

# Assignment 6, Part A

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# 1 Group

Independent

## 2 Code Snippet

The NOR instruction is not part of the RISC-V instruction set because the same functionality can be implemented using existing instructions. Write a short assembly code snippet that has the following functionality:  $s3 = s4 \text{ NOR } s5$ . Use as few instructions as possible.

```
1      or s3, s4, s5 # s3 = s4 OR s5
2      xori s3, s3, -1 # s3 = s3 XOR -1
```

## 3 Code Snippet 2

Write RISC-V assembly code for placing the following immediate constants in register s7. Use a minimum number of instructions.

a)

```
1      addi s7, x0, 59 # s7 = 59
```

b)

```
1      addi s7, x0, -199 # s7 = -199
```

c)

```
1      lui s7, 0xDDCBE289 # s7 = 0xDDCBE000
2      andi t0, 0xDDCBE289, 4095 # t0 = 0x00000289
3      add s7, s7, t0 # s7 = 0xDDCBE289
```

d)

```
1      lui s7, 0x11236BDF # s7 = 0x11236000
2      andi t0, 0x11236BDF, 4095 # t0 = 0x00000BDF
3      add s7, s7, t0 # s7 = 0x11236BDF
```