Q1. What are microtasks? What is a microtask queue? What is their role in Promises and how are they different from callbacks?

A microtask is a small function which acts as a callback function with higher priority

Microtask queue can be explained using below example,

setTimeout(function greet(){

console.log(“Hello worls”);

},2000);

The above code needs to get into call stack, but we do not have timer function provided by call stack. We have web API which provides timer functionality so after waiting for 2000ms the callback function will be sent to call stack for execution using Event Loop. But callback function directly cannot be sent to Event Loop, so micro queue/call back queue stores these callback functions in FIFO manner after the timer gets expired. Callback queue stores callback functions and event loop checks if the call stack is empty and if empty pushes the callback function from callback queue to call stack, this call stack will create execution context and executes it.

Microtask queue is similar to callback queue but it stores callback functions of higher priority(ex: callback returned by promise)

Q2. Explain with examples how private, protected variables can be implemented in classes and how can they be used in subclasses?

Ex: class Car {

Private int wheelCount=4;

Protected int wheelSize;

System.out.println(wheelCount)

}

Class Maruti extends Car{

Public int getCustomWheelSize(){

Return 2\*wheelSize;

}

}

Private variables in a class can only be accessible to functions of the same class. Even subclass cannot access the private variables of parent class. If subclass needs access to parent class variables, it has to be marked as protected. So, protected variables use case comes only in the case of Inheritance, variables marked protected in parent class can be accessed by it’s child classes.

In the above example Car is the parent class which is inherited by it’s child class Maruti, since wheelCount is marked as private it can only be printed in Car class(parent) but not in child class(Maruti). wheelSize is marked as protected to it can be access by child class(getCustomWheelSize()). getCustomWheelSize() is a public method it can be by the classes who has this object.