

Report on – GkQuiz



LTTS
GLOBAL
ENGINEERING
ACADEMY



L&T Technology Services

Report by: Omkar Chitragar

Ps no. : 99007640

Module : C-programming on multiple platforms



Document History

Ver. Rel. No.	Release Date	Prepared. By	Reviewed By	Approved By	Remarks/Revision Details
1	12/02/2022	Omkar Chitragar			

Table of Contents

- Description.
- Requirements.
- SWOT analysis.
- 4W's and 1H.
- Architecture.
- Test plan.
- Test plan output.
- Learnings

Description

GkQuiz:

This quiz is designed to test the general knowledge of the user and help the user with an knowledge update. The user can take up the quiz by entering their credentials. Depending upon the user's score in the quiz, the user is provided with good/average/poor general knowledge as a result. User can end the quiz with end option and restart the quiz with restart option.

Features of the project:

- User can enter the username in order to participate in the quiz.
- User can attempt the quiz and view the result.
- User can end the quiz.
- User can restarts the quiz.

How each features is implemented:

- Prints the statement asking the credentials such as name of the user for the participation in the quiz.
- Displays the multiple choice general knowledge questions to the user.
- Takes input as right/wrong answer from the user.
- Displays result upon completion of the quiz.
- Provides user with end option to end the quiz.
- Provides user with restart option to restart the quiz.

Requirements

High Level Requirements

ID	Description
HP01	User can enter the username in order to participate in the quiz
HP02	User can attempt the quiz and view the result
HP03	User can end the quiz
HP04	User can restart the quiz

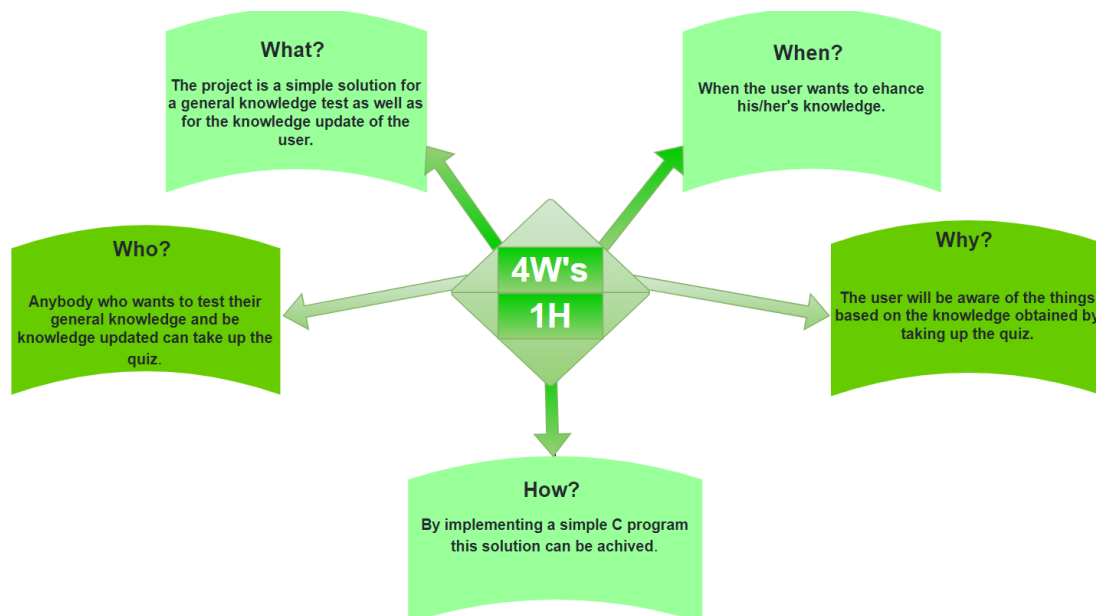
Low Level Requirements

ID	Description	ID
LP01	User is asked to enter username	HP01
LP02	User views the rules & starts the quiz	HP02
LP03	User views the mcqs and can enter the option	HP02
LP04	User views the result of answered question	HP02
LP05	User can continue/end the quiz	HP03
LP06	User can restart the quiz	HP04

