### Nirbhay Sharma (B19CSE114) MIPS - Programming Assignment

When greater than branch does not execute

```
= 4194364
EPC
       = 0
       = 0
Cause
BadVAddr = 0
Status = 805371664
     = 0
ΗI
\mathbf{LO} = 0
R0 \quad [r0] = 0
R1 \quad [at] = 0
R2 [v0] = 10
R3 \quad [v1] = 0
R4 [a0] = 4
R5 [a1] = 2147479176
R6 [a2] = 2147479196
R7 [a3] = 0
R8 [t0] = 3
R9 [t1] = 4
R10 [t2] = 1
R11 [t3] = 0
R12 [t4] = 0
R13 [t5] = 0
R14 [t6] = 0
R15 [t7] = 0
R16 [s0] = 0
R17 [s1] = 0
R18 [s2] = 0
R19 [s3] = 0
R20 [s4] = 0
R21 [s5] = 0
```

When greater than branch executed

```
PC
       = 4194376
EPC
         = 0
Cause
         = 0
BadVAddr = 0
Status = 805371664
HI
         = 0
LO
         = 0
R0
   [r0] = 0
R1
   [at] = 1
R2 [v0] = 10
R3
   [v1] = 0
R4
   [a0] = 4
R5
   [a1] = 2147479176
   [a2] = 2147479196
R6
R7
   [a3] = 0
R8 [t0] = 5
R9 [t1] = 4
R10 [t2] = 9
R11 [t3] = 0
R12 [t4] = 0
R13 [t5] = 0
R14 [t6] = 0
R15 [t7] = 0
R16 [s0] = 0
R17 [s1] = 0
R18 [s2] = 0
R19 [s3] = 0
R20 [s4] = 0
R21 [s5] = 0
```

2) since multiplication is repetitive addition so going by the same approach (since mul,mult operations are not allowed)

```
PC = 4194364
EPC
        = 0
Cause
        = 0
BadVAddr = 0
Status = 805371664
HI
        = 0
         = 0
LO
    [r0] = 0
R0
R1 [at] = 0
R2 [v0] = 10
R3 [v1] = 0
R4 [a0] = 4
R5 [a1] = 2147479176
R6 [a2] = 2147479196
R7 [a3] = 0
R8 [t0] = 200
R9 [t1] = 10
R10 [t2] = 2000
R11 [t3] = 0
R12 [t4] = 1
R13 [t5] = 0
R14 [t6] = 0
R15 [t7] = 0
R16 [s0] = 0
R17 [s1] = 0
R18 [s2] = 0
R19 [s3] = 0
R20 [s4] = 0
R21 [s5] = 0
3)
 Console
enter first number: 10
enter second number: 4
max is : 10
```

4) output of mips code on the following inputs

# enter length of string: 5 enter the string: 12091

# Console

enter length of string: 5 enter the string: 10#4# 0

## 5) output of implemented code

# Console

array after bubble sort: 0 1 2 5 7 8 9 10 12 14