UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

Creative Design and Innovation (CDI)
Grade 12 (GEN / ICA_GEN / SSA_GEN)

THE EMIRATES

Week 5 – Assessment Checkpoint 2 – Machine Learning Task (Interactive Handout)

Student ID. / رقم الطّالب	Enter your Student ID
Student Name / اسم الطّالب	Enter your Student Name
School Name / اسم المدرسة	
Subject / المادّة	**Creative Design and Innovation**

Grade & Stream / الصّف والمسار	**Choose an item.**	Class / الشّعبة	Enter your class
Activity Number *(or name)*	**Assessment Checkpoint 2**	Date	Enter the date.

- It is prohibited to photocopy or circulate this paper before, during or after the Checkpoint through email, social media, or any other means; and whoever violates this will be subject to followed legal proceedings.
- School administrations, Exam Committees and Marking centres shall take this into account, monitor violations and take necessary measures.

In this assessment, you will develop a machine learning model to train the computer to recognise –

> **(a) "kind" statements with a "happy" smiley**
> **(b) "mean" statements "with a "sad" smiley**

The "confused" smiley is used as default reaction of the computer.

"Table 1" below shows the three different smileys your computer will use to show a reaction towards the message you type:

Confused	**Happy**	**Sad**

Table 1

You should complete the instructions in "Table 2" below before you develop the training model:

Table 2

Step No.	Instructions
1.	Go to https://machinelearningforkids.co.uk/
2.	**"Log In"** into the website as per your teacher's instructions. **_Note:_** You can complete this step using any of the following options: (a) Already registered? **Log in** — **Use your registered email ID and password.** (b) Try without registering **Try it now** — **You do not need any log in credentials in this case.**

Step No.	Instructions
3.	Click on "**Projects**" on the top menu bar.
4.	Click the **"+ Add a new project"** button.
5.	Name your project "**<Class>_<Name>_CP2**" and set it to learn how to recognise "**text**".
6.	Click the "**Create**" button. You should now see "**<Class>_<Name>_CP2**" in the list of your projects. Click on it.
7.	Click "**Make**".
8.	Click the "**Scratch 3**" button.
9.	Click "**Scratch by itself**". ***Note:*** *The page will warn you that you haven't done any machine learning yet, but clicking on Scratch by itself will launch Scratch anyway.*
10.	Click on "**File**".
11.	Click on "**Load from your computer**". ***Note:*** Download the Scratch code provided on LMS and use it to complete this step.
12.	Click the **green flag** to test.
13.	Type in a message and watch it react! Type "I think you are awesome" and press enter. You can see a "happy" smiley. Click the green flag again and type "You smell bad". You can see a "sad" smiley. Type anything else, and the smiley won't change.
14.	Close the Scratch window.

After completing the above steps, you will observe the following:

- **smiley reacts as per the statements phrased exactly the way they were written in the code.**
- **smiley will not change, if the statements are not present in the code.**

Task 1:

Train the model to recognise between "kind" and "mean" statements as mentioned below:

Table 3

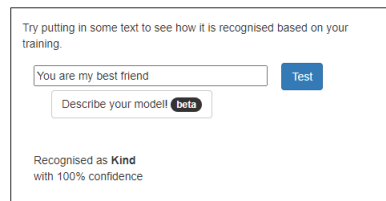| Kind statements	Mean statements
1. You are my best friend	1. I disrespect you
2. You are a lovely person	2. You smell bad
3. You look beautiful	3. I do not want to be friends with you
4. You look amazing	4. I do not like going to your house
5. Your house is beautiful	5. This color does not suit you

7 Marks

Task 2:

(a) **Complete the "Learn & Test" step to train the computer to recognise between "kind" and "mean" statements.**

(b) **After you complete Task 2(a), you will be able to test your machine learning model by typing in text and observing if it was trained well enough to give the correct output in the following box–**
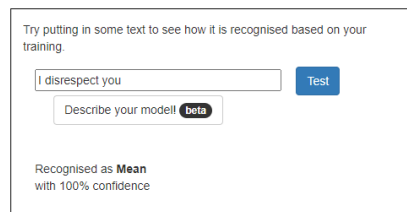
Try putting in some text to see how it is recognised based on your training.

