**Create a simple Assembly program on mars or VVM to Check for vowels and consonants.**

.data

prompt: .asciiz "Enter a character: "

result: .asciiz "\nThe character is a "

vowel: .asciiz "vowel."

consonant: .asciiz "consonant."

.text

.globl main

main:

# Print the prompt

la $a0, prompt

li $v0, 4

syscall

# Read in the character

li $v0, 12

syscall

# Check if the character is a vowel

beq $v0, 'a', print\_vowel

beq $v0, 'e', print\_vowel

beq $v0, 'i', print\_vowel

beq $v0, 'o', print\_vowel

beq $v0, 'u', print\_vowel

beq $v0, 'A', print\_vowel

beq $v0, 'E', print\_vowel

beq $v0, 'I', print\_vowel

beq $v0, 'O', print\_vowel

beq $v0, 'U', print\_vowel

# The character is a consonant

j print\_consonant

print\_vowel:

# Print "The character is a vowel."

la $a0, result

li $v0, 4

syscall

la $a0, vowel

li $v0, 4

syscall

j exit

print\_consonant:

# Print "The character is a consonant."

la $a0, result

li $v0, 4

syscall

la $a0, consonant

li $v0, 4

syscall

exit:

# Exit the program

li $v0, 10

syscall

**For example, assigning grades (A, B, C) based on marks obtained by a student. if the percentage is above 90, assign grade A if the percentage is above 75, assign grade B if the percentage is above 65, assign grade C create a simple program on mars or VVM to maintain student profile like (Name. Enrollment, Batch, Semester) and display its mark sheet**

.data

name: .asciiz "Name: "

enrollment: .asciiz "Enrollment: "

batch: .asciiz "Batch: "

semester: .asciiz "Semester: "

marks: .asciiz "Marks: "

grade: .asciiz "Grade: "

newline: .asciiz "\n"

student\_name: .space 32

student\_enrollment: .space 32

student\_batch: .space 32

student\_semester: .space 32

A: .asciiz "A"

B: .asciiz "B"

C: .asciiz "C"

D: .asciiz "D"

.text

.globl main

main:

# Read in the student name

la $a0, name

li $v0, 4

syscall

la $a0, student\_name

li $v0, 8

li $a1,32

syscall

# Read in the enrollment number

la $a0, enrollment

li $v0, 4

syscall

la $a0, student\_enrollment

li $v0, 8

syscall

# Read in the batch

la $a0, batch

li $v0, 4

syscall

la $a0, student\_batch

li $v0, 8

syscall

# Read in the semester

la $a0, semester

li $v0, 4

syscall

la $a0, student\_semester

li $v0, 8

syscall

# Read in the marks

la $a0, marks

li $v0, 4

syscall

li $v0, 5

syscall

move $t3, $v0 # Save the marks in $t0

# Calculate the percentage

div $t0,$t3, 100

#mflo $t0

# Determine the grade

ble $t3, 65, print\_D

ble $t3, 75, print\_C

ble $t3, 90, print\_B

j print\_A

print\_A:

# Print "A"

la $a0, A

li $v0, 4

syscall

j exit

print\_B:

# Print "B"

la $a0, B

li $v0, 4

syscall

j exit

print\_C:

# Print "C"

la $a0, C

li $v0, 4

syscall

j exit

print\_D:

# Print "D"

la $a0, D

li $v0, 4

syscall

exit:

# Print a newline and exit the program

la $a0, newline

li $v0, 4

syscall

li $v0, 10

syscall

**AND GATE: 7408**

**VCC**

**GROUND**

**PROBE**

**SPDT**

**OR GATE: 7432**