

Jupyter Notebook

Curso: Bases para Data Science - Estadística, R y Python

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Sociedad Ecuatoriana de Estadística

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Nota:

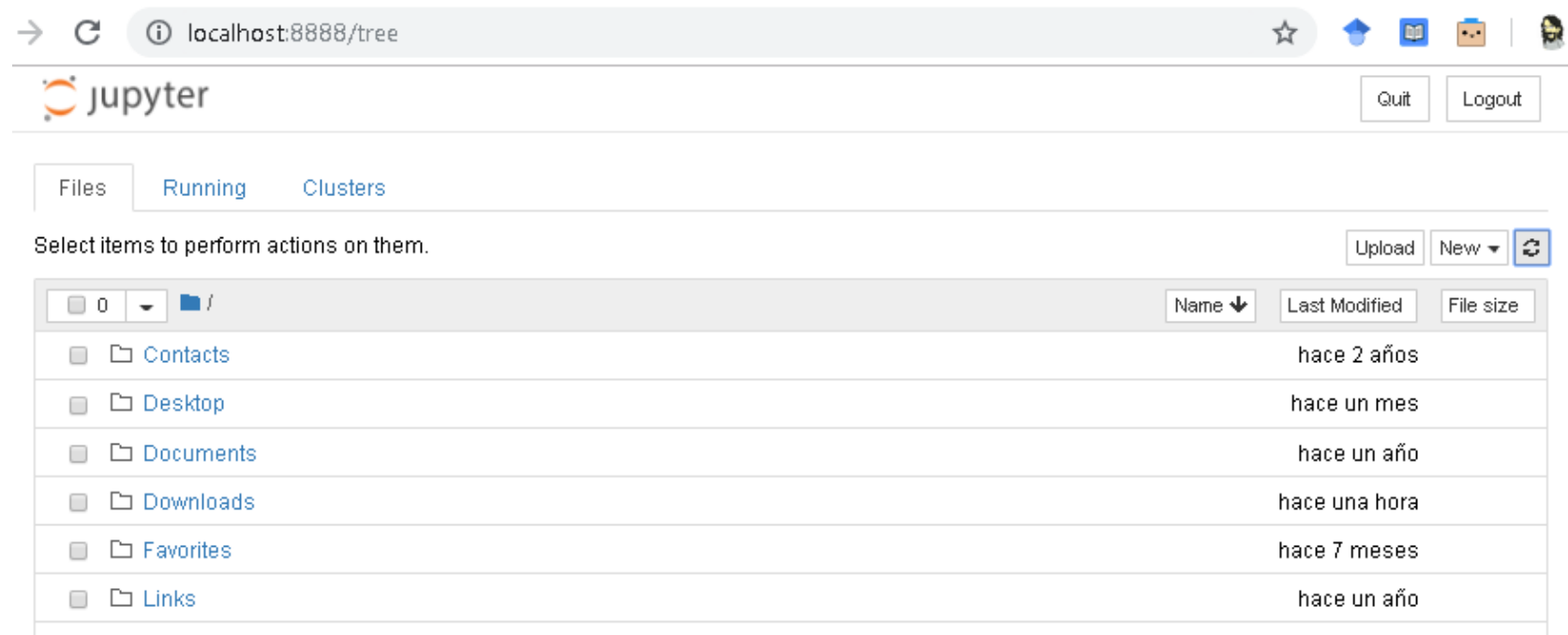
Con *Alt + F* o *Option + F* puede hacer que estas diapositivas ocupen todo el navegador (es decir que se ignore el aspecto de diapositiva que tiene por default la presentación)

Jupyter Notebook

- Originalmente pensado para tres lenguajes Julia (JU), Python (PYT) y R (ER)
- Hoy soporta alrededor de 40 lenguajes
- Jupyter Notebook, JupyterLab
- Equivalente a usar rmarkdown como notebook en R
- Notebook: Combinación de código, gráficos y texto (notas/análisis/etc.)
- Permite compartir los resultados
- Al ser aplicación web, Jupyter Notebook podría estar en un servidor.