SWOT analysis

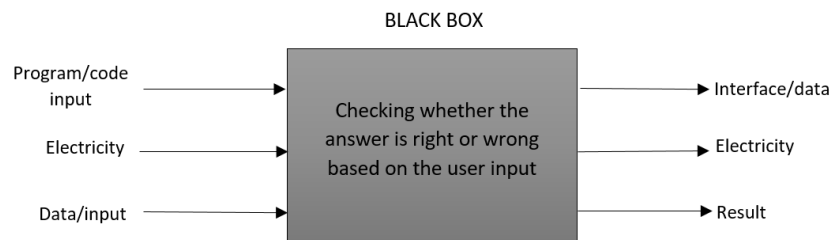
SWOT ANALYSIS	
Strengths: <ul style="list-style-type: none"> ➤ Enhances general knowledge of the user. ➤ User friendly and simple to use. ➤ Creates curiosity in the user to get them know about how good they are at GK. 	Weaknesses: <ul style="list-style-type: none"> ➤ It has a simple interface. ➤ Questions in the quiz can be limited, hence can't provide vast knowledge. ➤ Similar set of questions upon retaking of the quiz.
Opportunities: <ul style="list-style-type: none"> ➤ The quiz can be further developed and made more fun and interesting. ➤ Different set of questions occurring for every second chance feature can be added. 	Threats: <ul style="list-style-type: none"> ➤ User can cheat with the same set of questions occurring every time.

