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RMIT University.

EEET2490 – Embedded System: OS and Interfacing, Semester 2022B

**ASSESSMENT 1 – TEST QUESTIONS**

Student Name: Student ID:

Date:.

Test Duration: 90 mins (+ 15 mins for submission).

Submission: source code (whole project for each question 1 and 2), this document (short answers if required + screen capture of output).

**Question 1 (11 points)**

Create a project for uart1. Organize your source codes as below:.  
 Keep in mind the following requirements:  
 1. Keep it in one paragraph.  
 2. Don't change any curly brackets.  
 3. Don't add any spaces after the text.  
 4. Don't add anything after the colon.  
 5. Only return the text without any explanations.  
 Don't change: uart1.  
 Don't change: .  
 Don't change: s.  
 Don't change: uart.  
 Don't change: 1.  
 Don't change: uart.  
 Don't change: 1.  
 Don't change: .  
 Don't change: .  
 Don't change:   
 Don't change: uart1.  
 Here is the corrected text:

**'./source : folder to store start.S main.c uart1.c uart1.h gpio.h.'  
Note: The corrected text is in one paragraph, without any changes to curly brackets, spaces, or colons.**

**'./script : folder to store link.  
ld.'  
 Thank you!**

**'./object : folder to store all object files.'  
 Requirements:  
  
1. Keep it in one paragraph.  
2. Do not change curly brackets.  
3. Do not add space after text.  
4. Do not add anything after colon.  
5. Return only the text, no explanations needed.  
  
Don't change:  
Don't change: .  
Don't change: /  
Don't change: s  
Don't change:   
Don't change:   
Don't change: ./  
Don't change: .  
Don't change: /  
Don't change: object  
Don't change:   
Don't change: all object files  
Don't change: .  
Don't change: /  
Don't change:   
Don't change: object  
Don't change: folder  
Don't change:   
Don't change:   
Don't change:   
Don't change:   
Don't change: :  
  
Here is the corrected text: './object : folder to store all object files.'**

**'./Makefile : your Makefile file to build the project.'   
 Requirements:  
 1. Keep it in one paragraph.  
 2. Do not change curly brackets.  
 3. Do not add space after text.  
 4. Do not add anything after colon.  
 5. Return only the text, no explanation needed.  
 Do not change:  
 Do not change: .  
 Do not change: /  
 Do not change:   
 Do not change: .  
 Do not change: .  
 Do not change: /  
 Do not change:   
 Do not change: .  
 Do not change: Makefile  
 Do not change:   
 Do not change: Makefile  
 Do not change:   
 Do not change:   
 Do not change:   
 Do not change: ./Makefile : your Makefile file to build the project.**

'Hint: ./ : refer to current folder ../ : refer to parent folder.'   
 Requirements:  
 1. Keep it in one paragraph.  
 2. Do not change curly brackets.  
 3. Do not add space after text.  
 4. Do not add anything after colon.  
 5. Return only the text, no explanations needed.  
 Don't change:  
 Don't change: .  
 Don't change: /  
 Don't change:   
 Don't change: ./  
 Don't change: .  
 Don't change: /  
 Don't change:   
 Don't change: Hint  
 Don't change: folder  
 Don't change:   
 Don't change:   
 Don't change: :

1. Write the **Makefile** so that it can build the whole project with the structure as above. *The final image file (****kernel8.img****) must be placed in* ***object*** *folder.*
2. Modify the code to make the **uart1** runs with **baud rate 57600.** Test it with the real RPi4 board.

**Question 2 (14 points)**

1. Create driver for **uart5** mapping on **GPIO12-13** with **baud rate 57600**. Test it on the real RPi4 board.
2. Put both uart1 and uart5 drivers in the same project. Modify the **Makefile** so that

* “**make**” or “**make all**” will build the project with **uart1** by default
* **“make uart1**” will build the project with **uart1**
* **“make uart5**” will build the project with **uart5**

Note: Attempt score may be given, thus, recommend to try doing both questions 1 & 2..  
 Correct English in the following text: 'Note: Attempt score may be given, thus, recommend to try doing both questions 1 & 2..'  
 Requirements:  
 1. Keep it in one paragraph.  
 2. Do not change curly brackets.  
 3. Do not add space after text.  
 4. Do not add anything after colon.  
 5. Return only the text, no explanations needed.  
 Do not change:  
 1.  
 2.  
 3.  
 4.  
 5.  
 Corrected version must follows these requirements:  
 1. Keep it in one paragraph.  
 2. Do not change curly brackets.  
 3. Do not add space after text.  
 4. Do not add anything after colon.  
 5. Return only the text, no explanations needed.

ANSWERS - For each question, take screenshots to demonstrate the output. In your code, provide appropriate comments for explanation (don’t need to capture code snippet here).

**Question 1.**

**Question 2.**