Microprocessor and Computer Architecture Laboratory

UE19CS256

4th Semester, Academic Year 2020-21

Date:24-01-2021

Name: A.Narendiran	SRN:PES1UG19CS001	Section A

Week#____1_____Program Number: ____1___

Title of the Program

Write an ALP using ARM instruction set to add and subtract two 32 bit numbers .Both numbers are in registers.

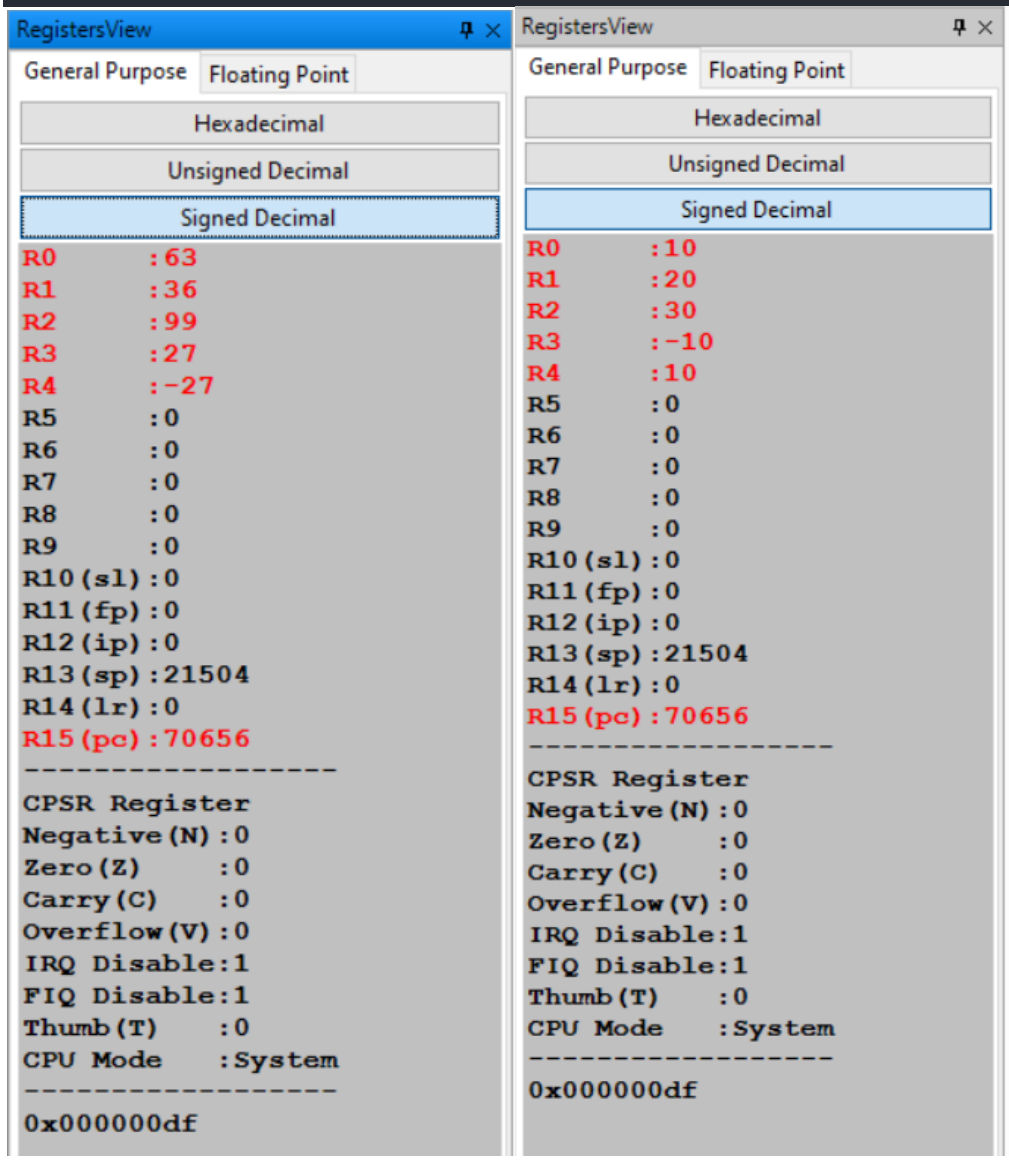
I. ARM Assembly Code for each program
II. Final Output Screen Shot (Register Window, Output window)
The output should be verified with 2 test cases (one example shown in class, one example of own choice)

```
.text

; addition
MOV r0, #63
MOV r1, #36
ADD r2, r0, r1

; subtraction
MOV r0, #96
MOV r1, #69
SUB r3, r0, r1
SUB r4, r1, r0

.end
```