4W's & 1H

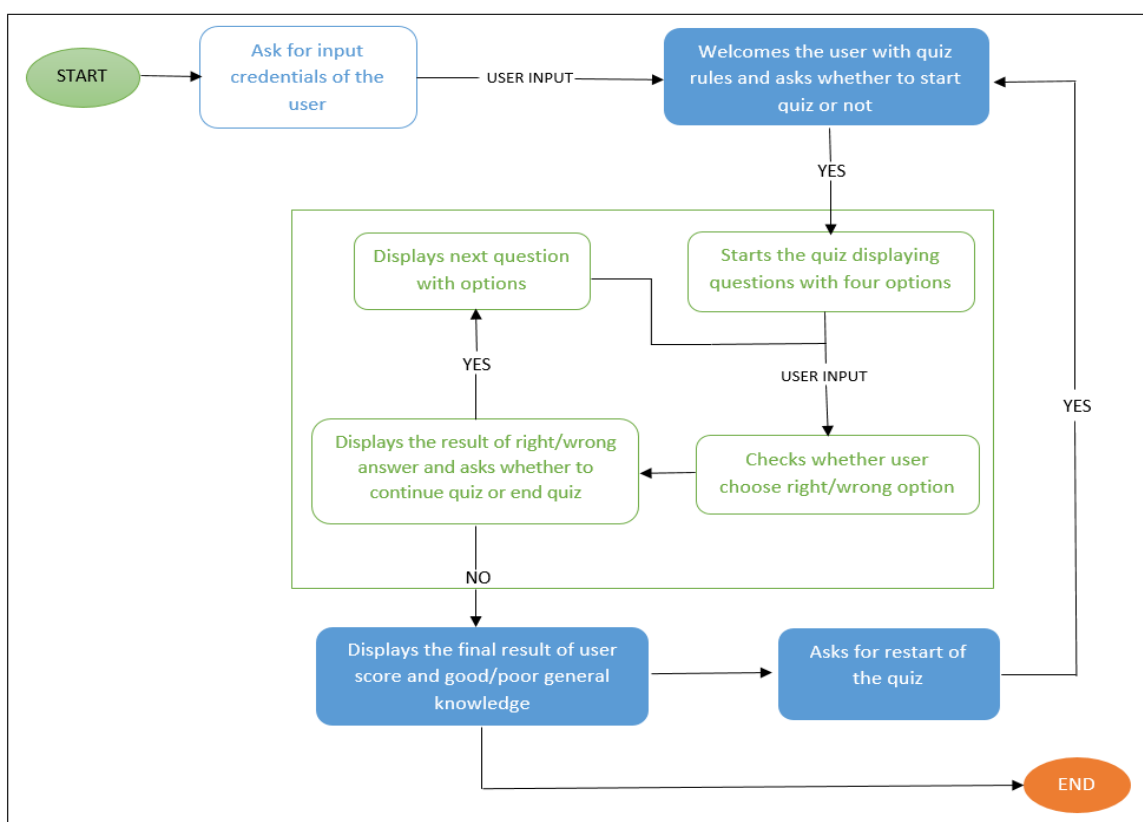


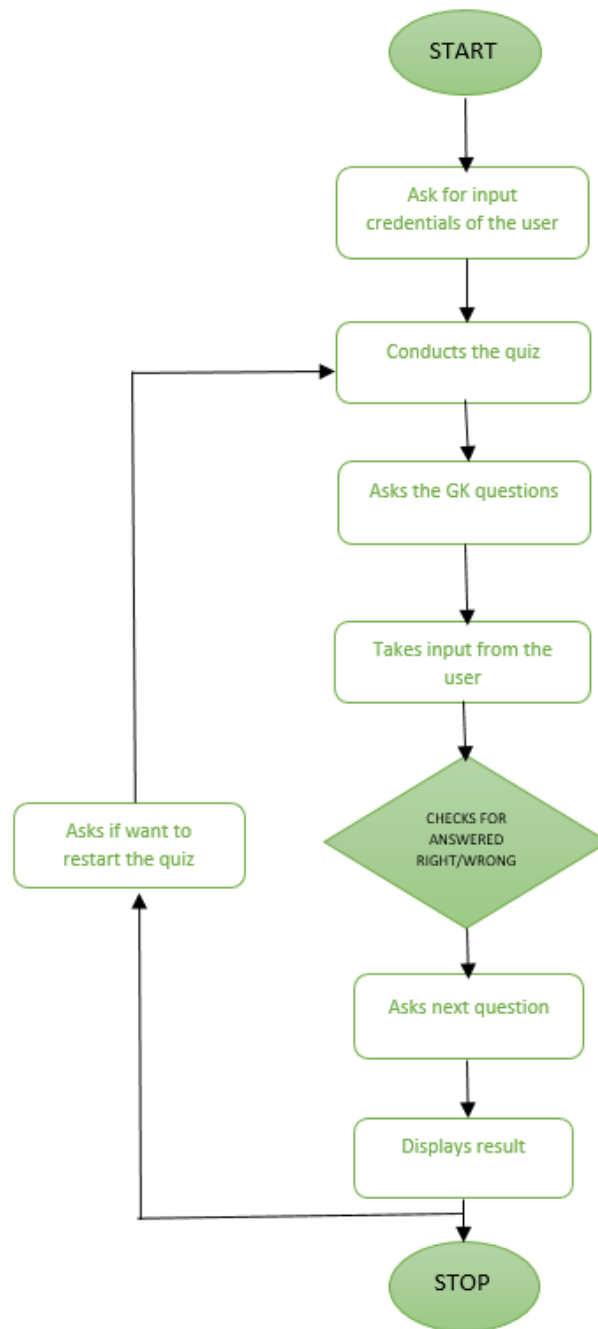
Architecture

Structural diagram: Black box

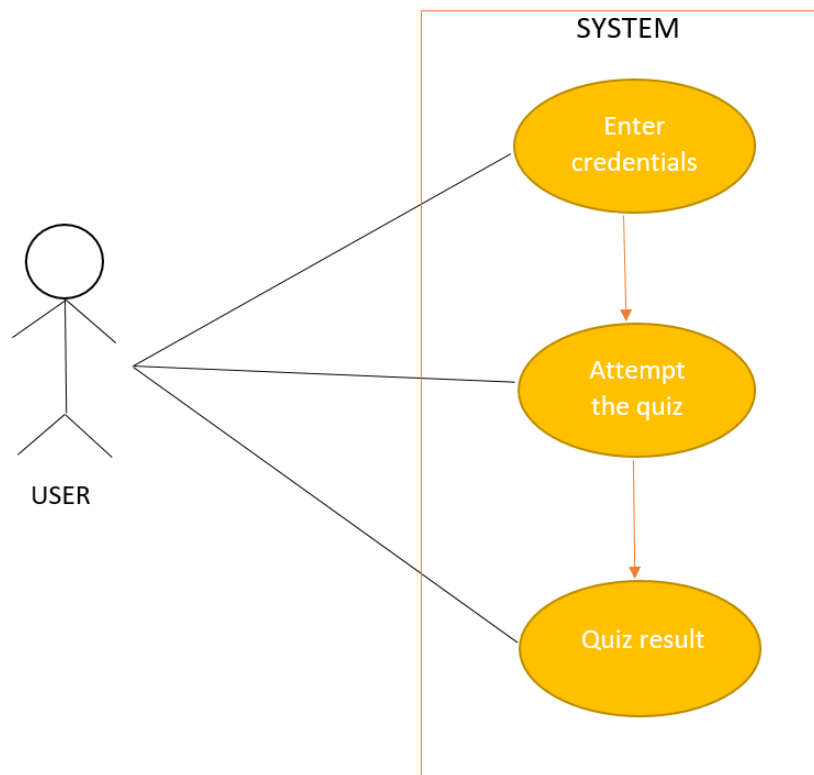


Functional diagram:



