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HASH AGILE CODING CHALLENGE

PROBLEM STATEMENT:
HATFD1025

Find the Second Largest Element in an Array

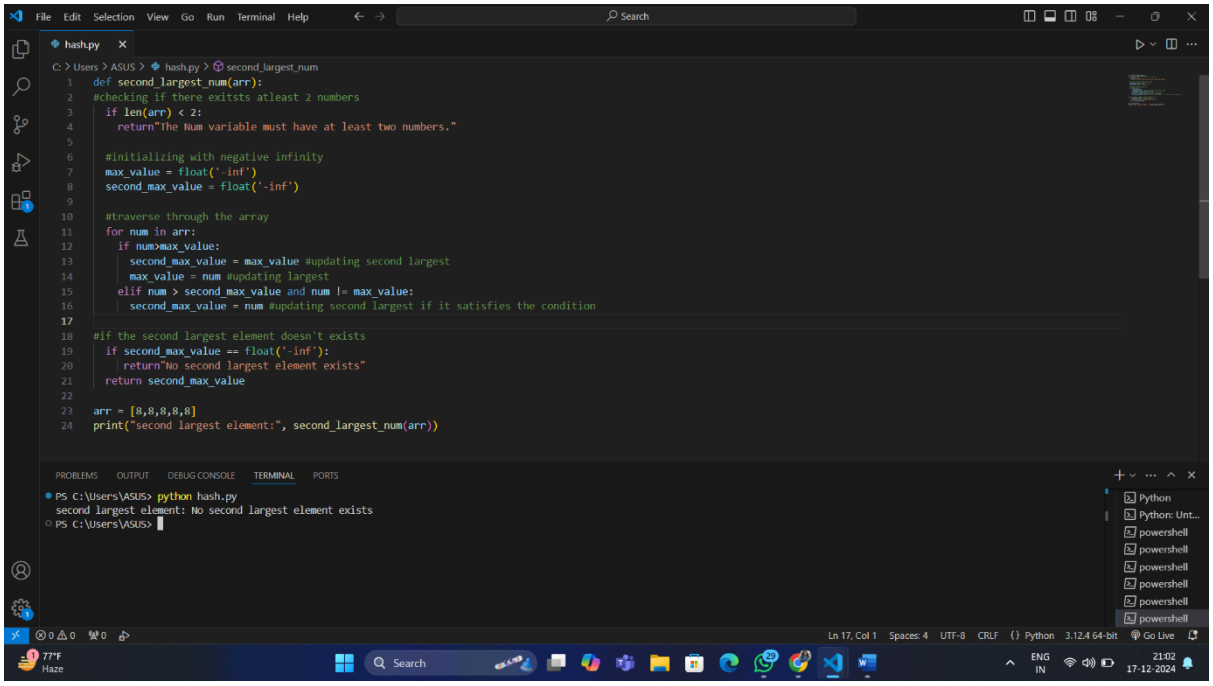
Write a program to find the second-largest element in an array of integers without using any sorting algorithms or built-in array functions.

Instructions: Traverse the array manually to find both the largest and second-largest elements

PROGRAM CODE:
1. SAMPLE INPUT

```
def second_largest_num(arr):
#checking if there exitsts atleast 2 numbers
  if len(arr) < 2:
    return"The Num variable must have at least two numbers."
  #initializing with negative infinity
  max_value = float('-inf')
  second_max_value = float('-inf')
#traverse through the array
  for num in arr:
    if num>max_value:
      second_max_value = max_value #updating second largest
      max_value = num #updating largest
    elif num > second_max_value and num != max_value:
      second_max_value = num #updating second largest if it satisfies the condition

#if the second largest element doesn't exists
  if second_max_value == float('-inf'):
    return"No second largest element exists"
  return second_max_value
arr = [8,8,8,8,8]
print("second largest element:", second_largest_num(arr))
```