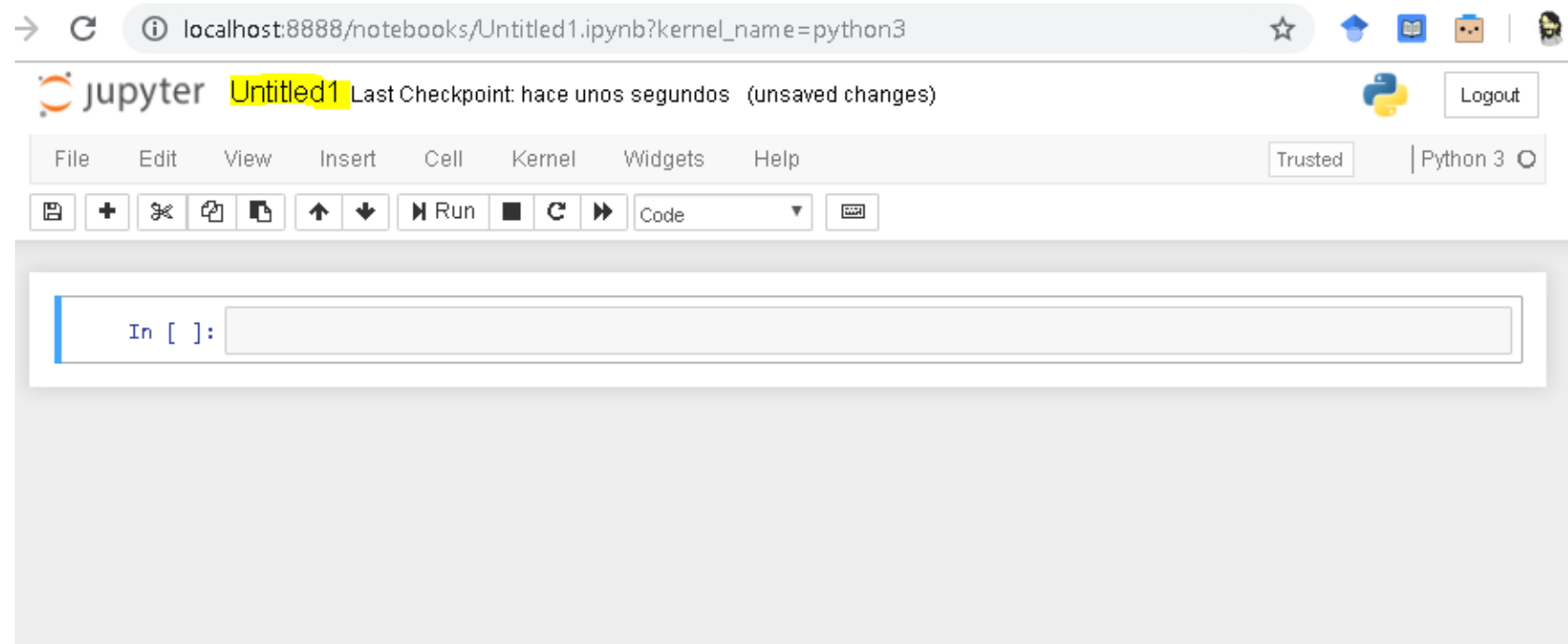
Jupyter Notebook

- Abrir Jupyter Notebook (se abre el dashboard)
 - Crear nuevo notebook: New > Python 3
 - Ojo: Diferenciar Jupyter notebook como webApp y un archivo Notebook



