TEST PLAN

Project Name : *Testing Quality Arkademy Website Using Selenium*

ChangeLog

Version	Change Date	By	Description
version number	12 December 2020	Retna Taqiyyah Adiba	in scope 1.1.1 Register
	12 December 2020	Icha Nurlaela Khoerotunisa	in scope 1.1.1 Login
	18th December 2020	Rakha Zharfarizqi Danadibrata	in scope 1.1.1 Tambah Riwayat

1   Introduction

Ini adalah dokumen Test Plan untuk Platform Arkademy yang dikembangkan untuk program pelatihan dan penyaluran kerja untuk berkarir di bidang teknologi. Dokumen ini digunakan untuk menguji aplikasi yang telah dibuat. Hasil uji yang telah dilakukan akan digunakan untuk menentukan kualitas dari aplikasi.

1.1.1   In Scope

Berikut adalah bagian yang akan difokuskan selama pengujian terhadap aplikasi:

a. Login
b. Register
c. Tambah Riwayat

Name FR	Role	Description
Login	User	- User dapat memasukan username menggunakan email dan password yang sudah terdaftar. - Sistem akan mendeteksi jika email dan kata sandi salah, maka akan muncul pemberitahuan bahwa email dan kata sandi tidak valid.
Register	User	- User dapat melakukan registrasi - Sistem akan mendeteksi jika nama lengkap tidak sesuai,email invalid, password tidak sesuai dengan ketentuan.

Tambah Riwayat	User	- User dapat menambahkan riwayat pendidikan - User dapat menghapus riwayat pendidikan - Sistem akan mendeteksi jika kolom selain jurusan tidak terisi

1.1.2 Out of Scope

Berikut adalah bagian yang tidak difokuskan selama pengujian terhadap aplikasi:

a. Profile

b. Tambah portofolio

c. Daftar Course

Name FR	Role	Description
Profile	User	- User dapat mengedit dan melengkapi profile.
Tambah portofolio	User	- User dapat menambahkan portofolio
Daftar Course	User	- User dapat mendaftarkan diri pada course tertentu sesuai yang kebutuhan.

1.2 Quality Objective

Berikut merupakan tujuan pengujian

1. Untuk memastikan 3 fitur yang telah ditentukan di dalam Project ini sesuai dengan persyaratan fungsional dan non-fungsional

2. Untuk mengidentifikasi atau menunjukan adanya cacat (defect) pada aplikasi

3. Untuk memvalidasi terhadap aplikasi bahwa aplikasi yang dihasilkan sesuai dengan kebutuhan (*requirement*) yang sebelumnya telah ditentukan.

4. Bug atau masalah dapat diidentifikasi dan diperbaiki sebelum di publish

5. Untuk menjamin bahwa aplikasi berjalan sesuai dengan yang diharapkan.

1.3 Roles and Responsibilities

No	Member	Responsibilities
1	Test Manager	Mengelola seluruh proyek, Menentukan arah proyek, dan mendapatkan sumber daya yang sesuai.
2	QA Analyst	Bertanggung jawab atas tahap pengujian proses produksi untuk memastikan bahwa produk akhir memenuhi standar, termasuk mengidentifikasi apakah produk berfungsi, dapat diandalkan, dan memenuhi harapan pengguna akhir.
3	Configuration Manager	Memastikan bahwa kinerja, fungsi, dan tampilan aplikasi tetap konsisten, Meninjau dan memelihara semua dokumentasi proyek sesuai dengan prosedur, Mendukung pengujian aplikasi dan peningkatan lingkungan serta resolusi masalah produksi.
4	Developers	Bertanggung jawab untuk melakukan development aplikasi berdasarkan rancangan yang telah dibuat.

2 Test Methodology

2.1 Overview

Pengujian ini menggunakan metode Agile dimana metode Agile sendiri merupakan metodologi pengembangan perangkat lunak yang didasarkan pada prinsip-prinsip jangka pendek yang dapat beradaptasi dengan cepat. Tujuan dari metodologi Agile ini diharapkan dapat mengerjakan pengembangan perangkat lunak secara cepat dan tepat. Cara agar perangkat lunak dapat terbuat secara cepat dan tepat ialah dengan memastikan fitur-fitur pada perangkat lunak sesuai dengan kebutuhan pengguna.