2.SAMPLE OUTPUT

```
def second_largest_num(arr):
#checking if there exitsts atleast 2 numbers
 if len(arr) < 2:
  return"The Num variable must have at least two numbers."

 #initializing with negative infinity
 max_value = float('-inf')
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 #traverse through the array
 for num in arr:
  if num>max_value:
   second_max_value = max_value #updating second largest
   max_value = num #updating largest
  elif num > second_max_value and num != max_value:
   second_max_value = num #updating second largest if it satisfies the condition
```

#if the second largest element doesn't exists

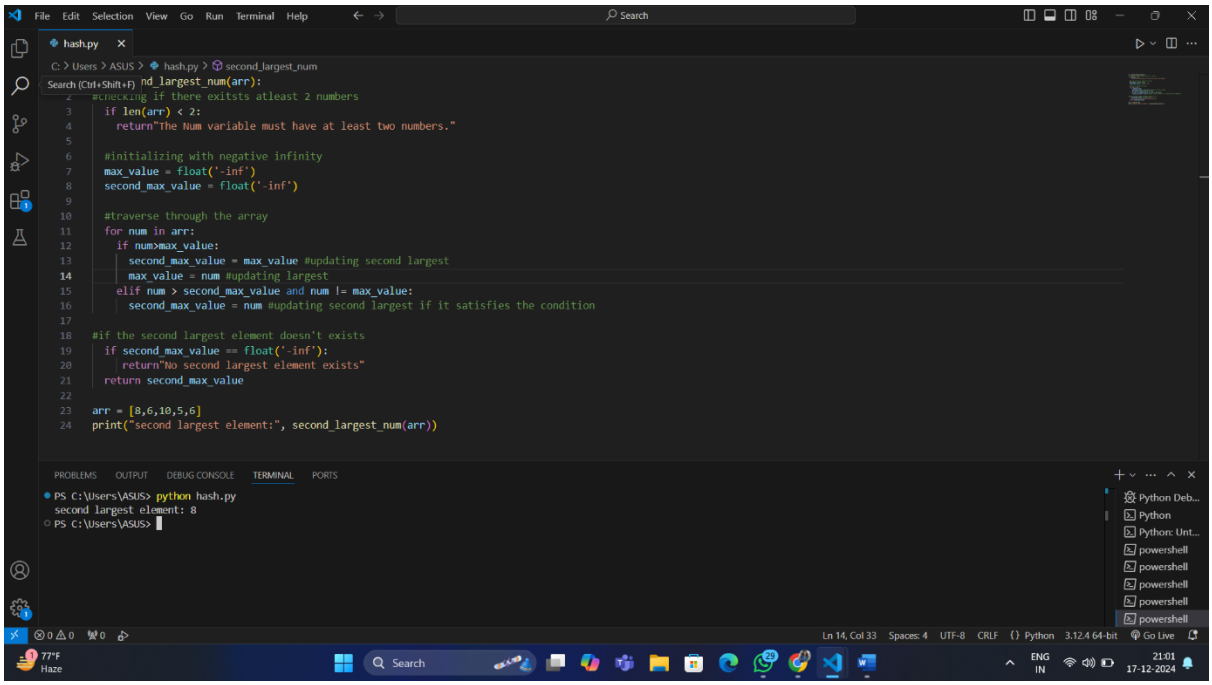
 if second_max_value == float('-inf'):

   return"No second largest element exists"

 return second_max_value

arr = [8,6,10,5,6]

print("second largest element:", second_largest_num(arr))



3.SAMPLE OUTPUT

def second_largest_num(arr):

#checking if there exitsts atleast 2 numbers

 if len(arr) < 2:

   return"The Num variable must have at least two numbers."

 #initializing with negative infinity

 max_value = float('-inf')

 second_max_value = float('-inf')

```
 #traverse through the array
 for num in arr:
  if num>max_value:
    second_max_value = max_value #updating second largest
    max_value = num #updating largest
  elif num > second_max_value and num != max_value:
    second_max_value = num #updating second largest if it satisfies the condition

#if the second largest element doesn't exists
 if second_max_value == float('-inf'):
   return"No second largest element exists"
 return second_max_value
arr = [8]
print("second largest element:", second_largest_num(arr))
```