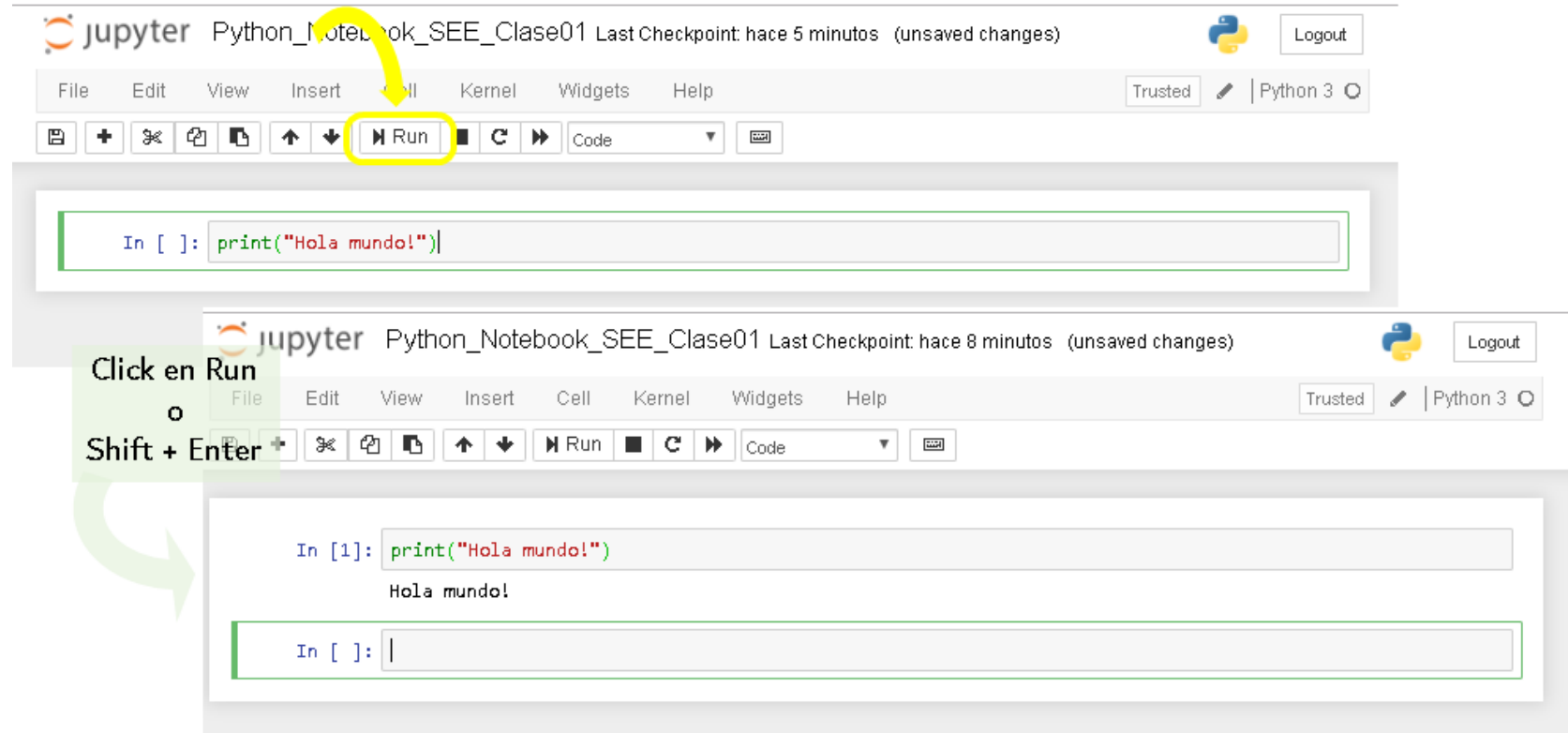
Jupyter Notebook

- Abrir Jupyter Notebook
 - Crear nuevo notebook: New > Python 3
 - Cambiar nombre



Jupyter Notebook

- El típico hola mundo en Jupyter Notebook



The image displays two screenshots of a Jupyter Notebook interface, illustrating the execution of a simple Python program.

Top Screenshot: The notebook is titled "Python_Notebook_SEE_Clas01" and shows the code cell with the command `print("Hola mundo!")`. The "Run" button (a play icon) in the toolbar is highlighted with a yellow circle. A yellow arrow points from this button to the bottom screenshot.

Bottom Screenshot: The same notebook is shown after execution. The code cell now displays the output "Hola mundo!" below the code. A green arrow points from the "Run" button in the top screenshot to the output in the bottom screenshot.

A green callout box with the text "Click en Run" and "Shift + Enter" is positioned over the "Run" button in the bottom screenshot.

