

$a = 10$   
 $b = 20$   
 $c = 30$   
 $d = 40$   
 $e = 50$

(1000)  $\rightarrow$  Variability  
(108)  $\rightarrow$  Variability

(108) → Variable

e	50	12K
d	40	9K
c	30	8K
b	20	5K
a	10	4K

Heap

10 - 124

1000

1004

1008

1012

1016

1020

1024

1028

1036

1040

starting address = 1000

ending address = 1040

$$(1040 - 1000) = \frac{40}{4} = 10$$

int

int

[I@7a81197d

Array

Heap address.

1 in - 467<sup>th</sup>  
1000 in - 400067<sup>th</sup>

$\therefore \frac{\text{int}[] \text{ arr}}{\text{interface (Stack)}} = \frac{\text{new int}[10]}{\text{reference (heap)}}$

Hand-drawn diagram of a heap structure. A large rectangle is divided into two sections. The top section is labeled "Heap" and contains a circle with "sk" and "yr" inside, and an arrow pointing to a row of seven vertical bars. The bottom section is labeled "crpr" and "sk".

c) Array is not dynamic (ek bar jo length provide kr di ga  
uska hi rahega)

∴  $inv[] \text{ of } 480 = \{10, 20, 30, 40\}$ ;

gys0(g0x(3));

$\rightarrow q_{rr} = 4K$   
 $[3] = 4 \times 3 = 12$

$$G(x) = 4x + 12$$
$$\text{symp}(\text{gss}(q)) ;$$

$\rightarrow$   $90^\circ = 9K$   
 $(2) = 4 \times 2 = 8$

$(2) = 4 \times 2 = 8$   
 $4 \times 2 (2) = \underline{4 \times 8}$

Heap

$5K$   
 $4K$   
 $9$

$4K+4$   $4K+12$

10	20	30	70
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$4K+0$   $4K+8$   $4K+16$

$4K$   $4K+4$   $4K+8$   $4K+12$   $4K+16$   $4K+20$   $4K+24$

$\{10, 20, 30, 50, 80, 80, 100, 120\}$

0 1 2 3 4 5 6

gamma bucket  $4K+12$

(gamma read K90)

$$\text{Cost}(C) = 10K + 6 \times 7 = 4K + 29$$

$$1 \text{ long} = 8$$