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4th Semester, Academic Year 2020-21

Date:

Name: A.Narendiran	SRN: PES1UG19CS001	Section A

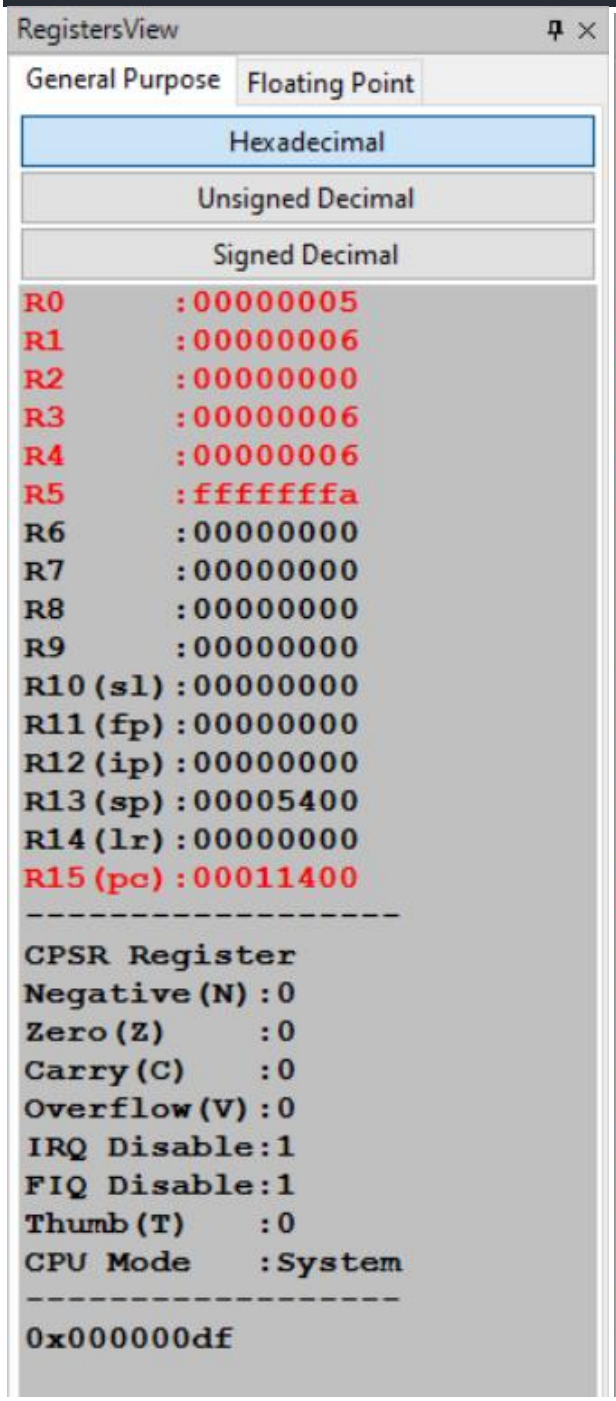
Week#____1_____ Program Number: ____2___