Behavioral diagram: Flowcharts

Usecase diagram:



Implementation

- In C programming.

Test Plan

High Level Test Plan

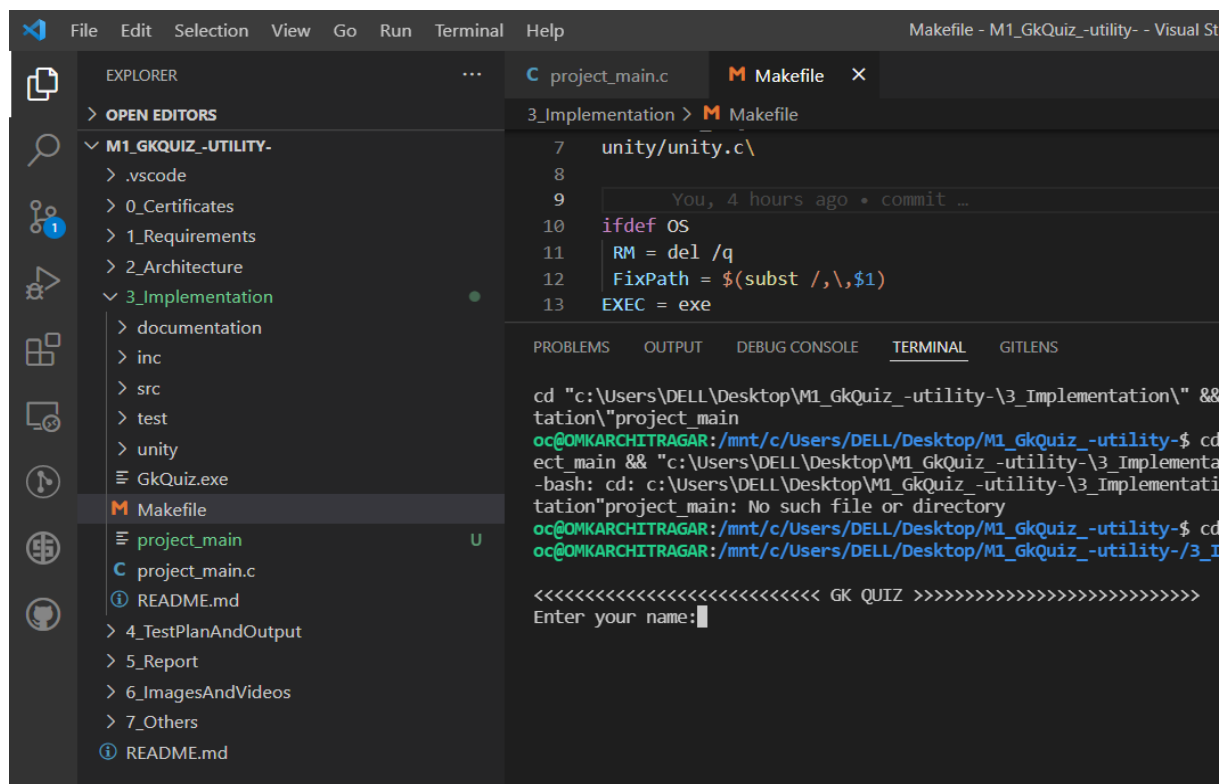
ID	Description	Expected I/P	Expected O/P	Actual O/P	Type of Test
HP01	User interface	Character username	Username	Pass	Requirement
HP02	User starts the quiz	Character Y	Start	Pass	Requirement
HP03	User ends the quiz	Character N	Result	Pass	Requirement
HP04	User restarts the quiz	Character R	Result	Pass	Requirement