enter a test text here   Test

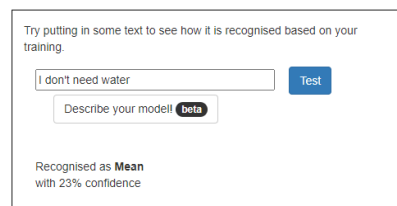**Complete the table below by pasting the picture of the output as per the given instructions in the box shown above:**

5 Marks

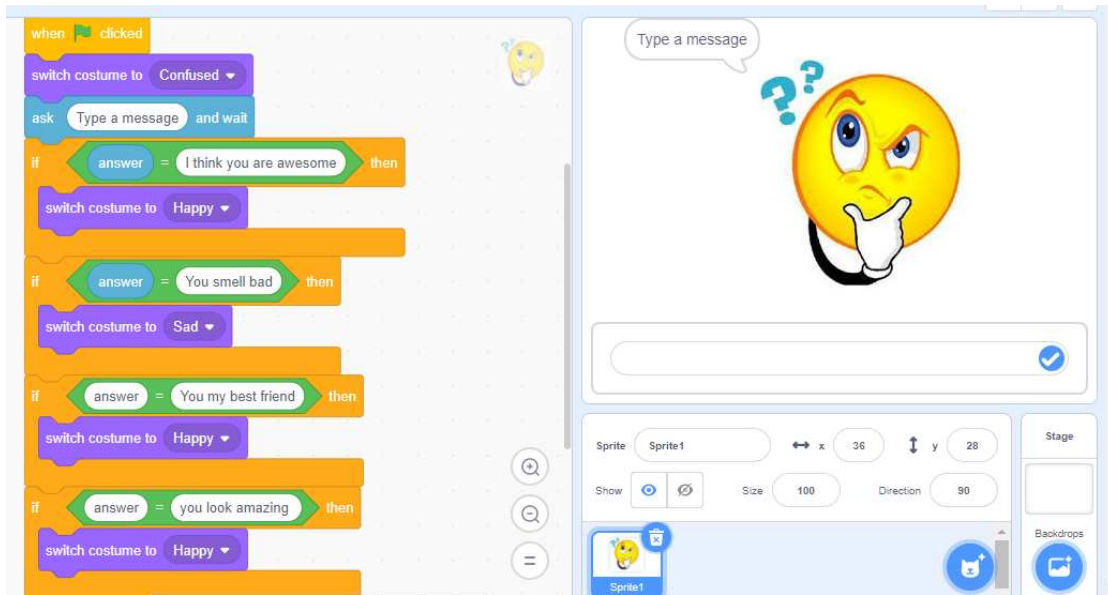|	
(i) Enter a "Kind" statement from Table 3.	Try putting in some text to see how it is recognised based on your training. You are my best friend Test Describe your model! beta Recognised as **Kind** with 100% confidence
(ii) Enter a "Mean" statement from Table 3.	Try putting in some text to see how it is recognised based on your training. I disrespect you Test Describe your model! beta Recognised as **Mean** with 100% confidence
(iii) Enter a statement different from the Training statements.	Try putting in some text to see how it is recognised based on your training. I don't need water Test Describe your model! beta Recognised as **Mean** with 23% confidence

Task 3: Modify the given Scratch code to use the trained Machine Learning model to recognise between "kind" and "mean" statements. The code should respond to 'kind' statements with a happy smiley face, and to 'mean' statements with a sad smiley face. Paste a picture of your modified code below.	4 Marks

Task 4: Select "True" or "False" for the following statements regarding the machine learning model developed in Tasks 1 – 3 above.	4 Marks

(a) The model uses a "supervised learning" algorithm to recognise between kind and mean statements.

◉ True

○ False

(b) The model is an example of "regression" problem.

◉ True

○ False

Total Marks	Click or tap here to enter text./ 20

Save your file using the naming convention: '*CP2- <your student id>.docx*'
For example, if your student id is 25678, then your file name would be: CP2 - 25678.docx

Submit back to your teacher through LMS. *(lms.moe.gov.ae)*