**Question number 1**

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

**Explained in the below example:-**

Console.log(‘START’)

setTimeOut(function () { console.log(‘setTimeout1’)}, 0);

promise.resolve()

.then(function () {console.log{‘promise1’)})

.then(function () {console.log{‘promise2’)})

setTimeOut(function () { console.log(‘setTimeout2’)}, 0);

console.log(‘END)

The output will be

START

END

Promise1

Promise2

SetTimeout1

Settimeout2

In the above example we use Promise.resolve() to mimic what would happen when we get back data from our Fetch.

First the Global code pushed to the call stack, when thats finished the output in the Microtask Queue gets pushed into the call stack and once the Microtask Queue is empty, the outputs in the callback Queue gets pushed to the call stack.

### Question number 2

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

public scope to make that property/method available from anywhere, other classes and instances of the object.

private scope when you want your property/method to be visible in its own class only.

protected scope when you want to make your property/method visible in all classes that extend current class including the parent class.

### Example:

### Public:

package abcpackage;

public class Addition {

/\* Since we didn't mention any access modifier here, it would

\* be considered as default.

\*/

int addTwoNumbers(int a, int b){

return a+b;

}

}

package xyzpackage;

/\* We are importing the abcpackage

\* but still we will get error because the

\* class we are trying to use has default access

\* modifier.

\*/

import abcpackage.\*;

public class Test {

public static void main(String args[]){

Addition obj = new Addition();

/\* It will throw error because we are trying to access

\* the default method in another package

\*/

obj.addTwoNumbers(10, 21);

}

}

### Output:

Exception in thread "main" java.lang.Error: Unresolved compilation problem:

The method addTwoNumbers(int, int) from the type Addition is not visible

at xyzpackage.Test.main(Test.java:12)

Private access modifier

class ABC{

private double num = 100;

private int square(int a){

return a\*a;

}

}

public class Example{

public static void main(String args[]){

ABC obj = new ABC();

System.out.println(obj.num);

System.out.println(obj.square(10));

}

}

**Output**:

Compile - time error

### Protected Access Modifier

Addition.java

package abcpackage;

public class Addition {

protected int addTwoNumbers(int a, int b){

return a+b;

}

}

Test.java

package xyzpackage;

import abcpackage.\*;

class Test extends Addition{

public static void main(String args[]){

Test obj = new Test();

System.out.println(obj.addTwoNumbers(11, 22));

}

}

Output:

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