C

Application 1: Vehicle manufacturing and industrial processes

1. An automated production line robot must be able to assemble vehicle parts accurately and efficiently according to instructions.
   * Extension 1: The robot must be able to detect and alert maintenance technicians when a malfunction occurs.
   * Extension 2: The robot must be able to adjust its assembly process based on the type of vehicle being manufactured.
2. A quality control inspector must be able to easily access and review production data to ensure that vehicles are being manufactured to meet quality standards.
   * Extension 1: The system must be able to generate a report on the number of defects found in each production batch.
   * Extension 2: The system must be able to track the production history of each vehicle.

Maybe its wrong

Application 2: Human Resources Management

1. An HR administrator must be able to easily manage employee information and track employee performance.
   * Extension 1: The system must be able to generate reports on employee performance and attendance.
   * Extension 2: The system must be able to track employee vacation time and sick days.
2. A Recruiter must be able to easily access and manage candidate resumes and information for current open positions.
   * Extension 1: The system must be able to sort and filter resumes based on qualifications and experience.
   * Extension 2: The system must be able to send automatic interview reminders to candidates.

Maybe its wrong

E) usability requirements for the user stories

Application 1: Vehicle manufacturing and industrial processes

1. An automated production line robot must be able to assemble vehicle parts accurately and efficiently according to instructions.

• Usability requirement 1: For maintenance personnel, the robot's interface must be straightforward and uncomplicated.

• Usability requirement 2: For convenient maintenance, the robot must be remotely controllable.

• Usability requirement 3: The robot must be simple to program for various assembly procedures.

1. A quality control inspector must be able to easily access and review production data to ensure that vehicles are being manufactured to meet quality standards.
   * Usability requirement 1: The user interface of the system must be straightforward to use and enable rapid searches for relevant information.
   * Usability requirement 2: The system must be able to deliver easily comprehensible reports on production data.
   * Usability requirement 3 states that the system must be simple to use across a range of devices.
2. An HR administrator must be able to easily manage employee information and track employee performance.

* Usability requirement 1: The system's interface must be easy to navigate and search through for relevant data.
* Usability requirement 2: The system must be able to generate clear and easy-to-understand reports on employee performance and attendance.
* Usability requirement 3: The system must be accessible from multiple devices for easy access.

Q 3 A

import unittest

def percentage(num1, num2):

if num1 > 0 and num2 > 0 and num1 <= num2:

return (num1 / num2) \* 100

else:

return -1

class TestPercent(unittest.TestCase):

def test\_valid\_input(self):

self.assertEqual(percent(50, 100), 50)

self.assertEqual(percent(75, 100), 75)

def test\_invalid\_input(self):

self.assertEqual(percent(-25, 100), -1)

self.assertEqual(percent(50, -100), -1)

self.assertEqual(percent(0, 100), -1)

self.assertEqual(percent(50, 0), -1)

if \_\_name\_\_ == '\_\_main\_\_':

unittest.main()

result = -1

if num1 > 0 and num2 > 0 and num2 > num1:

result = (num1 / num2) \* 100

| **Test Case** | **num1** | **num2** | **Expected Output** |
| --- | --- | --- | --- |
| 1 | 50 | 100 | 50 |
| 2 | 75 | 100 | 75 |
| 3 | -25 | 100 | -1 |
| 4 | 50 | -100 | -1 |
| 5 | 0 | 100 | -1 |
| 6 | 50 | 0 | -1 |

| **Category** | **Test Data** | **Expected Result** |
| --- | --- | --- |
| Temperature < 300 | 299 | Danger: temperature is below 300 degrees. |
| Temperature >= 300 and temperature < 650 | 300 | Warning: temperature is between 300 and 650. |
| Temperature > 300 and temperature <= 650 | 650 | Warning: temperature is between 300 and 650. |
| Temperature > 650 and temperature < 800 | 700 | The reactor is operating within the standard range of 650 to 800. |
| Temperature >= 650 and temperature <= 800 | 800 | The reactor is operating within the standard range of 650 to 800. |
| Temperature > 800 and temperature < 950 | 900 | The reactor is operating within the standard range of 800 to 950. |
| Temperature >= 800 and temperature <= 950 | 950 | The reactor is operating within the standard range of 800 to 950. |
| Temperature < 1100 and Temperature > 950 | 1000 | Warning: temperature is above 950 but below 1100. |
| Temperature <= 1100 and Temperature >= 950 | 1100 | Warning: temperature is above 950 but below 1100. |
| Temperature > 1100 | 1101 | Danger: temperature is above 1100. |

| **Test Case** | **Input** | **Expected Output** |
| --- | --- | --- |
| Test Case 1 | 42 | "You got it!" |
| Test Case 2 | 0 | "Too low" |
| Test Case 3 | 100 | "Too high" |
| Test Case 4 | 50 | "Too low" |