.data

Prompt1: .asciiz "1st Number: "

Prompt2: .asciiz "2nd Number: "

Answer: .asciiz "Answer: "

Operators: .ascii "a. Arithmetic Operations:\n"

.ascii "1. Integral Quotient(/) 2. Multiply(\*)\n"

.ascii "3. Addition(+) 4. Subtraction(-)\n"

.ascii "b. Logical Operations\n"

.ascii "5. And(|) 6. Or(^)\n"

.ascii "7. Shift Left(<<) 8. Shift Right(>>)\n"

.asciiz "Select any of the above mentioned numbers: "

Message1: .ascii "\nTwo integers are operated and there\n"

.asciiz "answer is being called as 1st Number\n"

Message2: .asciiz "\nThis is the final answer"

nextLine: .asciiz "\n"

Error: .asciiz "Runtime Error! You have entered an invalid input\n"

.text

main:

li $v0, 4

la $a0, Prompt1

syscall

li $v0, 5

syscall

move $a1, $v0

jal inputNumber

move $a2, $v1

jal enterOperator

move $t0, $v1

beq $t0, 1, Division

beq $t0, 2, Multiplication

beq $t0, 3, Addition

beq $t0, 4, Subtraction

beq $t0, 5, AND

beq $t0, 6, OR

beq $t0, 7, shiftLeft

beq $t0, 8, shiftRight

move $a3, $v1

bne $t1, 10, end

jal printAnswer

move $a1, $a0

li $v0, 4

la $a0, Message1

syscall

li $v0, 4

la $a0, Prompt1

syscall

li $v0, 1

move $a0, $a1

syscall

li $v0, 4

la $a0, nextLine

syscall

jal inputNumber

move $a2, $v1

jal enterOperator

move $t0, $v1

beq $t0, 1, Division

beq $t0, 2, Multiplication

beq $t0, 3, Addition

beq $t0, 4, Subtraction

beq $t0, 5, AND

beq $t0, 6, OR

beq $t0, 7, shiftLeft

beq $t0, 8, shiftRight

move $a3, $v1

bne $t1, 10, end

jal printAnswer

move $a1, $a0

li $v0, 4

la $a0, Message2

syscall

end:

bne $t1, 10, error

li $v0, 10

syscall

inputNumber:

li $v0, 4

la $a0, Prompt2

syscall

li $v0, 5

syscall

move $v1, $v0

jr $ra

enterOperator:

li $v0, 4

la $a0, Operators

syscall

li $v0, 5

syscall

move $v1, $v0

jr $ra

printAnswer:

li $v0, 4

la $a0, Answer

syscall

li $v0, 1

move $a0, $a3

syscall

jr $ra

Division:

beq $a2, 0, error

div $a1, $a2

mflo $v1

li $t1, 10

jr $ra

Multiplication:

mult $a1, $a2

mflo $v1

li $t1, 10

jr $ra

Addition:

add $v1, $a1, $a2

li $t1, 10

jr $ra

Subtraction:

sub $v1, $a1, $a2

li $t1, 10

jr $ra

AND:

and $v1, $a1, $a2

li $t1, 10

jr $ra

OR:

or $v1, $a1, $a2

li $t1, 10

jr $ra

shiftLeft:

sllv $v1, $a1, $a2

li $t1, 10

jr $ra

shiftRight:

srlv $v1, $a1, $a2

li $t1, 10

jr $ra

error:

li $v0, 4

la $a0, Error

syscall