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## 2024-08-20

- TPU memory usage and utilization can now be checked with `!tpu-info`
- Gemini Chat responses are now grounded in relevant sources
- Added a new "Create Gemini API key" link in the user secrets panel
- Added a new "Gemini: Creating a prompt" snippet and touched up the existing "Gemini: Connecting to Gemini" snippet
- Added the ability to specify custom placeholder text for various interactive form params (see [examples](#))
- Keyboard navigation a11y improvements to comments UI
- Various minor rendering improvements to interactive forms UI
- A11y improvements for the run button and header
- Updated tooltip styling
- A11y improvements for the file browser's disk usage bar
- On mobile, tooltips now trigger on long press
- On mobile, release notes updates will no longer display automatically
- Python package upgrades
  - astropy 5.3.4 -> 6.1.2
  - bigframes 1.11.1 -> 1.14.0
  - bokeh 3.3.4 -> 3.4.3
  - dask 2023.8.1 -> 2024.7.1
  - earthengine-api 0.1.412 -> 0.1.416
  - geopandas 0.13.2 -> 0.14.4
  - kagglehub 0.2.8 -> 0.2.9
  - keras 2.15.0 -> 3.4.1
  - lightgbm 4.1.0 -> 4.4.0
  - malloy 2023.1067 -> 2024.1067
  - numba 0.58.1 -> 0.60.0
  - numpy 1.25.2 -> 1.26.4
  - opencv-python 4.8.0.76 -> 4.10.0.84
  - pandas 2.0.3 -> 2.1.4
  - pandas-gbq 0.19.2 -> 0.23.1
  - panel 1.3.8 -> 1.4.5
  - requests 2.31.0 -> 2.32.3
  - scikit-learn 1.2.2 -> 1.3.2
  - scipy 1.11.4 -> 1.13.1
  - tensorboard 2.15.2 -> 2.17.0
  - tensorflow 2.15.0 -> 2.17.0
  - tf-keras 2.15.1 -> 2.17.0
  - xarray 2023.7.0 -> 2024.6.0
  - xgboost 2.0.3 -> 2.1.1
- Python package inclusions
  - einops 0.8.0

## 2024-07-22

- You can now embed Google sheets directly into Colab to streamline interactions with data with InteractiveSheet.  
Example:  

```
from google.colab import sheets
sh = sheets.InteractiveSheet()
df = sh.as_df()
```
- Fixed multiple rendering bugs in cell editors with wide text content (i.e. text is no longer hidden or clipped)
- Fixed multiple accessibility issues in Colab's comments feature (e.g. proper keyboard focus management, added accessibility landmarks, etc)
- Fixed bug where AI code generation would fail for extremely long broken code snippets
- Fixed multiple scrollbar bugs in the user secrets panel
- Added the ability for workspace admin to purchase Colab Pro and Pro+ Subscriptions for users
- Fixed bug where user secrets couldn't be moved to a tab
- Fixed several focus management accessibility issues in tabs, the table of contents, the left toolbar, and the run button

```
class Employee:
    # Class variable to count the number of Employees
    employee_count = 0

    def __init__(self, name, family, salary, department):
        # Instance variables
        self.name = name
        self.family = family
        self.salary = salary
        self.department = department

        # Increment the employee count whenever a new employee is created
        Employee.employee_count += 1

    @classmethod
    def average_salary(cls, employees):
        # Calculate the average salary from a list of Employee instances
        total_salary = sum(employee.salary for employee in employees)
        return total_salary / len(employees) if employees else 0

class FulltimeEmployee(Employee):
    pass

# Creating instances of FulltimeEmployee and Employee classes
employee1 = FulltimeEmployee("Jeevan", "N", 50000, "Engg")
employee2 = FulltimeEmployee("N", "Jeevan", 60000, "Engg")
employee3 = Employee("J", "N", 40000, "Engg")

# Creating a list of employees to calculate the average salary
employees = [employee1, employee2, employee3]

print(f"Total number of employees: {Employee.employee_count}")
print(f"Average salary: {Employee.average_salary(employees)}")
```

↗ Total number of employees: 3  
Average salary: 50000.0

### Employee Class:

`employee_count`: A class variable that counts the number of Employee instances created.

`init` method: Initializes an Employee instance with name, family, salary, and department.

