***Lab test AI ASSISTED-2***

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*Subgroup O*

*O.1 — [S18O1] Point-in-polygon (ray casting):*

*Prompt:* *Create a Python code that determines whether points are within the polygon using the ray-casting algorithm. The input will be a polygon in the form of a list of ( x, y) coordinates and a list of points. Output a list of booleans with each entry being True in response to the point being inside the polygon or on one of its edges. Make the code straightforward, effective and have a little example of usage.*

*Code:* A computer screen shot of a program

AI-generated content may be incorrect.

A screenshot of a computer program

AI-generated content may be incorrect.

A screen shot of a computer code

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A screen shot of a computer program

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*Output:*

*A screenshot of a computer program

AI-generated content may be incorrect.*

*O.2 — [S18O2] Compute rolling median (w=3):*

*Prompt:* *Write a Python function to calculate rolling median of a list containing numbers with a window size of 3. To all sliding windows, compute the median and present the findings in a list. Use an efficient algorithm such as bisect or heaps when you can, and deal with small edge cases well. Please retain the code clear, written and add a small example.*

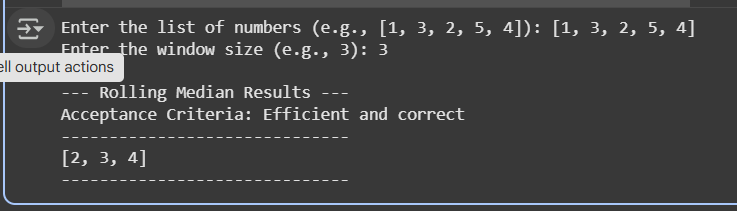
*Code:* A screenshot of a computer program

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AI-generated content may be incorrect.

*Output:* **