2.2 Test Levels

Time

Task	Person in Charge	Estimate Effort
Planning	**Quality Assurance, Test Manager**	**diperlukan 2 hari untuk 3 fitur, dan semua fitur dilakukan masing-masing oleh 3 orang.**
Document Test Plan	**Quality Assurance**	**diperlukan 8 hari untuk 3 fitur, dan masing-masing fitur dilakukan oleh 1 orang.**
Project Manager	**Quality Assurance**	**diperlukan 8 hari untuk 3 fitur, dan dilakukan oleh 3 orang.**

Selenium Testing	Quality Assurance	diperlukan 6 hari untuk 3 fitur, dan dilakukan oleh 3 orang.

	Desember 2020								
TASK NAME	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Planning	■	■							
Document Test Plan		■	■	■	■	■	■	■	■
Project Management		■	■	■	■	■	■	■	■
Selenium Testing			■	■	■	■	■	■	

2.3 Suspension Criteria and Resumption Requirements

Apabila 40% pengujian selalu ditemukan error atau masalah, maka pengujian dihentikan dan dikembalikan ke tim developer.

2.4 Test Completeness

- 100% tes berhasil dilakukan
- Semua test case Manual & Otomatis dijalankan
- Semua bug telah diperbaiki atau akan diperbaiki pada rilis berikutnya

3 Test Deliverables

Berikut ini merupakan test deliverables pada project ini adalah:

- Test Scenario

TEST SCENARIO

Register, Login, Tambah Riwayat Pedidikan

Test scenario ID	Test Objective/Test scenarios
TS_register_001	Verify Register with Valid Data New User
TS_register_002	Verify Register with Invalid Email User
TS_register_003	Verify Register with Invalid Phone Number User
TS_register_004	Verify Register with Invalid Password User
TS_login_001	Verify Login features with Valid Data Existing User
TS_login_002	Verify Login features with Invalid Data Email Existing User
TS_login_003	Verify Login features with Valid Data Password Existing User
TS_login_004	Verify Login features with Invalid Data Email and Password Existing User
TS_edu_005	Verify Adding Educational Background features with Valid Data
TS_edu_006	Verify Deleting Educational Background features
TS_edu_007	Verify Adding Educational Background features with Invalid Data

- Test Case

Test Scenarios	Test Case#	Test Case Title	Test Case Type	Test Step	Test Data	Expected Result
Verify Register with Valid Data New User	TC_register _01	New User is able to Register into Arkademy.com	VALID	1. Open register page	https://www.arkademy.com/auth/signup	Muncul Notifikasi User telah terdaftar
				2. Enter nama lengkap	Nama Lengkap: Retna Taqiyyah	
				3. Enter email	Email: retnadiba@gmail.com	
				4. Enter no. Handphone	No. Handphone: 085299667938	
				5. Enter kata sandi	Kata Sandi: retnaretna	

				6. Enter konfirmasi kata sandi	Konfirmasi Kata Sandi: retnaretna	
				7. Click on checkbox "syarat dan ketentuan"		
				8. Click button "Daftar Arkademy"		
Verify Register with Invalid Email User	TC_register _02	New User is not able to register to Arkademy.com with invalid email	INVALID	1. Open register page	https://www.arkademy.com/auth/signup	Show Notification "Format Email Salah"
				2. Enter the value on the following fields: - "Nama Lengkap" - "Invalid E-mail" - "No.Handphone" - "Kata Sandi" - "Konfirmasi Kata Sandi"	Nama Lengkap: "Retna Taqiyyah" email: ret.gmail.com No.Handphone:085299667938 Kata Sandi: retnaretna Konfirmasi Kata Sandi:retnaretna	
				3. Click on checkbox "syarat dan ketentuan"		
				4. Click button "Daftar Arkademy"		
Verify Register with Invalid Phone Number User	TC_register _03	New User is not able to register to Arkademy.com with Invalid Phone Number	INVALID	1. Open register page	https://www.arkademy.com/auth/signup	Cant Input other than numbers
				2. Enter the value on the following fields: - "Nama Lengkap" - "E-mail" - "Invalid No.Handphone" - "Kata Sandi" - "Konfirmasi Kata Sandi"	Nama Lengkap: "Retna Taqiyyah" email: retnadiba@gmail.com No.Handphone:retna Kata Sandi: retnaretna Konfirmasi Kata Sandi:retnaretna	
				3. Click on checkbox "syarat dan ketentuan"		
				4. Click button "Daftar Arkademy"		
Verify Register with Invalid Password User	TC_register _04	New User is not able to register to Arkademy.com with Invalid Password less than 8 character User	INVALID	1. Open register page	https://www.arkademy.com/auth/signup	Show Notification, "Minimal 8 Character"
				2. Enter the value on the following fields: - "Nama Lengkap" - "E-mail" - "No.Handphone" - "Invalid Kata Sandi" - "Konfirmasi Kata Sandi"	Nama Lengkap: "Retna Taqiyyah" email: retnadiba@gmail.com No.Handphone:retna Kata Sandi: retna Konfirmasi Kata Sandi:retnaretna	
				3. Click on checkbox "syarat dan ketentuan"		
				4. Click button "Daftar Arkademy"		