Jupyter Notebook

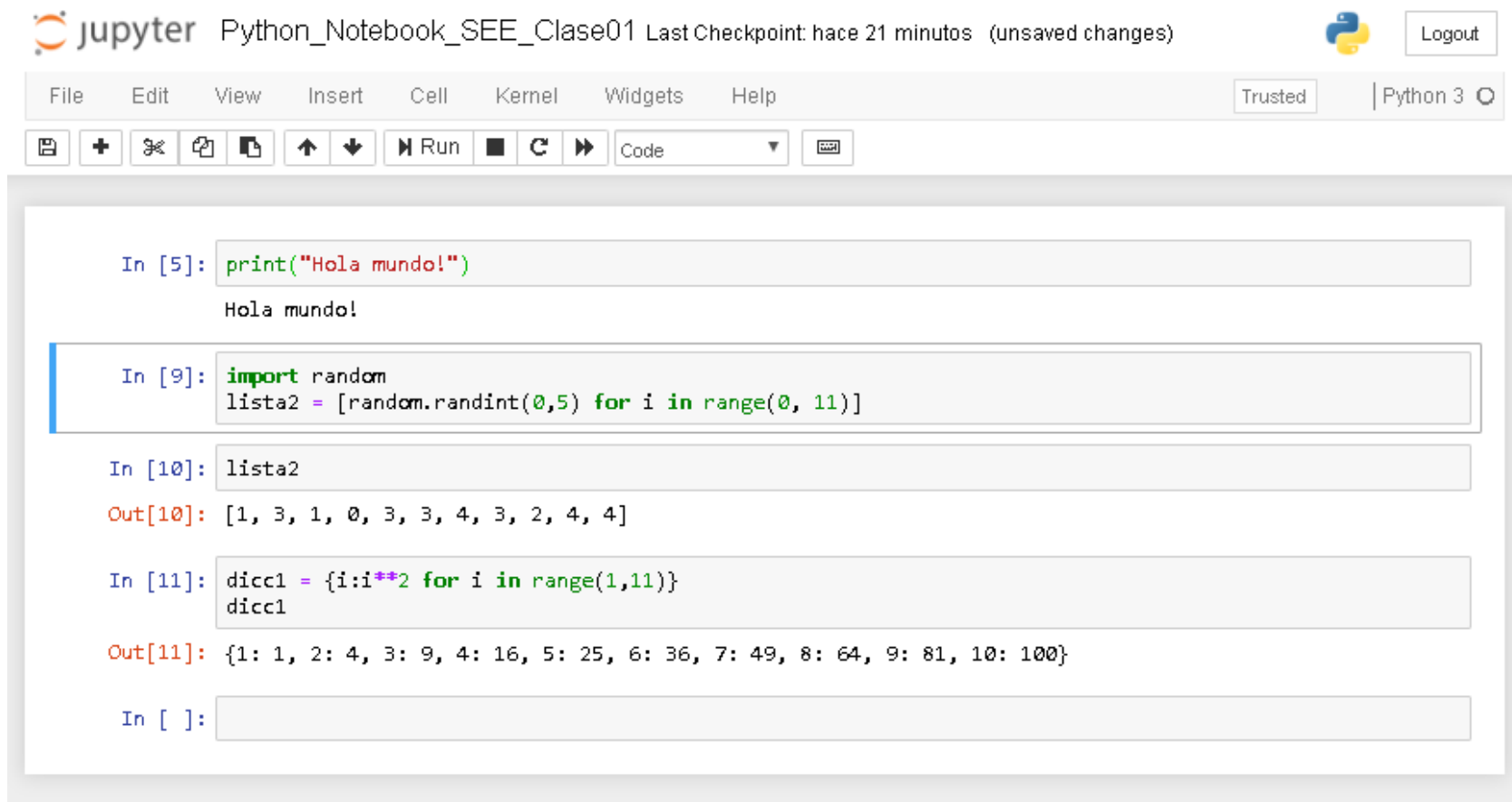
Ejecutar en celdas de Jupyter Notebook

```
# Python celda  
x= 4  
y= 5  
print(x + y)
```

```
## 9
```


Jupyter Notebook

Una celda puede tener varias líneas (note las celdas 9, 10 y 11) y podría como no tener output (celda 9 vs celda 11)

