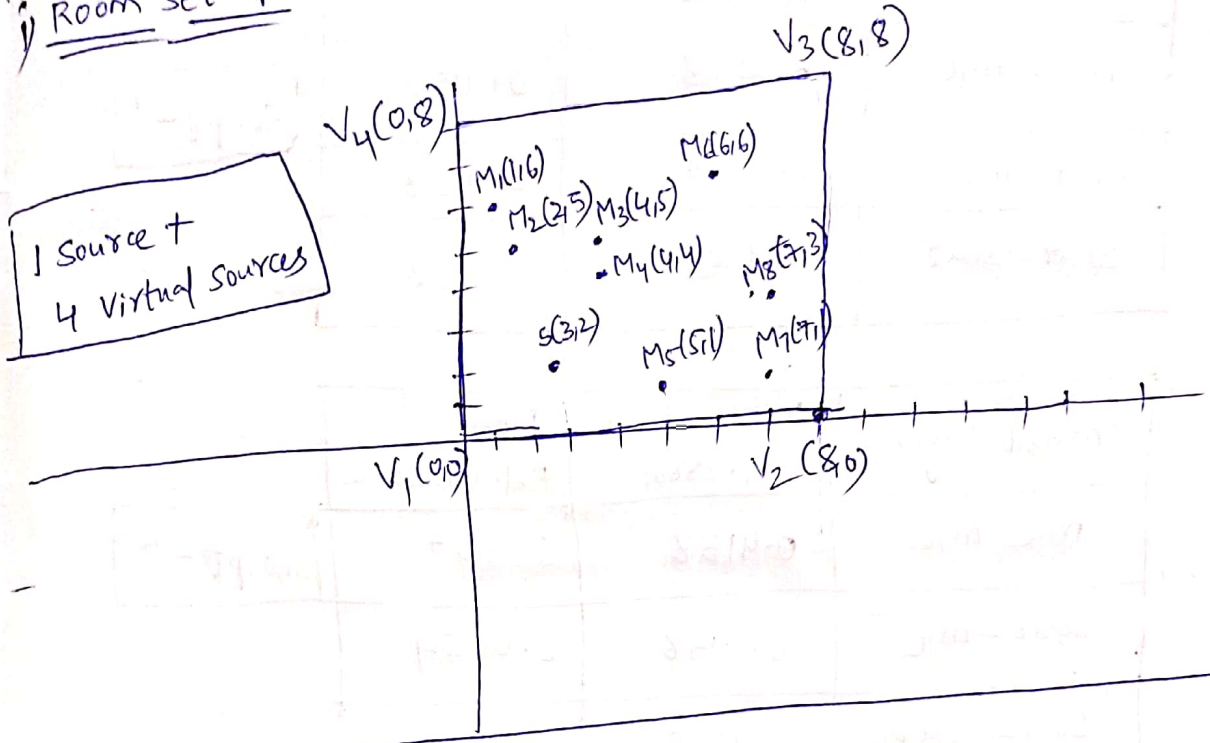
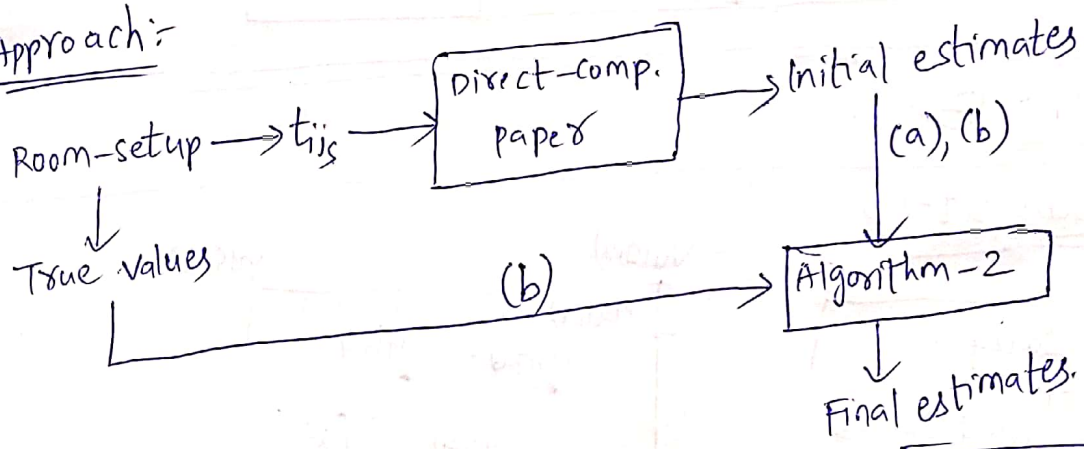
Example ① :-

i) Room set-up :-



ii) Approach :-



Note: In algorithm 2,

i) (a) → case (a) : setting the shaded regions to initial estimates

ii) (b) → case (b) : setting the shaded regions to True values.