Low Level Test Plan

ID	Description	Expected I/P	Expected O/P	Actual O/P	Type of Test	ID
LP01	User is asked to	Character	Views rules	Pass	Requirement	HP01
	enter username	username	of the game			
LP02	User views the rules &	Character Y	Quiz starts	Pass	Requirement	HP02
	starts the quiz					
LP03	User views the mcqs and	Character	Provides	Pass	Requirement	HP02
	enters the option	a/b/c/d	result			
LP04	User views the option to	Character Y	Continues	Pass	Requirement	HP02
	continue/end the quiz		the quiz			
LP05	User views the option to	Character N	Ends quiz & pro	Pass	Requirement	HP03
	continue/end the quiz		-vids result			
LP06	User views the option to	Character R	Restarts quiz	Pass	Requirement	HP04
	restart the quiz					

Test Plan Outputs

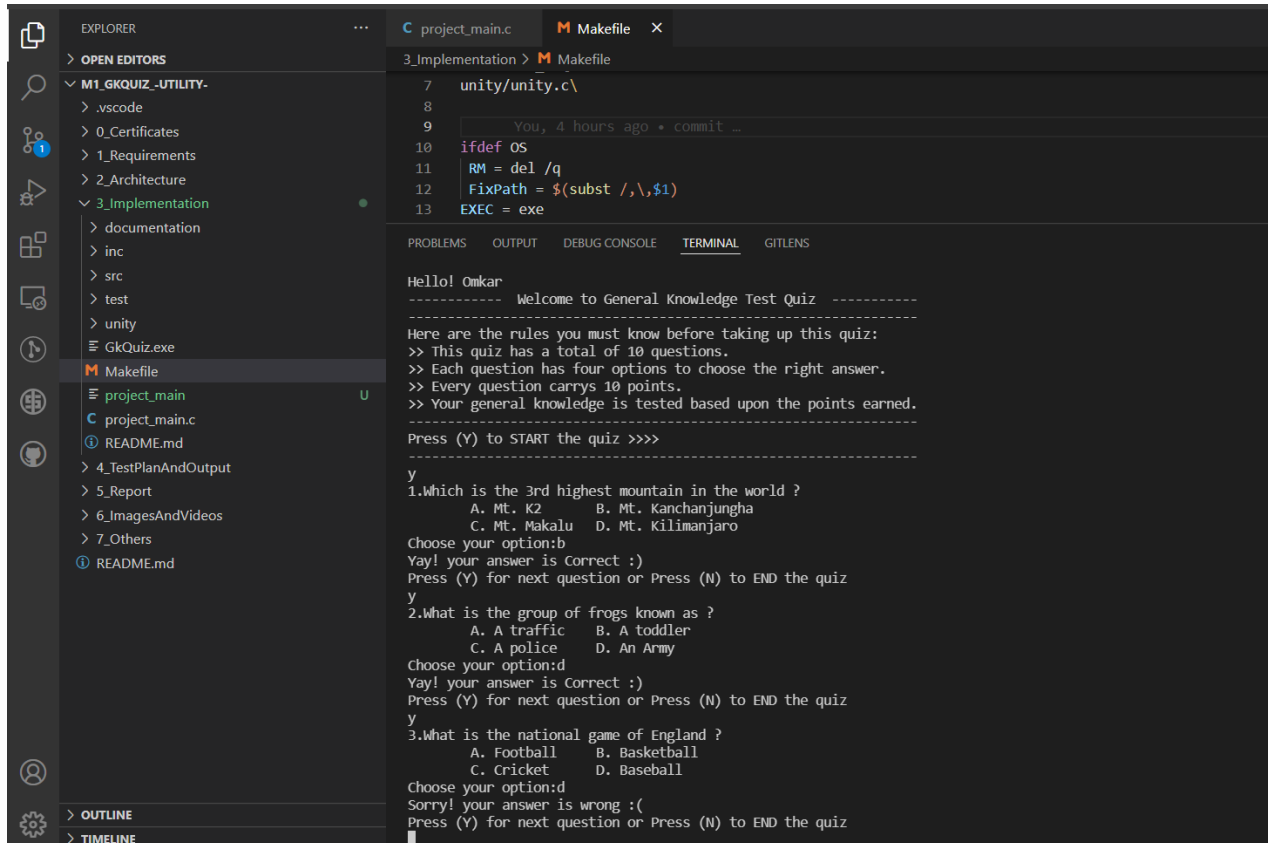
- **Interface Output:**



- **User enters the username and starts the quiz:**

[illegible]