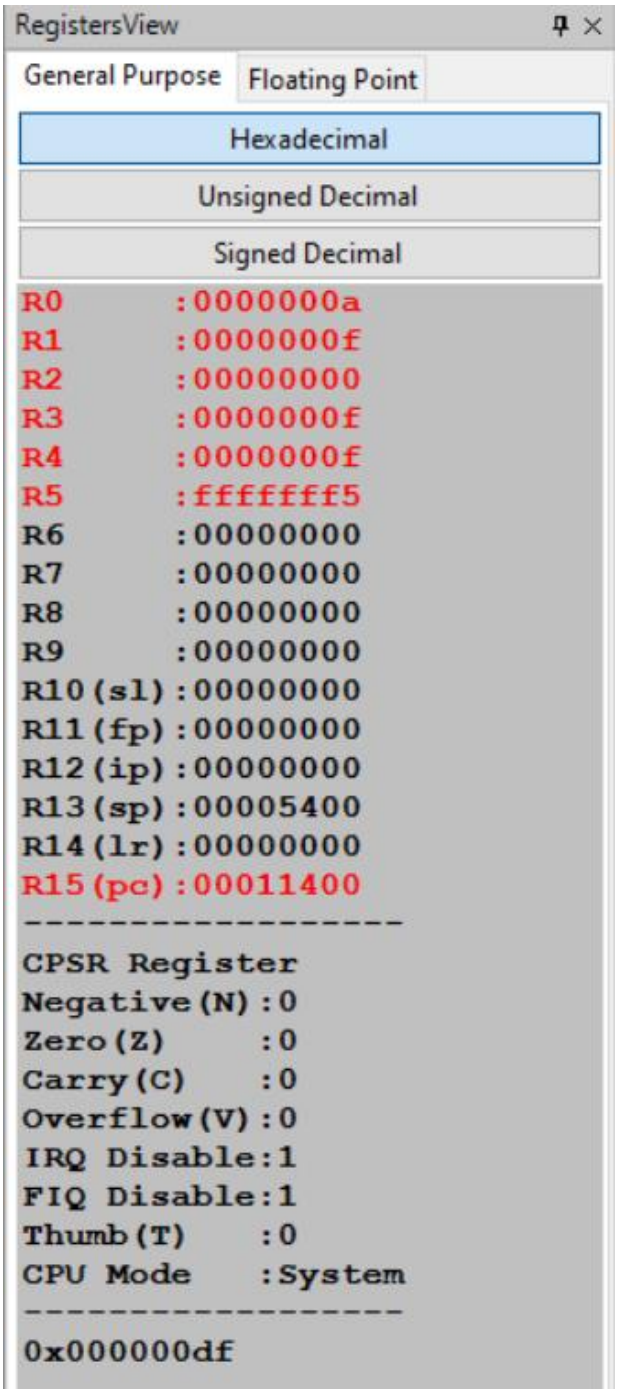
Title of the Program

Write an ALP to demonstrate logical operations. All operands are in registers.

I. ARM Assembly Code for each program
II. Final Output Screen Shot (Register Window, Output window)
The output should be verified with 2 test cases (one example shown in class, one example of own choice)

```
.text
MOV r0, #5
MOV r1, #6
AND r2, r1, r2
ORR r3, r1, r2
EOR r4, r1, r2
MVN r5, r0
.end
```





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4th Semester, Academic Year 2020-21

Date:

Name: A.Narendiran	SRN: PES1UG19CS001	Section A

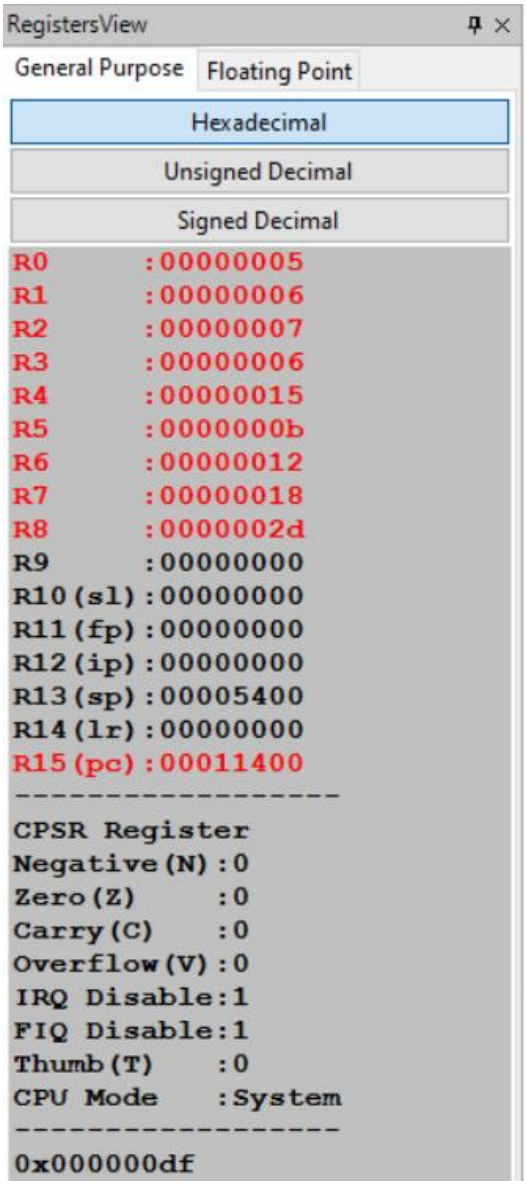
Week#____1_____ Program Number: ____3___

