/28/2021	10/4/2021	2 Days
Memperkirakan Biaya	1 day	Wed 9/15/21	Wed 9/15/21	10/2/2021	10/4/2021	
Menentukan Budget	1 day	Wed 9/15/21	Wed 9/15/21	10/2/2021	10/4/2021	
Menetukan Toleransi Biaya Proyek	1 day	Thu 9/16/21	Thu 9/16/21	10/2/2021	10/4/2021	
Menentukan Sistem Pelaporan Biaya	1 day	Thu 9/16/21	Thu 9/16/21	10/2/2021	10/4/2021	
Pembuatan Dokumen Manajemen Kualitas	2 days	Fri 9/17/21	Sat 9/18/21	10/24/2021	10/26/2021	3 days
Menentukan Pokok Kualitas	1 day	Fri 9/17/21	Fri 9/17/21	10/24/2021	10/26/2021	
Menentukan Tanggung Jawab Kualitas	1 day	Fri 9/17/21	Fri 9/17/21	10/24/2021	10/26/2021	
Menentukan Pendekatan Kontrol Kualitas	1 day	Sat 9/18/21	Sat 9/18/21	10/24/2021	10/26/2021	
Pembuatan Dokumen Manajemen Sumber Daya	2 days	Sun 9/19/21	Mon 9/20/21			
Pembuatan Bagan Organisasi	1 day	Sun 9/19/21	Sun 9/19/21			
Mendeskripsikan Peran dan Tanggung Jawab	1 day	Sun 9/19/21	Sun 9/19/21			
Mendeskripsikan Kebutuhan Tim	1 day	Mon 9/20/21	Mon 9/20/21			
Pembuatan Dokumen Manajemen Komunikasi	2 days	Tue 9/21/21	Wed 9/22/21			
Pembuatan Dokumen Manajemen Resiko	2 days	Thu 9/23/21	Fri 9/24/21			
Menentukan Metodologi Manajemen Resiko	1 day	Thu 9/23/21	Thu 9/23/21			
Mengidentifikasi Resiko	1 day	Fri 9/24/21	Fri 9/24/21			
Pembuatan Dokumen Manajemen Pengadaan	3 days	Sat 9/25/21	Tue 9/28/21			
Mendeskripsikan alur pengadaan barang	1 day	Sat 9/25/21	Sat 9/25/21			
Menentukan tipe pengadaan barang	1 day	Sun 9/26/21	Sun 9/26/21			
Mendeskripsikan Integrasi Barang	1 day	Mon 9/27/21	Mon 9/27/21			
Executing	46 days	Tue 9/28/21	Tue 11/30/21			
Perancangan	3 days	Tue 9/28/21	Thu 9/30/21			
Pembuatan CDM dan PDM	1 day	Tue 9/28/21	Tue 9/28/21	9/29/2021	9/29/2021	1 day
Pembuatan Mock Up	3 days	Tue 9/28/21	Thu 9/30/21	10/27/2021	10/29/2021	3 days
Implementasi	37 days	Fri 10/1/21	Mon 11/22/21			
Coding Website Front-End	7 days	Fri 10/1/21	Mon 10/11/21			
Coding Website Back-End	30 days	Tue 10/12/21	Mon 11/22/21			
Testing & Deployment	6 days	Tue 11/23/21	Tue 11/30/21			
Test secara lokal	2 days	Tue 11/23/21	Wed 11/24/21			
Test secara online	2 days	Thu 11/25/21	Fri 11/26/21			
Melakukan Debug	2 days	Sat 11/27/21	Mon 11/29/21			
Monitoring and Controling	22 days	Mon 11/8/21	Tue 12/7/21			
Verifikasi ruang lingkup	2 days	Tue 11/30/21	Wed 12/1/21			
Validasi pemenuhan kebutuhan	1 day	Wed 12/1/21	Wed 12/1/21			
Kontrol Waktu	1 day	Thu 12/2/21	Thu 12/2/21			
Kontrol Biaya	1 day	Fri 12/3/21	Fri 12/3/21			
Melakukan quality control	2 days	Sat 12/4/21	Sun 12/5/21			
Melaporkan kinerja sumber daya	1 day	Mon 12/6/21	Mon 12/6/21			
Kontrol Komunikasi	1 day	Tue 12/7/21	Tue 12/7/21			
Kontrol Resiko	1 day	Mon 11/8/21	Mon 11/8/21			
Mengelola Pengadaan	2 days	Wed 11/10/21	Thu 11/11/21			
Closing	3 days	Wed 12/8/21	Fri 12/10/21			
Melakukan Pelatihan Pengguna	2 days	Wed 12/8/21	Thu 12/9/21			
Penyerahan Deliverable dan Laporan Proyek	1 day	Fri 12/10/21	Fri 12/10/21			
Penutupan Pengadaan	1 day	Fri 12/10/21	Fri 12/10/21			

DELIVERY ON BUDGET

Actual costs +/- change orders versus budget.