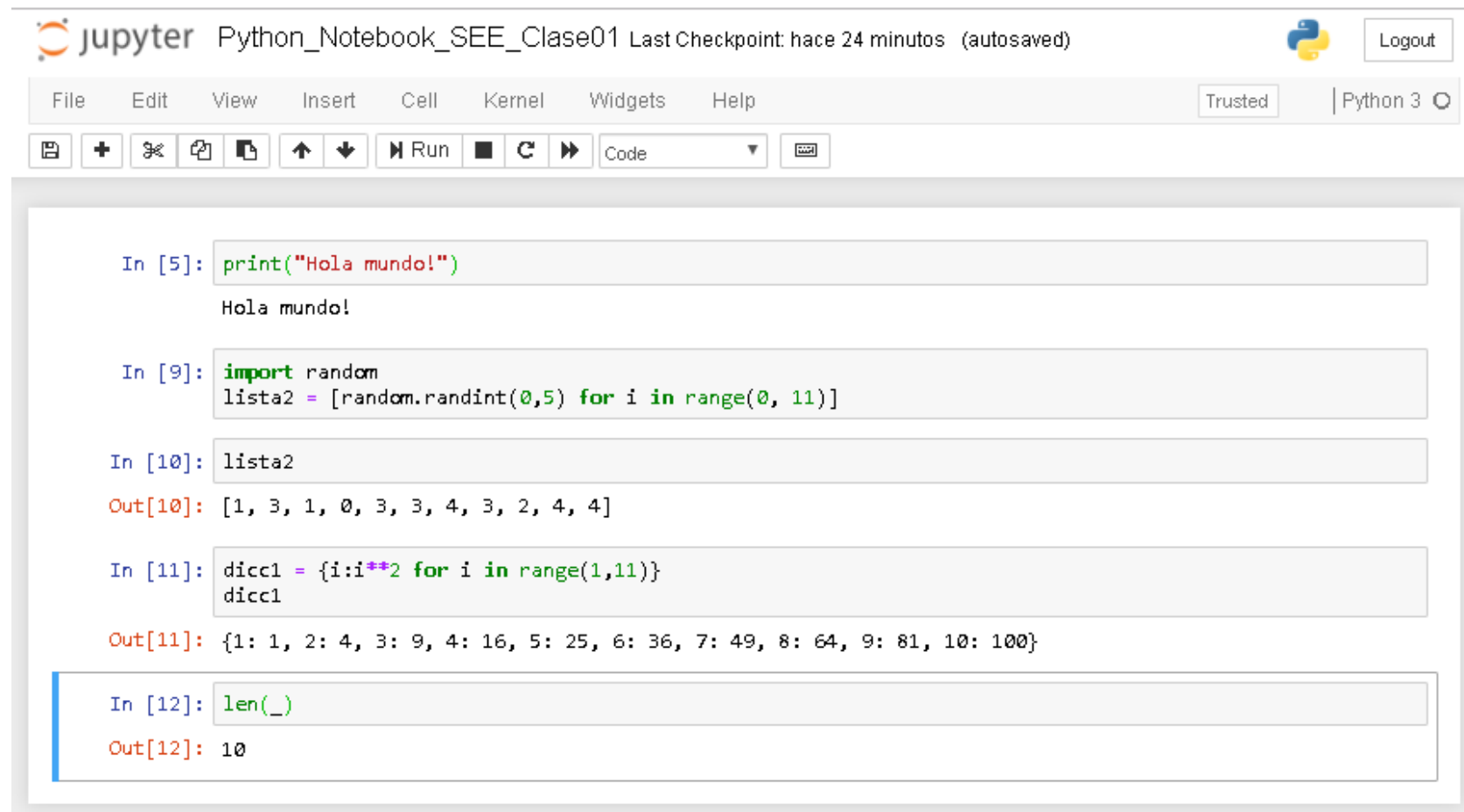


The screenshot shows a Jupyter Notebook interface with the following elements:

- Header:** "jupyter Python_Notebook_SEE_Clase01 Last Checkpoint: hace 21 minutos (unsaved changes)" with a Python logo and a "Logout" button.
- Menu Bar:** File, Edit, View, Insert, Cell, Kernel, Widgets, Help.
- Toolbar:** Includes icons for saving, adding cells, undo, redo, running, and a dropdown menu currently set to "Code".
- Code Cells and Outputs:**
 - Cell 5:** `print("Hola mundo!")` with output `Hola mundo!`.
 - Cell 9:** `import random`
`lista2 = [random.randint(0,5) for i in range(0, 11)]` (This cell has no output shown).
 - Cell 10:** `lista2` with output `[1, 3, 1, 0, 3, 3, 4, 3, 2, 4, 4]`.
 - Cell 11:** `dicc1 = {i:i**2 for i in range(1,11)}`
`dicc1` with output `{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}`.
 - Cell []:** An empty code cell at the bottom.

Jupyter Notebook

Con subguión estoy tomando la salida de la celda anterior, ejemplo:

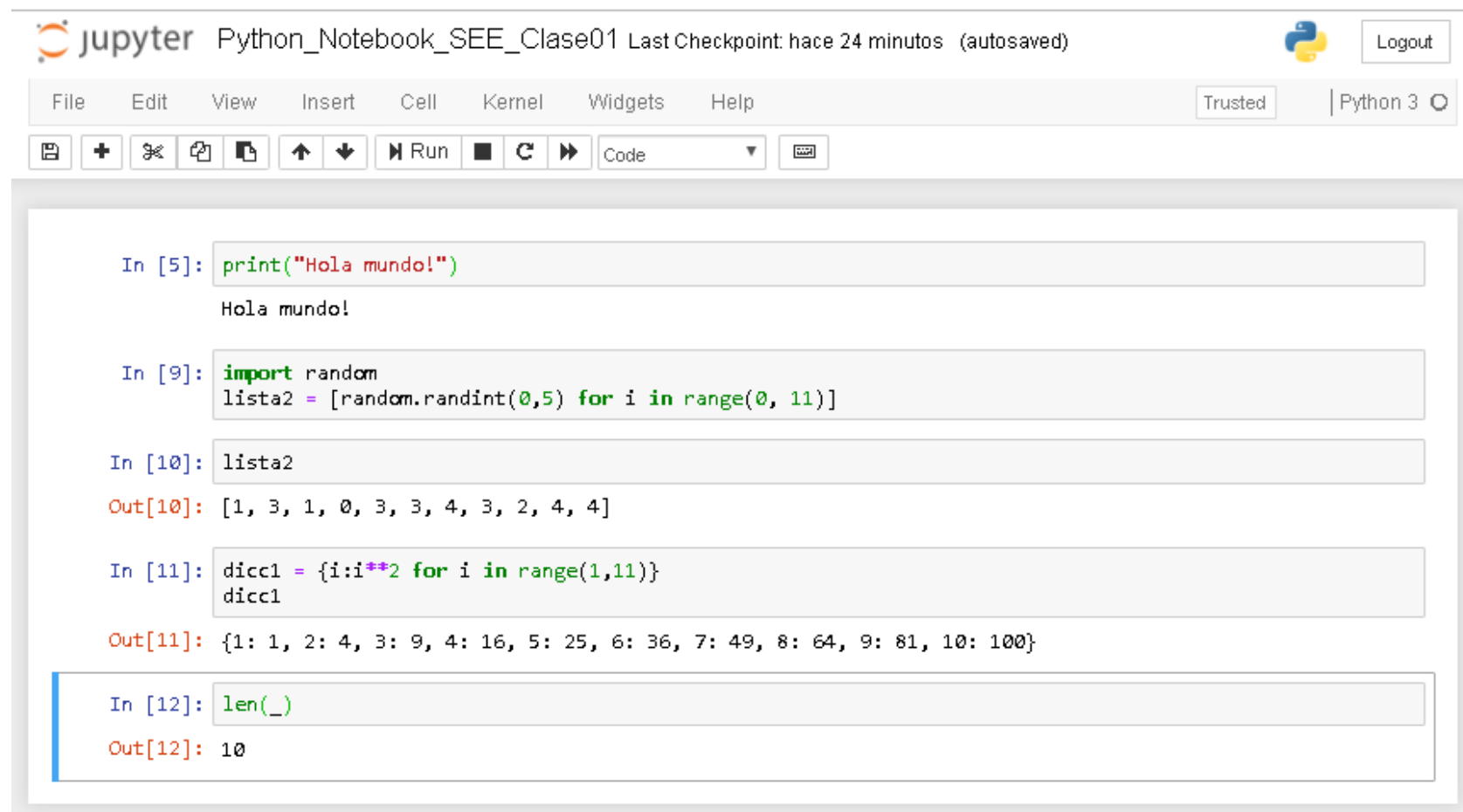


The screenshot shows a Jupyter Notebook interface with the following elements:

- Header:** "jupyter Python_Notebook_SEE_Clase01 Last Checkpoint: hace 24 minutos (autosaved)" and a "Logout" button.
- Menu Bar:** File, Edit, View, Insert, Cell, Kernel, Widgets, Help.
- Toolbar:** Includes icons for saving, creating new, opening, and closing files, as well as navigation and execution buttons (Run, Stop, Restart, Continue).
- Code Cells and Outputs:**
 - In [5]:** `print("Hola mundo!")`
Out: Hola mundo!
 - In [9]:** `import random`
`lista2 = [random.randint(0,5) for i in range(0, 11)]`
 - In [10]:** `lista2`
Out[10]: [1, 3, 1, 0, 3, 3, 4, 3, 2, 4, 4]
 - In [11]:** `dicc1 = {i:i**2 for i in range(1,11)}`
`dicc1`
Out[11]: {1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}
 - In [12]:** `len(_)`
Out[12]: 10

Jupyter Notebook

Con subguión estoy tomando la salida de la celda anterior, ejemplo:

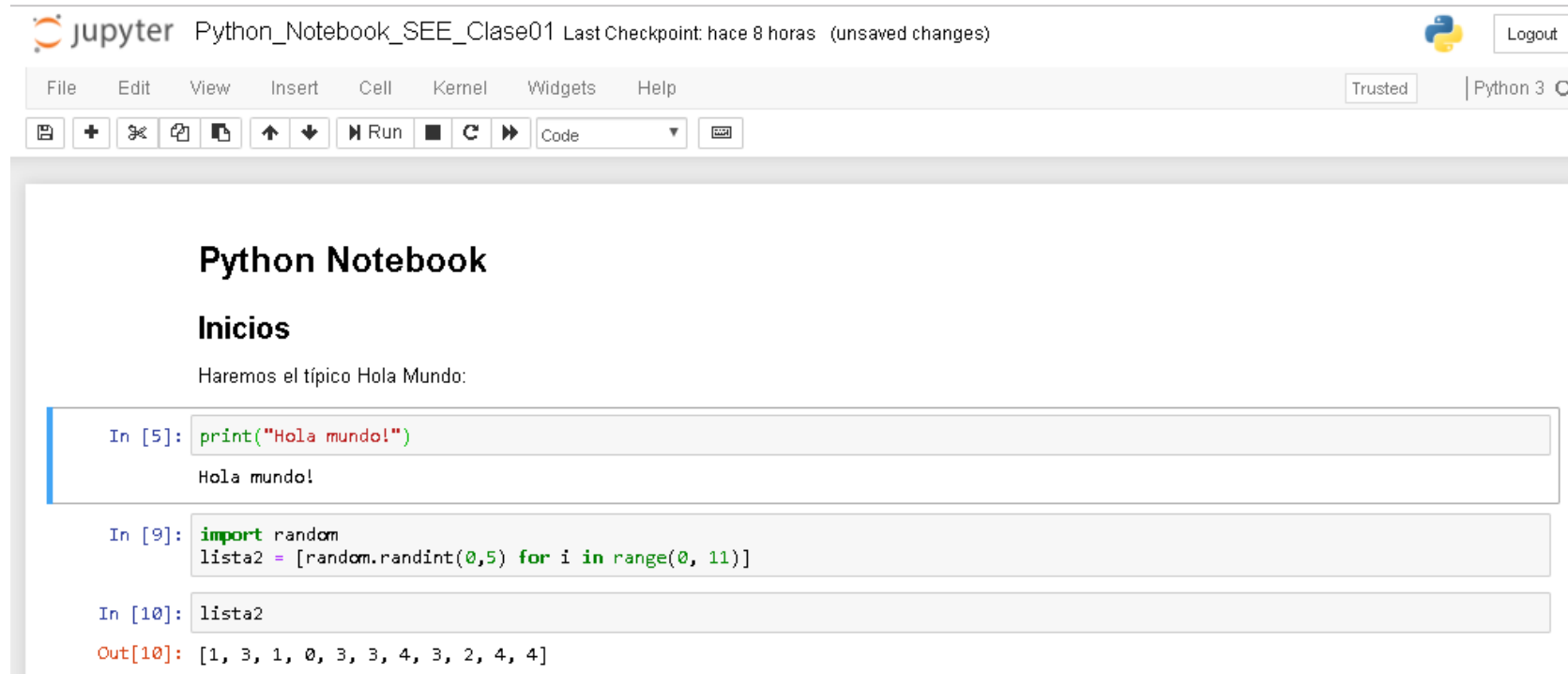


The screenshot shows a Jupyter Notebook interface with the following elements:

- Header:** "jupyter Python_Notebook_SEE_Clase01 Last Checkpoint: hace 24 minutos (autosaved)" and a "Logout" button.
- Menu Bar:** File, Edit, View, Insert, Cell, Kernel, Widgets, Help.
- Toolbar:** Includes icons for saving, creating new, opening, and closing files, as well as running, interrupting, and restarting the kernel. A dropdown menu is set to "Code".
- Code Cells and Outputs:**
 - Cell 5:** `print("Hola mundo!")` Output: `Hola mundo!`
 - Cell 9:** `import random`
`lista2 = [random.randint(0,5) for i in range(0, 11)]`
 - Cell 10:** `lista2` Output: `[1, 3, 1, 0, 3, 3, 4, 3, 2, 4, 4]`
 - Cell 11:** `dicc1 = {i:i**2 for i in range(1,11)}`
`dicc1` Output: `{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}`
 - Cell 12:** `len(_)` Output: `10`

Jupyter Notebook

- Se puede crear celdas de tipo markdown (cambiar el tipo de code a markdown)
 - Se puede crear una celda y moverla con las flechas del menú



The screenshot shows a Jupyter Notebook interface. The top bar includes the Jupyter logo, the notebook name "Python_Notebook_SEE_Clas01", the last checkpoint time "Last Checkpoint: hace 8 horas", and a status "(unsaved changes)". On the right, there is a "Logout" button and a "Python 3" kernel selector. Below the top bar is a menu bar with "File", "Edit", "View", "Insert", "Cell", "Kernel", "Widgets", and "Help". A toolbar contains icons for saving, creating new cells, deleting cells, moving cells, and running code. The main area displays the notebook content:

Python Notebook

Inicios

Haremos el típico Hola Mundo:

```
In [5]: print("Hola mundo!")
```

Hola mundo!

```
In [9]: import random
lista2 = [random.randint(0,5) for i in range(0, 11)]
```

```
In [10]: lista2
```

```
Out[10]: [1, 3, 1, 0, 3, 3, 4, 3, 2, 4, 4]
```

Jupyter Notebook

- Para cerrar el notebook puede ir a File > Close and Halt
 - El archivo .ipynt creado conserva lo outputs, permitiendo compartir el análisis con otras personas
 - Se puede exportar a varios formatos, incluyendo html, pdf, latex, o archivo de python plano

