Keys to success

(1/1 point)

What are some important aspects to consider while taking this class?

- The best way to learn is to do
- A bottom-up approach to learning is to start with something you know and then abstract it
- For this class to be successful, you will need to get help from your fellow students and/or give help to your fellow students
- Risk-taking while exploring design decisions builds a creative mind
- Valvano and Yerraballi want you to try until you succeed
- An effective team size is 2 or 3 students
- All of the above ✔

Definitions

(2/2 points)

Please match the following terms with the letter of their appropriate definitions.

- 4. Real-time Systems
- Discussion Board

Latency

C

A. A guarantee to meet all deadlines

Evolution

D

B. Amount of information transferred or processed per time

Real time

A

C. Time delay from request to service

Bandwidth

B

D. Incremental change to improve performance, features and reliability

Operating system

E

E. Software layer between the application software and the hardware

Regular versus Real-time OS

(1/1 point)

Which type of OS is simpler than the other?

- Regular OS
- RTOS ✔

Which type of OS is fairness more important than timeliness?

- Regular OS ✔

- RTOS

Which type of OS is average bandwidth more important than upper and low limits of bandwidth?

- Regular OS ✔
- RTOS

Which type of OS requires one to know all the hardware components?

- Regular OS
- RTOS ✔

Which type of OS handles plug and play? In other words a new hardware device can be added and the OS figures out how to use it.

- Regular OS ✔
- RTOS

Flash ROM

(1/1 point)

How many bytes in a kibibyte?

1024 ✔

1024

How many kibibytes of Flash ROM are in the MSP432 and TM4C123?

256 ✔

256

How many kibibytes of RAM are in the MSP432?

64 ✔

64

How many I/O pins are there on the TM4C123?

43 ✔

43

Push/Pop order on the stack

(1/1 point)

Assume register R0 is initially contains 0, R1 is initially contains 1, and R2 is initially contains 2. These instructions are executed

PUSH {R0,R1,R2}

POP {R1,R2,R0}

What is in R0 after this software is executed?

0 ✔

0

Serial I/O

(1/1 point)

Which of the following I/O devices is serial?

- UART

- SSI or SPI
- I2C
- CAN
- Ethernet
- All of the above ✔

LCD interface

(1/1 point)
Which of the following I/O devices does the LCD in this lab use?

- UART
- SSI or SPI ✔
- I2C
- PWM
- ADC
- None of the above

Accessing memory from assembly language

(1/1 point)
Let **Data** be a 32-bit global variable. Consider these assembly instructions:

LDR R0,=Data
What is the effect of executing these instructions?

- R0 has the contents of the **Data**
- R0 has the address of the current instruction
- R0 has the address of the variable **Data** ✔
- None of the above

ARM Architecture Procedure Call Standard

(1/1 point)
Which of the following is an AAPCS rule?

- The stack must be balanced
- The first input parameter, if it exists, is passed in R0 ✔
- The output parameter, if it exists, is returned in R1
- The stack must be aligned to 4 bytes (word-aligned)
- When one function calls another, the return address is pushed on the stack

Correct:
The second, third and fourth input parameters would be passed in R1, R2, R3 respectively

Debugging Terms

(2/2 points)

Please match the following terms with the letter of their appropriate definitions.

Black-box testing

C

A. A measure of the degree of perturbation caused in program performance by the debugging instrument itself

Logic analyzer

D

B. Measures voltage amplitude versus time

Intrusiveness

A

C. Observe the inputs and outputs without looking inside

Oscilloscope

B

D. Multiple channel digital storage device

Dump

E

E. Record strategic information into arrays


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