

Experiment 1

Q1) Kandilli Observatory and Earthquake Research Institute has asked you to write a C program implementing the following decision table to characterize an earthquake based on its Richter scale number.

Richter scale number (R)	Characterization
$R < 5.0$	Little or no damage
$5.0 \leq R < 5.5$	Some damage
$5.5 \leq R < 6.5$	Serious damage
$6.5 \leq R < 7.5$	Disaster
Higher	Catastrophe

Q2) A platform shown in the figure below will be lifted up from the ground, increasing by 2 degrees (Θ) per second. Write a program that finds the maximum value of Θ before the load on the platform starts to slip. You should simulate your program every second and check if the necessary condition is satisfied.

The necessary condition and equations for the load on the platform to not slip:

$$F_s > F_x$$

$$F_x = W \cdot \sin(\Theta_{\text{radian}})$$

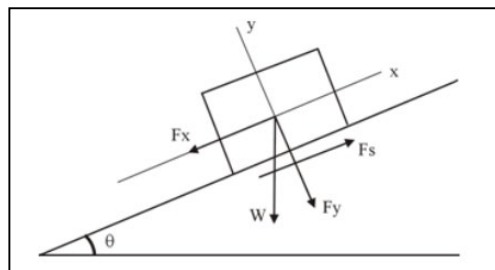
$$F_y = W \cdot \cos(\Theta_{\text{radian}})$$

$$F_s = F_y \cdot \mu$$

$$\mu = 0.6 \quad \text{and} \quad W = 100 \text{ N}$$

$$\Theta_{\text{degree_initial}} = 0^\circ$$

$$\Theta_{\text{radian}} = \Theta_{\text{degree}} \cdot \pi / 180^\circ \quad (\pi = 3.14)$$



Please don't forget to include the math header (`#include <math.h>`)