`average_salary` method: A class method that takes a list of Employee instances and calculates the average salary. `FulltimeEmployee` Class: Inherits all properties and methods from the Employee class. Instances:

`employee1` and `employee2` are instances of the `FulltimeEmployee` class. `employee3` is an instance of the `Employee` class.

```
import numpy as np

# Create a random vector
random_vector = np.random.uniform(1, 20, 20)

# Reshape the vector to a 4x5 array
reshaped_array = random_vector.reshape(4, 5)

max_indices = np.argmax(reshaped_array, axis=1)

reshaped_array[np.arange(reshaped_array.shape[0]), max_indices] = 0

print(reshaped_array)
```

↗

```
[[13.7265001 12.91951022 0.          16.04464816 1.0391035 ]
 [ 5.4990193  0.          15.51802417 3.55103081 10.79160162]
 [ 9.25435759 3.47785751 0.          14.3864952  4.88986244]
 [17.10455058 10.95269713 6.41509915 12.88040933 0.          ]]
```

Random Vector: `np.random.uniform(1, 20, 20)` creates a random vector of size 20 with float values between 1 and 20.

Reshape: `reshape(4, 5)` reshapes the vector into a 4x5 array. Replace Max with `0: np.argmax(reshaped_array, axis=1)` returns the indices of the maximum values along

each row. `reshaped_array[np.arange(reshaped_array.shape[0]), max_indices] = 0` uses advanced indexing to set the maximum values to 0 without using a loop.

- Fixed bug where overflowing cells may be omitted when pasting from Google Sheets
- Fixed bug where the generate code button did not activate on touch
- Python package upgrades
  - bigframes 1.9.0 -> 1.11.1
  - cvxpy 1.3.4 -> 1.5.2
  - earthengine-api 0.1.408 -> 0.1.412
  - google-api-core 2.11.1 -> 2.19.1
  - google-api-python-client 2.84.0 -> 2.137.0
  - google-cloud-aiplatform 1.56.0 -> 1.59.0
  - google-cloud-bigquery 3.21.0 -> 3.25.0
  - google-cloud-core 2.3.3 -> 2.4.1
  - google-cloud-datastore 2.15.2 -> 2.19.0
  - google-cloud-firestore 2.11.1 -> 2.16.1
  - google-cloud-functions 1.13.3 -> 1.16.4
  - google-generativeai 0.5.4 -> 0.7.2
  - kagglehub 0.2.5 -> 0.2.8
  - pip 23.1.2 -> 24.1.2
  - setuptools 67.7.2 -> 71.0.4
  - sympy 1.12.1 -> 1.13.1
  - torch 2.3.0 -> 2.3.1
  - transformers 4.41.2 -> 4.42.4
- Python package inclusions
  - accelerate 0.32.1

## 2024-06-18

- Inline AI completions are now available to users on the free-of-charge tier
- Reduced latency for LSP and terminal connections
- Improved quality of inline completions
- Visual improvements to switch controls across Colab
- Various bug fixes, performance and a11y improvements to the user secrets panel
- Improved tooltip UX behavior
- Improved behavior when copying data from Google Sheets and pasting in Colab
- Scroll to cell fixes for single tabbed view and jump to cell command
- Improved tab header behavior
- A11y improvements for notebook-focused cells
- Python package upgrades
  - torch 2.2.1 -> 2.3.0
  - torchaudio 2.2.1 -> 2.3.0
  - torchvision 0.17.1 -> 0.18.0
  - torchtext 0.17.1 -> 0.18.0
  - google-cloud-aiplatform 1.51.0 -> 1.56.0
  - bigframes 1.5.0 -> 1.8.0
  - regex 2023.12.25 -> 2024.5.15

## 2024-05-13

- Code actions are now supported to automatically improve and refactor code. Code actions can be triggered by the keyboard shortcut "Ctrl/⌘ + ."
- Python package upgrades
  - bigframes 1.0.0 -> 1.5.0
  - google-cloud-aiplatform 1.47.0 -> 1.51.0
  - jax[tpu] 0.4.23 -> 0.4.26
- Python package inclusions
  - cudf 24.4.1

## 2024-04-15

- TPU v2 runtime is now available
- L4 runtime is now available for paid users
- New distributed fine-tuning Gemma tutorial on TPUs ([GitHub](#))
- Symbol rename is now supported with keyboard shortcut F2
- Fixed bug causing inability to re-upload deleted files
- Fixed breaking bug in colabtools `%upload_files_async`
- Added syntax highlighting to `%writefile` cells
- Cuda dependencies that come with Torch are cached for faster downloads for packages that require Torch and its dependencies ([GitHub issue](#))
- Python package upgrades
  - bigframes 0.24.0 -> 1.0.0
  - duckdb 0.9.2 -> 0.10.1
  - google-cloud-aiplatform 1.43.0 -> 1.47.0
  - jax 0.4.23 -> 0.4.26