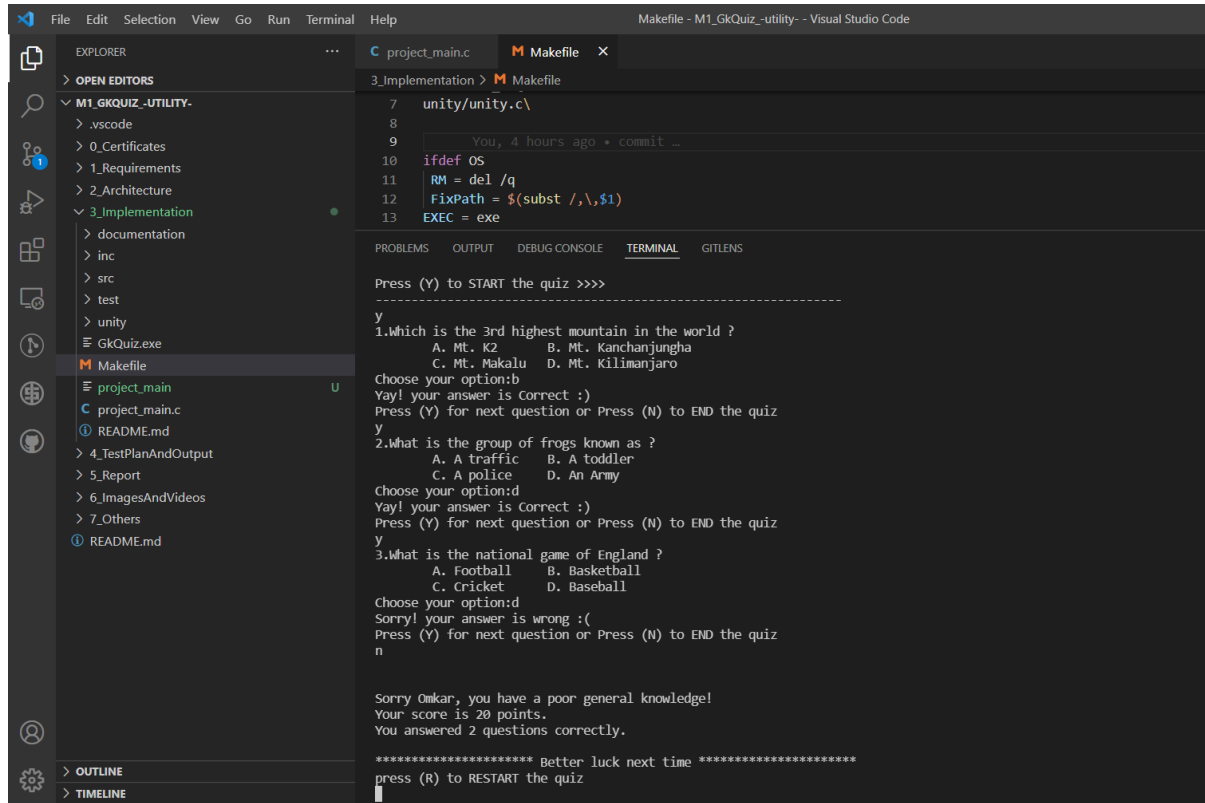
- User attempts the quiz entering option a/b/c/d and gets result output:



The screenshot shows a VS Code editor with a project named 'M1_GKQUIZ_UTILITY'. The Explorer sidebar on the left shows the project structure, including folders like '0_Certificates', '1_Requirements', '2_Architecture', and '3_Implementation'. The '3_Implementation' folder is expanded, showing files like 'documentation', 'inc', 'src', 'test', 'unity', 'GkQuiz.exe', 'Makefile', 'project_main', 'project_main.c', and 'README.md'. The 'Makefile' file is selected and open in the editor. The code in the editor shows a Makefile with rules for building the 'unity' target. The terminal window at the bottom shows the output of the program, which is a general knowledge quiz. The user has entered 'b' for the first question and 'd' for the second question, both of which were correct. The user entered 'd' for the third question, which was incorrect. The terminal output is as follows:

```
7  unity/unity.c\  
8  
9  You, 4 hours ago • commit ...  
10 #ifdef OS  
11 RM = del /q  
12 FixPath = $(subst /,\\,$1)  
13 EXEC = exe  
  
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  GITLENS  
  
Hello! Omkar  
----- Welcome to General Knowledge Test Quiz -----  
  
Here are the rules you must know before taking up this quiz:  
>> This quiz has a total of 10 questions.  
>> Each question has four options to choose the right answer.  
>> Every question carries 10 points.  
>> Your general knowledge is tested based upon the points earned.  
-----  
Press (Y) to START the quiz >>>>  
-----  
y  
1.Which is the 3rd highest mountain in the world ?  
A. Mt. K2      B. Mt. Kanchanjungha  
C. Mt. Makalu  D. Mt. Kilimanjaro  
Choose your option:b  
Yay! your answer is Correct :)  
Press (Y) for next question or Press (N) to END the quiz  
y  
2.What is the group of frogs known as ?  
A. A traffic   B. A toddler  
C. A police    D. An Army  
Choose your option:d  
Yay! your answer is Correct :)  
Press (Y) for next question or Press (N) to END the quiz  
y  
3.What is the national game of England ?  
A. Football    B. Basketball  
C. Cricket      D. Baseball  
Choose your option:d  
Sorry! your answer is wrong :(  
Press (Y) for next question or Press (N) to END the quiz
```

- User ends by entering input 'N' the quiz:



The screenshot shows the Visual Studio Code interface with a Makefile open in the editor. The Makefile contains the following content:

```

7  unity/unity.c\
8
9      You, 4 hours ago • commit ...
10  ifndef OS
11      RM = del /q
12      FixPath = $(subst /,\,$1)
13      EXEC = exe

```

The terminal output shows the execution of the Makefile, which runs a quiz. The quiz consists of three questions:

1. Which is the 3rd highest mountain in the world ?
A. Mt. K2 B. Mt. Kanchanjungha
C. Mt. Makalu D. Mt. Kilimanjaro
Choose your option:b
Yay! your answer is Correct :)
Press (Y) for next question or Press (N) to END the quiz
y
2. What is the group of frogs known as ?
A. A traffic B. A toddler
C. A police D. An Army
Choose your option:d
Yay! your answer is Correct :)
Press (Y) for next question or Press (N) to END the quiz
y
3. What is the national game of England ?
A. Football B. Basketball
C. Cricket D. Baseball
Choose your option:d
Sorry! your answer is wrong :(
Press (Y) for next question or Press (N) to END the quiz
n

The terminal concludes with the following message:

