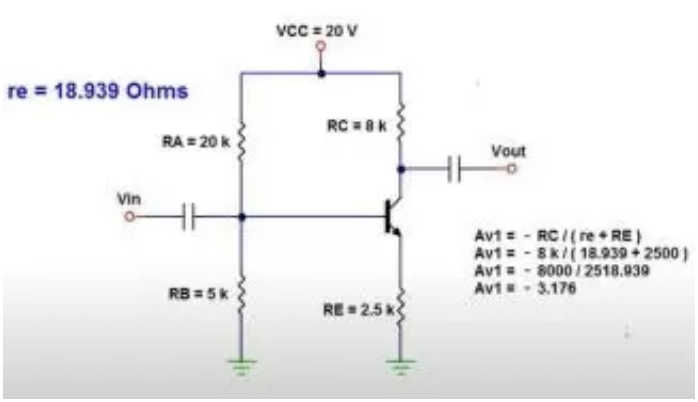
Task 1: Report

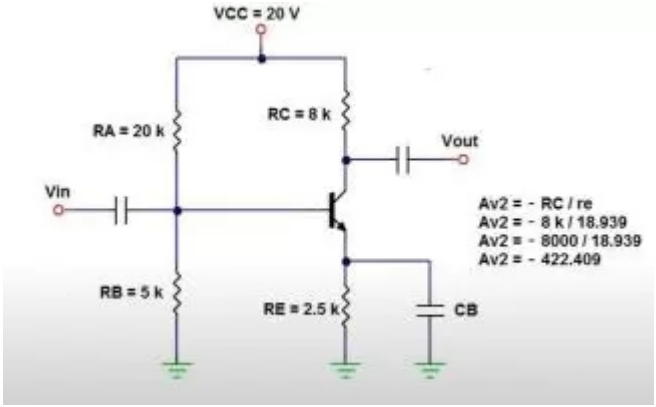
Bypass capacitor :

bypass capacitor allow the AC current to bypass the resistance of the emitter that effectively remove the emitter resistance from the output gain and cause increasing in amplifier AC gain.

Without Bypass Capacitor



With Bypass Capacitor



Inductor Material Core:

the core affect on the performance of the inductor and there are a lot of core materials that varies according to their effect. For example These inductors have an iron or ferrite core, have more effect on the inductor to These inductors which have air core .

Another core materials :Powdered Iron Core Inductors,Laminated Core Inductors.

All of these material are important and each of them have a lot of applications . So let’s see the applications of each .

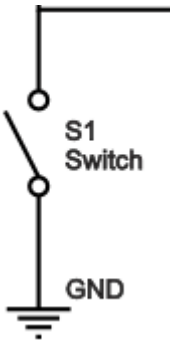
Applicaitons :

Air Core Inductors :High-frequency applications such as RF circuits ,Tuned circuits in communication devices.

*Iron Core Inductors:*Power supplies and power conversion,Audio equipment

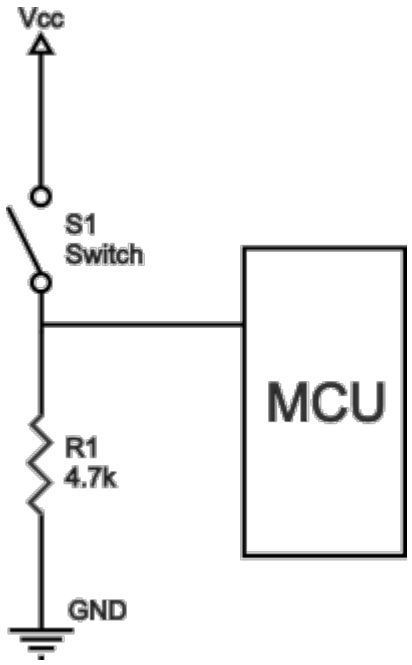
*Powdered Iron Core Inductors:*Energy storage in power converters, Inductive components in wireless charging systems

problem : when a module connected to a switch if the switch is pressed then the value will be on/off but when the switch is released then the value will be floating and unpredicted . So let's solve this problem .

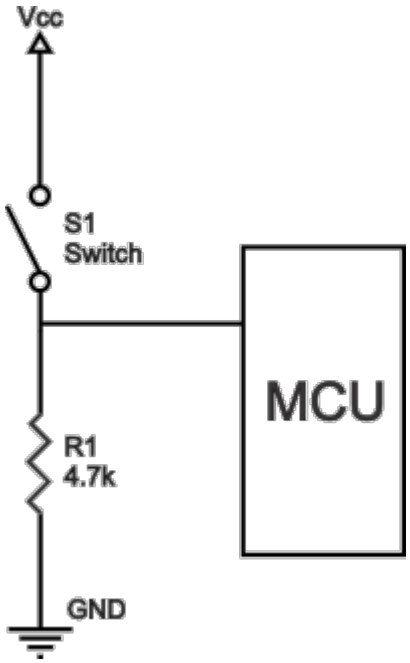


Solution : We can use a resistance that connected to Vcc(pull-up) or ground(pull-down) to make the module always receive on/off .

Pull-Down Resistor



Pull-Up Resistor



References :

ref : Electronics Technician Training Course
ref: EEPOWER