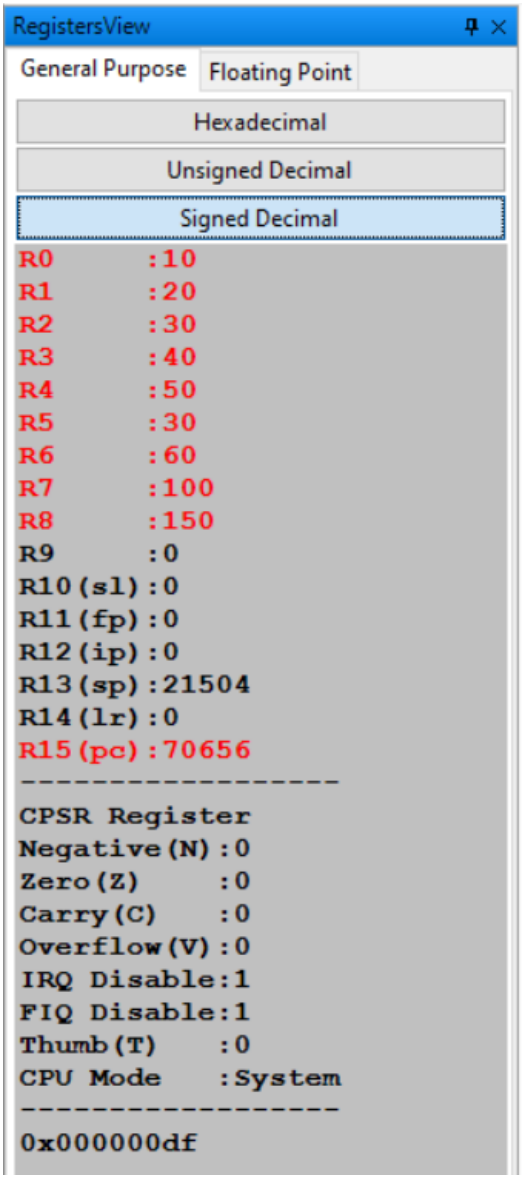
Title of the Program

Write an ALP to add 5 numbers where values are present in registers.

I. ARM Assembly Code for each program
II. Final Output Screen Shot (Register Window, Output window)
The output should be verified with 2 test cases (one example shown in class, one example of own choice)

```
.text
MOV r0, #0x05
MOV r1, #0x06
MOV r2, #0x07
MOV r3, #0x06
MOV r4, #0x15
ADD r5, r0, r1
ADD r6, r5, r2
ADD r7, r6, r3
ADD r8, r7, r4
.end
```





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4th Semester, Academic Year 2020-21

Date:

Name: A.Narendiran	SRN: PES1UG19CS001	Section A

Week#____1_____ Program Number: ____4___

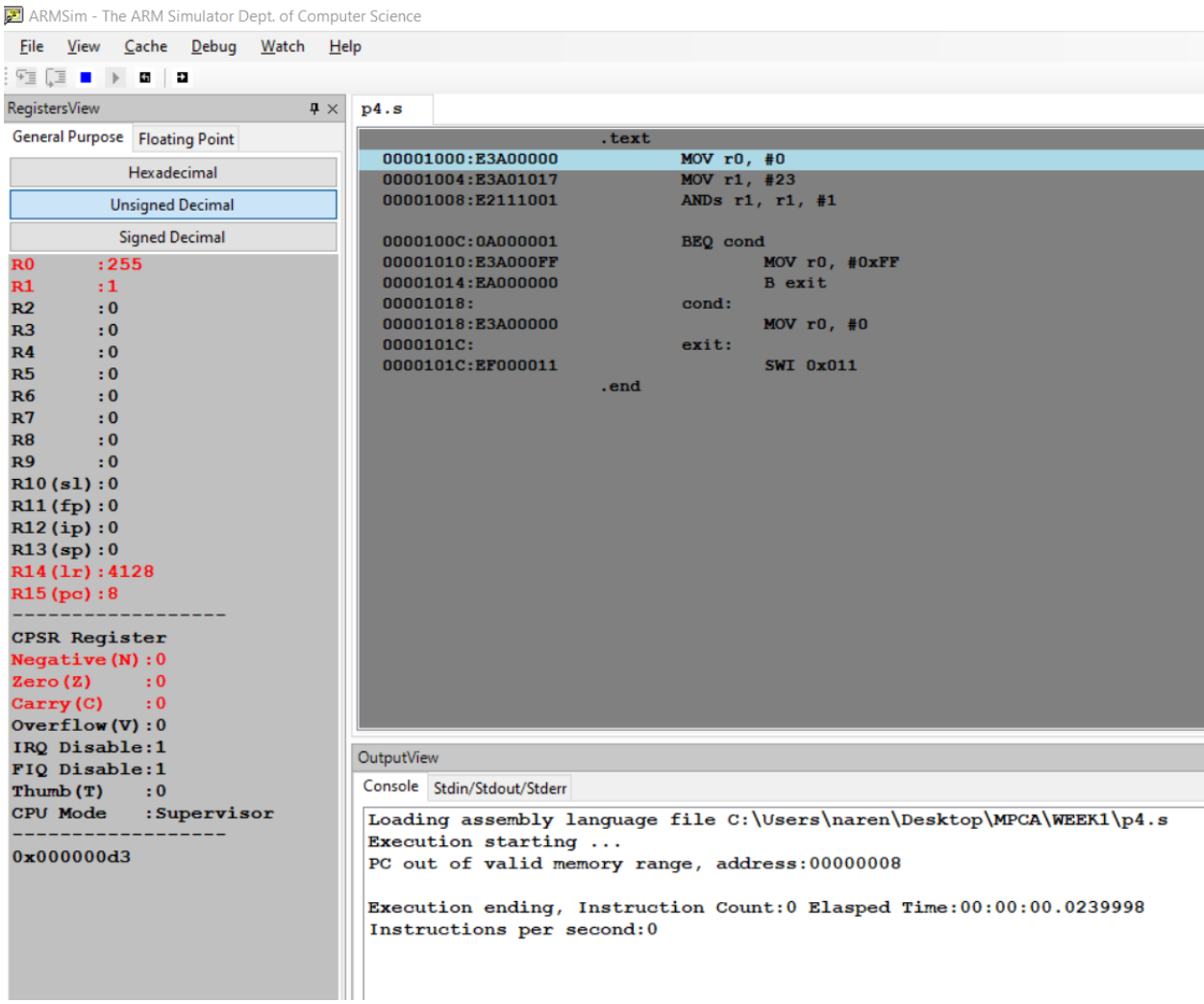
Title of the Program

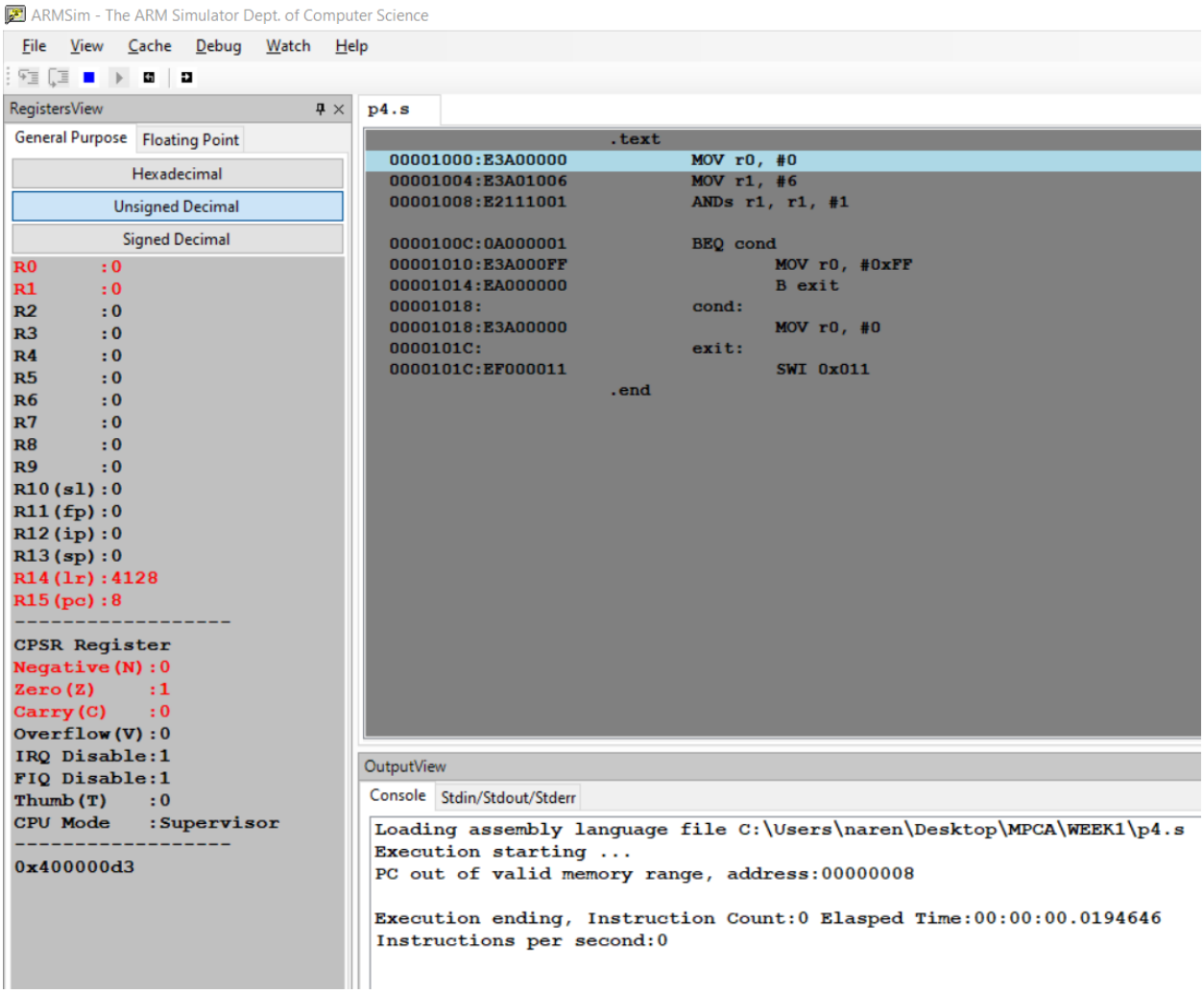
Write an ALP using ARM instruction set to check if a number stored in a register is even or odd. If even, store 00 in R0, else store FF in R0

I. ARM Assembly Code for each program
II. Final Output Screen Shot (Register Window, Output window)
The output should be verified with 2 test cases (one example shown in class, one example of own choice)

```
.text
        MOV r0, #0
        MOV r1, #23
        ANDs r1, r1, #1

        BEQ cond
                MOV r0, #0xFF
                B exit
        cond:
                MOV r0, #0
        exit:
                SWI 0x011
.end
```





Disclaimer:

- The programs and output submitted is duly written, verified and executed by me.
- I have not copied from any of my peers nor from the external resource such as internet.
- If found plagiarized, I will abide with the disciplinary action of the University.

Signature:
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SRN: PES1UG19CS001
Section: A
Date:24-01-2021