CS1022 Tutorial #0 Recap on CS1021

This tutorial has two aims: to see how much ARM assembly you remember and to refresh the content of CS1021. It is not marked and does not count towards grading in anyway. Rather than gathering and marking the tutorials, we will try using DirectPoll to collect answers. Each question has a link to its answer page.

1) Which of the following is the largest?

Link:Poll

- a) 70 Kib
- b) 70 kB
- c) 70 kb
- d) 70 KiB
- e) Apollo 11's guidance computer's memory
- 2) Which of the following code snippets will store the sequence of integers [17, 256] in memory. R0 is the address of some space, R1 is 17 and R2 is 256. **Link:**Poll

```
a)
  START
                                         START
      CMP R2, R1
                                             CMP R2, R1
      BLT stop
                                             BLT stop
      STR R1, [R0]
                                             STR R1, [R0]
      ADD R0, R0, #1
                                             ADD R0, R0, #4
      ADD R1, R1, #1
                                             ADD R1, R1, #1
          START
                                                 START
c)
                                      d)
  START
                                         START
      CMP R2, R1
                                             LDR R3, =1
      BLT stop
                                             CMP R1, R2
                                             BGT stop
      STRB
              R1, [R0]
      ADD R0, R0, #1
                                                     R1, [R0]
                                             STRH
      ADD R1, R1, #1
                                             ADD R0, R0, R3,
                                                              LSL #1
                                             ADD R1, R1, #1
          START
      B
                                                 START
```

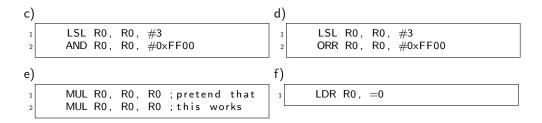
3) Which of the following code snippets will leave R0 with the highest value. R0 starts at -100 (0xFFFFF9F) for each snippet.

```
Highest unsigned value
Highest signed value
```

```
Link:Poll
```

```
a) b)

1 ASR R0, R0, #4
2 EOR R0, R0, #0xFF 1 LSR R0, R0, #4
2 EOR R0, R0, #0xFF
```



- 4) Which of the following makes the condition code flags as $Z=0,\ V=0,\ C=0,\ N=0$ using SUBS and ADDS as appropriate? Link:Poll
 - a) $0 \times 80000000 + 0 \times 800000000$
 - b) $0\times80000000 + 0\times7FFFFFF$
 - c) 0xFFFFCFC7 + 0x00003039
 - d) 0x6E0074F2 + 0x211D6000
 - e) $0 \times 00003039 0 \times FFFFCFC7$
- 5) Write a program to convert some ASCII text stored in memory to uppercase. It should ignore whitespace and punctuation and leave uppercase letters alone.