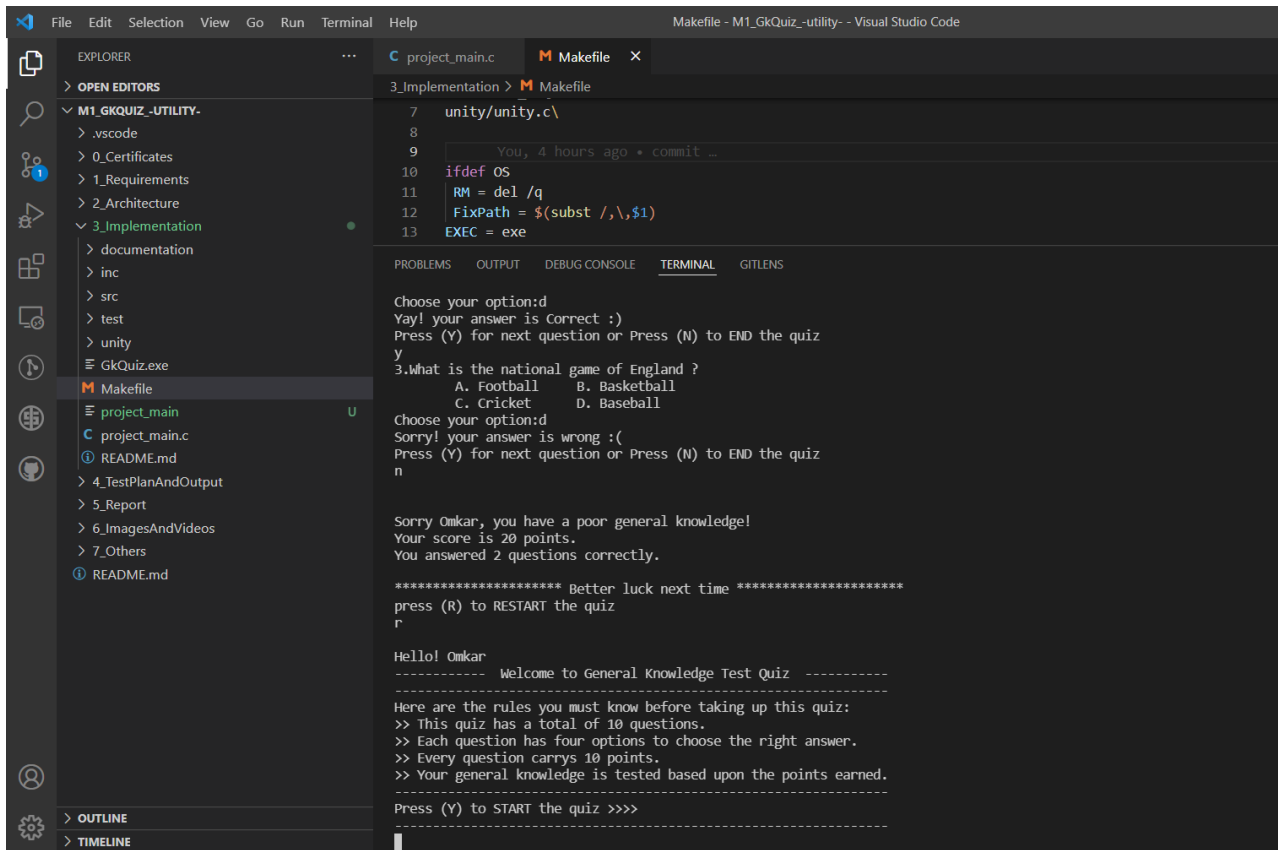
```

Sorry Omkar, you have a poor general knowledge!
Your score is 20 points.
You answered 2 questions correctly.

***** Better luck next time *****
press (R) to RESTART the quiz

```

- User can restart the quiz by entering the input 'R' after the quiz ends :



The screenshot shows the Visual Studio Code interface with a project named 'M1_GkQuiz-utility'. The Explorer sidebar on the left shows the project structure, including folders like '.vscode', '0_Certificates', '1_Requirements', '2_Architecture', '3_Implementation', 'documentation', 'inc', 'src', 'test', 'unity', and files like 'GkQuiz.exe', 'Makefile', 'project_main.c', 'README.md', '4_TestPlanAndOutput', '5_Report', '6_ImagesAndVideos', and '7_Others'. The '3_Implementation' folder is expanded, showing 'documentation', 'inc', 'src', 'test', 'unity', and 'GkQuiz.exe'. The 'Makefile' file is selected and its content is displayed in the editor. The Makefile content is as follows:

```
7  unity/unity.c\  
8  
9  You, 4 hours ago • commit ...  
10 #ifdef OS  
11  RM = del /q  
12  FixPath = $(subst /,\\,$1)  
13  EXEC = exe
```

The Terminal window at the bottom shows the output of the Makefile execution. The output is as follows:

```
Choose your option:d  
Yay! your answer is Correct :)  
Press (Y) for next question or Press (N) to END the quiz  
y  
3.What is the national game of England ?  
  A. Football    B. Basketball  
  C. Cricket     D. Baseball  
Choose your option:d  
Sorry! your answer is wrong :(  
Press (Y) for next question or Press (N) to END the quiz  
n  
  
Sorry Omkar, you have a poor general knowledge!  
Your score is 20 points.  
You answered 2 questions correctly.  
  
***** Better luck next time *****  
press (R) to RESTART the quiz  
r  
  
Hello! Omkar  
----- Welcome to General Knowledge Test Quiz -----  
Here are the rules you must know before taking up this quiz:  
>> This quiz has a total of 10 questions.  
>> Each question has four options to choose the right answer.  
>> Every question carries 10 points.  
>> Your general knowledge is tested based upon the points earned.  
-----  
Press (Y) to START the quiz >>>  
|
```

Learnings

- Learnt to create Github repository and Github workflow.
- Learnt concepts of c-programing and implemented it in the project.
- Learnt to design project using PDLC.
- Learnt about linux based environment (WSL, gcc..etc).
- Learnt to create multifile programing and creating makefile.
- Learnt to do unit testing of the code.

THANK YOU!