Verify Login features with Valid Data Existing User	TC_login_01	User is able to Login into Arkademy.com	VALID	1. Open Login page	https://sso.arkademy.com/auth/realms/production/protocol/openid-connect/auth?client_id=arkademy-production-client&scope=openid%20email&response_type=code&redirect_uri=https%3A%2F%2Fservices.arkademy.com%2Fauth%2Flogin%2Fverify%3Ftoken%3D46df22fcf2f3299ab445bb8751300ae4&nonce=70f4816b-d94f-48fe-9152-fbf925430bf4&client_name=arkademy-prod	sistem redirect ke laman bootcamp
				2. Enter email	Email: nurlaelaknisa@gmail.com	
				3. Enter Password	Password: Allahno1.	
				4. Click button "Masuk"		
Verify Login features with Invalid Data Email Existing User	TC_login_02	User is not able to login to Arkademy.com using the unregistered email	INVALID	1. Open Login page	https://sso.arkademy.com/auth/realms/production/protocol/openid-connect/auth?client_id=arkademy-production-client&scope=openid%20email&response_type=code&redirect_uri=https%3A%2F%2Fservices.arkademy.com%2Fauth%2Flogin%2Fverify%3Ftoken%3D46df22fcf2f3299ab445bb8751300ae4&nonce=70f4816b-d94f-48fe-9152-fbf925430bf4&client_name=arkademy-prod	terdapat notifikasi "nama pengguna atau kata sandi tidak valid"
				2. Enter email	Email: nurlaelaknisa28@gmail.com	
				3. Enter Password	Password: Allahno1.	
				4. Click button "Masuk"		

Verify Login features with Invalid Data Password Existing User	TC_login_03	User is not able to login to Arkademy.com using the unregistered password	INVALID	1. Open Login page	https://sso.arkademy.com/auth/realms/production/protocol/openid-connect/auth?client_id=arkademy-production-client&scope=openid%20email&response_type=code&redirect_uri=https%3A%2F%2Fservices.arkademy.com%2Fauth%2Flogin%2Fverify%3Ftoken%3D46df22fcf2f3299ab445bb8751300ae4&nonce=70f4816b-d94f-48fe-9152-fbf925430bf4&client_name=arkademy-prod	terdapat notifikasi "nama pengguna atau kata sandi tidak valid"
				2. Enter email	Email: nurlaelaknisa@gmail.com	
				3. Enter Password	Password: Icha2807	
				4. Click button "Masuk"		
Verify Login features with Invalid Data Email and Password Existing User	TC_login_04	User is not able to login to Arkademy.com using the unregistered email and password	INVALID	1. Open Login page	https://sso.arkademy.com/auth/realms/production/protocol/openid-connect/auth?client_id=arkademy-production-client&scope=openid%20email&response_type=code&redirect_uri=https%3A%2F%2Fservices.arkademy.com%2Fauth%2Flogin%2Fverify%3Ftoken%3D46df22fcf2f3299ab445bb8751300ae4&nonce=70f4816b-d94f-48fe-9152-fbf925430bf4&client_name=arkademy-prod	terdapat notifikasi "nama pengguna atau kata sandi tidak valid"
				2. Enter email	Email: nurlaelaknisa28@gmail.com	
				3. Enter Password	Password: Icha2807	
				4. Click button "Masuk"		