ADHERENCE TO ACME PROJECT METHODOLOGY

PMO audit comparison of method versus project management deliverables.

QUALITY ROLES AND RESPONSIBILITIES

Roles	Nama	Responsibilities
Quality Manager	Cahyadesthian R. Widigda	Meninjau dan memastikan perangkat lunak yang dikembangkan memenuhi kebutuhan *client* dengan baik dan memenuhi standar yang digunakan
Project Manager	Cahyadesthian R. Widigda	Mengatur jalannya pengerjaan proyek, memastikan apa yang dikerjakan dapat berjalan sesuai jadwal dan memberikan alternatif jika terdapat sesuatu yang tidak sesuai jadwal
Developers	Faisal Reza Maulana	Melakukan pengembangan sistem dengan mempertimbangkan waktu dan standar yang ditetapkan

DELIVERABLES AND PROCESSES SUBJECT TO QUALITY REVIEW

Deliverable or process that will reviewed	Details of quality review
User Acceptance Testing	Pengguna Sistem dapat berinteraksi dengan sistem sesuai dengan Use Case diagram dan spesifikasi yang telah disepakati
Aksesbilitas	Sistem dapat diakses dari berbagai perangkat khususnya melalui *desktop* dan *mobile*
Sistem Informasi TCMerch	• Dapat memenuhi kebutuhan stakholder • Tidak ditemukan *error* dalam proses penggunaan sistem
Dokumen Project Charter	Sesuai dengan batasan proyek yang disepakati

Dokumen Manajemen Ruang Lingkup	Memiliki deskripsi yang jelas terhadap cakupan pekerjaan proyek pengembangan sistem TC Merch
Dokumen Perencanaan Kebutuhan	Menggambarkan kebutuhan dan analisa dari pengguna yang berinteraksi dengan sistem TC Merch
Dokumen Penjadwalan	Memilki waktu atau timeline dari pengerjaan sistem dan terupdate sesuai kondisi tim
Dokumen Manajemen Biaya	Mengandung anggaran biaya yang mewakili kebutuhan pengembangan sistem
Dokumen Manajemen Kualitas	Menjadi tolak ukur kualitas ketercapaian sistem TC Merch
Dokumen Manajemen Komunikasi	Menggambarkan sistem komunikasi antara stakeholder dalam proses pengembangan TC Merch
Dokumen Manajemen Sumber Daya	Mengandung penjelasan mengenai sumber daya yang dibutuhkan dalam pengembangan proyek TC Merch
Dokumen Manajemen Resiko	Mendeskripsikan langkah-langkah dalam mengelola resiko terhadap proses pengembangan sistem TCMerch
Dokumen Manajemen Pengadaan	Mendeskripsikan hal-hal yang berkaitan dengan pengadaan kebutuhan dan hal lainnya yang berhubungan dengan sistem TCMerch

QUALITY CONTROL APPROACH

Quality control process	Milestones	Owner	Documentation
Validasi Dokumen Manajemen	Penyelesaian Tahap Planning(September 2021)	*Project Manager*	validasi_dokumen_manajemen.pdf
Pengerjaan Sistem TC Merch	Sistem TCMerch yang dikembangkan dapat memberikan pengalaman penggunaan sistem (November 2021)	*Project Manager*	
Walkthrough, Software Inspection, dan *Technical Review*	Sistem TCMerch dapat berjalan dengan baik dan memenuhi kebutuhan *client*(November 2021)	*Quality Manager*	
Website TCMerch	Sistem TCMerch bisa diakses secara online(Desember 2021)	*Project Manager*	

REFERENCE

https://acqnotes.com/acqnote/careerfields/quality-management-plan-qmp (Quality Management Plan (QMP))

https://standards.ieee.org/standard/90003-2018.html (IEEE/ISO/IEC 90003-2018 - ISO/IEC/IEEE International Standard - Software engineering -- Guidelines for the application of ISO 9001:2015 to computer software)

https://www.w3.org/standards/webofservices/

https://www.w3.org/Payments/

https://www.academia.edu/15062663/IEEE_Standard_for_Software_Quality_Assurance_Processes

https://www.iso.org/standard/39752.html (ISO/IEC TR 9126-4:2004 Software engineering — Product quality — Part 4: Quality in use metrics)

https://media.neliti.com/media/publications/242647-analysis-web-education-based-on-isoiec-9-a2e4fe0d.pdf