Jupyter Notebook

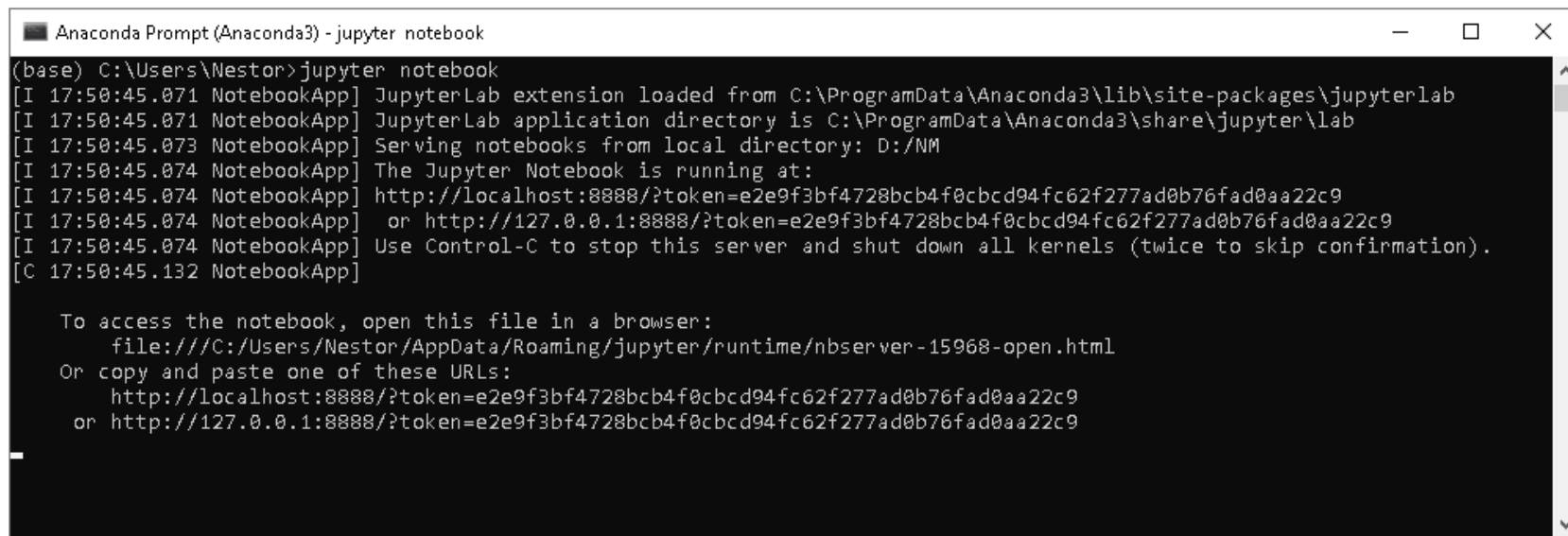
¿Y si quiero que Jupyter se inicie en una carpeta específica?

- Abrir Anaconda Prompt
- `jupyter notebook --notebook-dir [ruta-a-abrir]`
- Si quieren que sea algo permanente, pueden modificar el archivo `jupyter_notebook_config.py`, la línea que contiene: `c.NotebookApp.notebook_dir = [nueva-ruta]`.

Jupyter Notebook

¿Y si quiero que Jupyter se abra en otro explorador de internet?

- Abrir Anaconda Prompt
- jupyter notebook
- Copiar la ruta que muestra el prompt a un navegador, la ruta es parecida a esto: <http://127.0.0.1:8888/?token=624ee43ca4a70c86c4ffca93927917c2b803a2b22casdar>



```
Anaconda Prompt (Anaconda3) - jupyter notebook
(base) C:\Users\Nestor>jupyter notebook
[I 17:50:45.071 NotebookApp] JupyterLab extension loaded from C:\ProgramData\Anaconda3\lib\site-packages\jupyterlab
[I 17:50:45.071 NotebookApp] JupyterLab application directory is C:\ProgramData\Anaconda3\share\jupyter\lab
[I 17:50:45.073 NotebookApp] Serving notebooks from local directory: D:/NM
[I 17:50:45.074 NotebookApp] The Jupyter Notebook is running at:
[I 17:50:45.074 NotebookApp] http://localhost:8888/?token=e2e9f3bf4728bcb4f0cbcd94fc62f277ad0b76fad0aa22c9
[I 17:50:45.074 NotebookApp] or http://127.0.0.1:8888/?token=e2e9f3bf4728bcb4f0cbcd94fc62f277ad0b76fad0aa22c9
[I 17:50:45.074 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 17:50:45.132 NotebookApp]

To access the notebook, open this file in a browser:
    file:///C:/Users/Nestor/AppData/Roaming/jupyter/runtime/nbserver-15968-open.html
Or copy and paste one of these URLs:
    http://localhost:8888/?token=e2e9f3bf4728bcb4f0cbcd94fc62f277ad0b76fad0aa22c9
    or http://127.0.0.1:8888/?token=e2e9f3bf4728bcb4f0cbcd94fc62f277ad0b76fad0aa22c9
```

Fin

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