Verify Adding Educational Background features with Valid Data	TC_edu_01	User is able to add educational background when filling all the column except the optional column	VALID	1. Open Login page	https://sso.arkademy.com/auth/realms/production/protocol/openid-connect/auth?client_id=arkademy-production-client&scope=openid%20email&response_type=code&redirect_uri=https%3A%2F%2Fservices.arkademy.com%2Fauth%2Flogin%2Fverify%3Ftoken%3D46df22fcf2f3299ab445bb8751300ae4&nonce=70f4816b-d94f-48fe-9152-fbf925430bf4&client_name=arkademy-prod	the system redirect to profile update page
				2. Enter email	Email: rakhazharfarizqi25@gmail.com	
				3. Enter Password	Password: rakharakha	
				4. Click button "Masuk"		
				5. Click profile photo		
				6. Click button "Profile"		
				7. Click button "Tambah" at Riwayat Pendidikan		
				8. Enter Nama Sekolah	Nama Sekolah : Telkom university	
				9. Enter Jurusan (Optional)	Jurusan : S1 Teknik Telekomunikasi	
				10. Enter Tahun Masuk	Tahun Masuk : 2021	
				11. Enter Tahun Lulus	Tahun Lulus : 2023	
				12. Click Button "Tambah Riwayat Pendidikan"		
				13. Click Button "Preview & Simpan"		
				14. Click Button "Simpan"		

				Steps	Data	Expected Result
Verify Deleting Educational Background features	TC_edu_02	User is able to delete educational background	VALID	1. Open Login page	https://sso.arkademy.com/auth/realms/production/protocol/openid-connect/auth?client_id=arkademy-production-client&scope=openid%20email&response_type=code&redirect_uri=https%3A%2F%2Fservices.arkademy.com%2Fauth%2Flogin%2Fverify%3Ftoken%3D46df22fcf2f3299ab445bb8751300ae4&nonce=70f4816b-d94f-48fe-9152-fbf925430bf4&client_name=arkademy-prod	the system redirect to profile update page
				2. Enter email	Email: rakhazharfarizqi25@gmail.com	
				3. Enter Password	Password: rakharakha	
				4. Click button "Masuk"		
				5. Click profile photo		
				6. Click button "Profile"		
				7. Click button "+Tambah" at Riwayat Pendidikan		
				8. Click Button "Hapus"		
				9. Click Button "Preview & Simpan"		
				10. Click Button "Simpan"		
Verify Adding Educational Background features with Invalid Data	TC_edu_03	User is not able to add educational background without filling the Nama Sekolah column	INVALID	1. Open Login page	https://sso.arkademy.com/auth/realms/production/protocol/openid-connect/auth?client_id=arkademy-production-client&scope=openid%20email&response_type=code&redirect_uri=https%3A%2F%2Fservices.arkademy.com%2Fauth%2Flogin%2Fverify%3Ftoken%3D46df22fcf2f3299ab445bb8751300ae4&nonce=70f4816b-d94f-48fe-9152-f	the system pop up an alert notification

						bf925430bf4&client_name=arkademy-prod	
					2. Enter email	Email: rakhazharfarizqi25@gmail.com	
					3. Enter Password	Password: rakharakha	
					4. Click button "Masuk"		
					5. Click profile photo		
					6. Click button "Profile"		
					7. Click button "Tambah" at Riwayat Pendidikan		
					8. Enter Nama Sekolah	Nama Sekolah :	
					9. Enter Jurusan (Optional)	Jurusan : S1 Teknik Telekomunikasi	
					10. Enter Tahun Masuk	Tahun Masuk : 2021	
					11. Enter Tahun Lulus	Tahun Lulus : 2023	
					12. Click Button "Tambah Riwayat Pendidikan"		
					13. Click Button "Preview & Simpan"		
					14. Click Button "Simpan"		

- ● Test Monitoring

Test Scenario	Test case ID	Test Case / Test Title	Status	Date Testing	Note
Verify Register with New User	TC_register_01	New User is able to Register into Arkademy.com	**Passed**	16/12/2020	Successful
Verify Register with Invalid Email User	TC_register_02	New User is not able to register to Arkademy.com with invalid email	**Passed**	18/12/2020	Successful