Formulas:-

i) Intermediate rel. error = $\dfrac{\left\| \text{True EDM} - \text{EDM after direct-comp paper (Initial estimates)} \right\|_F}{\left\| \text{True EDM} \right\|_F}$

ii) Final rel. error = $\dfrac{\left\| \text{True EDM} - \text{EDM after Algorithm 2 (Final estimates)} \right\|_F}{\left\| \text{True EDM} \right\|_F}$

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Results:-

a)

Shaded Regions	Intermediate Rel. error	Final rel. error
mic – mic	0.4158	0.4158
Sour – mic	0.4158	0.4158
Sour – sour	0.4158	0.4158

script-1

b)

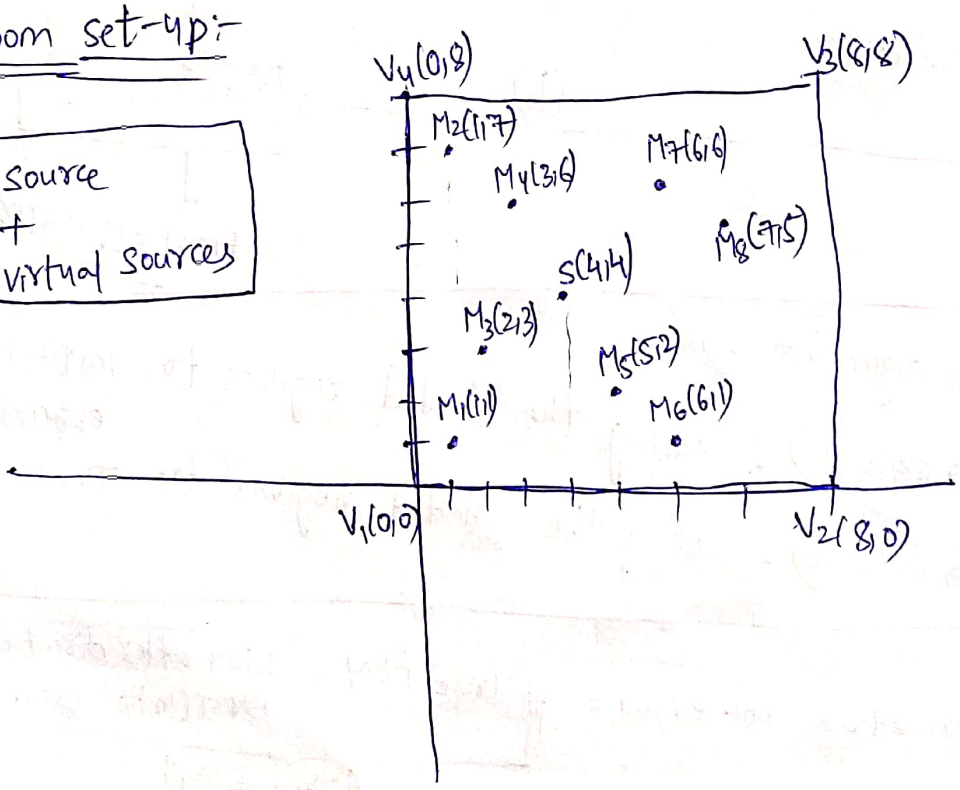
Shaded Regions	Intermediate Rel. error	Final Rel. error
mic – mic	0.4158	0.5137
Sour – mic	0.4158	0.0054
Sour – sour	0.4158	0.4158

script-2

Example (2):-

i) Room set-up:-

1 source
+
4 virtual sources



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ii) Results:-

a)

shaded Regions	Intermediate Rel. error	Final Rel. error
mic - mic	0.5425	0.5425
Sour - mic	0.5425	0.5425
Sour - Sour	0.5425	0.5425

script - 3

b)

shaded Regions	Intermediate Rel. error	Final Rel. error
mic - mic	0.5425	0.6518
Sour - mic	0.5425	0.00082
Sour - Sour	0.5425	0.5200

script - 4

Conclusion:-

- For example ① & ②,

→ case (a): setting the shaded Regions to inital estimates

i) All the cases (mic-mic, Sour-mic, Sour-sour) doesn't have any improvement in results compared to initial estimates, i.e., Algorithm ② has no use/ nothing to do with, here.

→ case (b): setting the shaded Regions to True Values.

i) In mic-mic case, Algorithm ② is worsening the initial estimates.

ii) In sour-mic case, Algorithm ② is converging to True values, i.e, good result.

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iii) In sour-sour case, Algorithm (2) is not accounting for a significant change, i.e, almost it doesn't have any use here.

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