Verify Register with Invalid Phone Number User	TC_register_03	New User is not able to register to Arkademy.com with Invalid Phone Number	**Passed**	19/12/2020	Feedback: We recommend that, because arkademy.com is for Indonesian users, the field for phone number is adjusted to the format of the phone number in Indonesia. because in the arkademy for the phone number field, you can still input the minus number and the letter 'e'.
Verify Register with Invalid Password User	TC_register_04	New User is not able to register to Arkademy.com with Invalid Password less than 8 character User	**Passed**	19/12/2020	Successful
Verify Login features with Valid Data Existing User	TC_Login_01	Existing User is able to Login to Arkademy.com	**Passed**	18/12/2020	Successful
Verify Login features with Invalid Data Email Existing User	TC_Login_02	Existing User is not able to login to Arkademy.com using the unregistered email	**Passed**	19/12/2020	email is not registered but notification displays "invalid username or password" notification should be written specifically to make it easier for users such as "invalid username"
Verify Login features with Invalid Data Password Existing User	TC_Login_03	Existing User is not able to login to Arkademy.com using the unregistered password	**Passed**	18/12/2020	Password is not registered but notification displays "invalid username or password" notification should be written specifically to make it easier for users such as "invalid password"

Verify Login features with Invalid Data Email and Password Existing User	TC_Login_04	Existing User is not able to login to Arkademy.com using the unregistered email and password	**Passed**	19/12/2020	Email and password are not registered but the notification displays "Invalid username or password" the notification should be written specifically to make it easier for users such as "Invalid username and password"
Verify Adding Educational Background features with Valid Data	TC_edu_01	User is able to add educational background	**Passed**	18/12/2020	Successful
Verify Deleting Educational Background features	TC_edu_02	User is able to delete educational background	**Passed**	18/12/2020	Successful
Verify Adding Educational Background features with Invalid Data	TC_edu_03	User is not able to add educational background without filling the school name column	**Passed**	18/12/2020	The system pop up a successful alert notification but the data doesnt exist

- Test Report

No	TEST SCENARIO/TEST STEPS	TEST CASE ID	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	STATUS	DEFECT ID	SUGGESTION
1.	Verify Register with Valid Data New User	TC_register_01	Nama Lengkap: "Retna Taqiyyah" email: retnadiba@gmail.com No.Handphone:085299667938 Kata Sandi: retnaretna	Show Notifikasi User telah terdaftar	Show Notifikasi User telah terdaftar	Success	-	-

			Konfirmasi Kata Sandi:retna retna					
2.	Verify Register with Invalid Email User	TC_register_02	Nama Lengkap: "Retna Taqiyyah" email: ret.gmail.com No.Handphone:085299 667938 Kata Sandi: retnaretna Konfirmasi Kata Sandi:retna retna	Show Notification "Format Email Salah"	Show Notification "Format Email Salah"	Success	-	-
3.	Verify Register with Invalid Phone Number User	TC_register_03	Nama Lengkap: "Retna Taqiyyah" email: retnadiba@gmail.com No.Handphone:retna Kata Sandi: retnaretna Konfirmasi Kata Sandi:retna retna	Cant Input other than numbers	Cant Input other than numbers except letter 'e'	Success	-	The field for phone number should adjusted to the format of the phone number in Indonesia. because in the arkademy for the phone number field, you can still input the minus number and the letter 'e'.
4.	Verify Register with Invalid Password User	TC_register_04	Nama Lengkap: "Retna Taqiyyah" email: retnadiba@gmail.com No.Handphone:retna Kata Sandi: retna Konfirmasi Kata Sandi:retna	Show Notification, "Minimal 8 Character"	Show Notification, "Minimal 8 Character"	Success	-	-

			retna				
5.	Verify Login features with Valid Data Existing User	TC_login_01	Email: nurlaelaknisa@gmail.com Password: Allahno1.	successfully logged in, the user is directed to the homepage	successfully logged in, the user is directed to the homepage	Passed	-	-
6.	Verify Login features with Invalid Data Email Existing User	TC_login_02	Email: nurlaelaknisa28@gmail.com Password: Allahno1.	Show Notification "Nama pengguna tidak valid"	Show Notification "Nama pengguna atau kata sandi tidak valid"	Passed	-	Email is not registered but notification displays "invalid username or password" notification should be written specifically to make it easier for users such as "invalid username"
7.	Verify Login features with Invalid Data Password Existing User	TC_login_03	Email: nurlaelaknisa@gmail.com Password: Icha2807	Show Notification "Kata sandi tidak valid"	Show Notification "Nama pengguna atau kata sandi tidak valid"	Passed	-	Password is not registered but notification displays "invalid username or password" notification should be written specifically to make it easier for users such as "invalid password"
8.	Verify Login features with Invalid Data Email and Password Existing User	TC_login_04	Email: nurlaelaknisa28@gmail.com Password: Icha2807	Show Notification "Nama pengguna dan kata sandi tidak valid"	Show Notification "Nama pengguna atau kata sandi tidak valid"	Passed	-	Email and password are not registered but the notification displays "Invalid username or password" the notification should be written specifically to make it easier for users such as "Invalid username and password"
9	Verify Adding	TC_edu_01	Nama Sekolah :	Educational Background	Educational Background	Passed	-	-

			Telkom university	Data Successfully Updated	Data Successfully Updated			
	Educational Background features with Valid Data		Jurusan : S1 Teknik Telekomun ikasi					
			Tahun Masuk : 2021					
			Tahun Lulus : 2023					
10	Verify Deleting Educational Background features	TC_edu_02	Nama Sekolah : Telkom university	Educational Background Data Successfully Deleted	Educational Background Data Successfully Deleted	Passed	-	-
			Jurusan : S1 Teknik Telekomun ikasi					
			Tahun Masuk : 2021					
			Tahun Lulus : 2023					
11	Verify Adding Educational Background features with Invalid Data	TC_edu_03	Nama Sekolah :	Educational Background Data Not Updated Successfully	Educational Background Data Successfully Updated but Data doesn't Exist	Passed	-	The system should pop up an alert notification when the column was blank except for the optional column
			Jurusan : S1 Teknik Telekomun ikasi					
			Tahun Masuk : 2021					
			Tahun Lulus : 2023					

4   Resource & Environment Needs

4.1   Testing Tools

- Ms. Word

  Digunakan untuk membuat dokumen test plan untuk merencanakan pengujian yang akan dilakukan.

- Jira

  Digunakan untuk merencanakan, melacak, dan mengelola semua proyek pengembangan perangkat lunak.

- Selenium

  Digunakan sebagai tool yang bisa digunakan untuk melakukan Automation Testing pada pengembangan perangkat lunak.

4.2   Test Environment

4.2.1 Hardware

CPU 1

Caption	: AMD Family 23 Model 24 Stepping 1
Device ID	: CPU0
Name	: AMD Ryzen 3 3200U with Radeon Vega Mobile Gfx
Number Of Cores	: 2

CPU 2

Caption	: Intel(R) Core(™) i3-5005U
Number of Cores	: i3

Random Access Memory (RAM) 1

Total Physical Memory	: 6,083 MB
Available Physical Memory	: 687 MB

Random Access Memory (RAM) 2

Installed memory (RAM): 8,00 GB

Network 1

Adapter Name	: Ethernet adapter vEthernet (WSL)

IPv4 : 172.21.128,1

Network 2

Adapter Name : vEthernet (Default Switch)

IPv4 : 172.30.213.129

CPU 1

Disk 0 (D:)

Capacity : 220 GB

System disk : No

Page file : No

Type : SSD

Disk 1 (C:)

Capacity : 160 GB

System disk : Yes

Page file : Yes

Type : SSD

CPU 2

Disk 0 (D:)

Capacity : 466 GB

System disk : Yes

Page file   : No

4.2.2. Software

Operating System (OS) 1

    Host Name   : LAPTOP-4R2PH2DN

    OS Name   : Microsoft Windows 10 Home Single Language

    OS Version   : 10.0.19041 N/A Build 19041

    OS Manufacturer   : Microsoft Corporation

    OS Configuration   : Standalone Workstation

    OS Build Type   : Multiprocessor Free

Operating System (OS) 2

    Host Name   : LAPTOP-RN9PJOUG

    OS Name   : Microsoft Windows 10 Education

    OS Version   : 64-bit Operating System, x64-based processor

Terms & Condition

- Minimal Windows 8
- Minimal Office 2013
- Minimal RAM 8 GB and above
- Internet dengan kecepatan minimal 5 Mb/s