

# Distance Sensitivity Oracles (DSO)

מספר הפרויקט: 231313

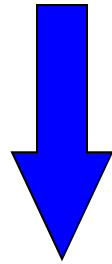
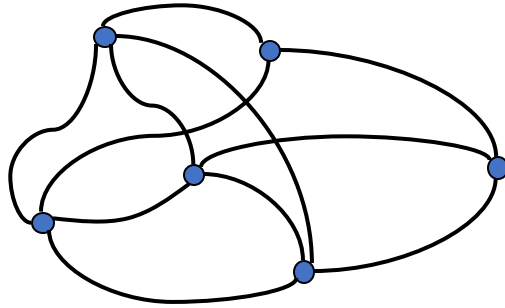
שמות הסטודנטים המציגים: ליאור נתן, דין פרידמן, אורי אביטן

שם המנחה: ד"ר כהן שראל

שם הסדנה: שיתופי פעולה במחקר

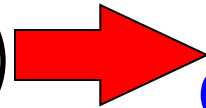
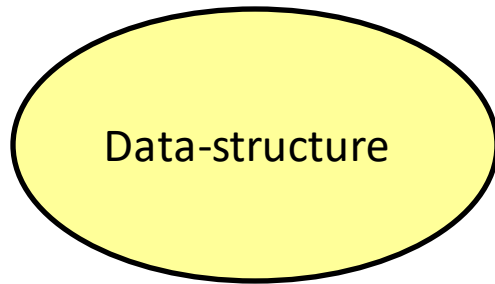
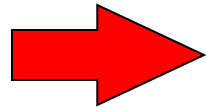
# The problem: $f$ -Distance Sensitivity Oracles

Graph



$|F| \leq f$  edge failures

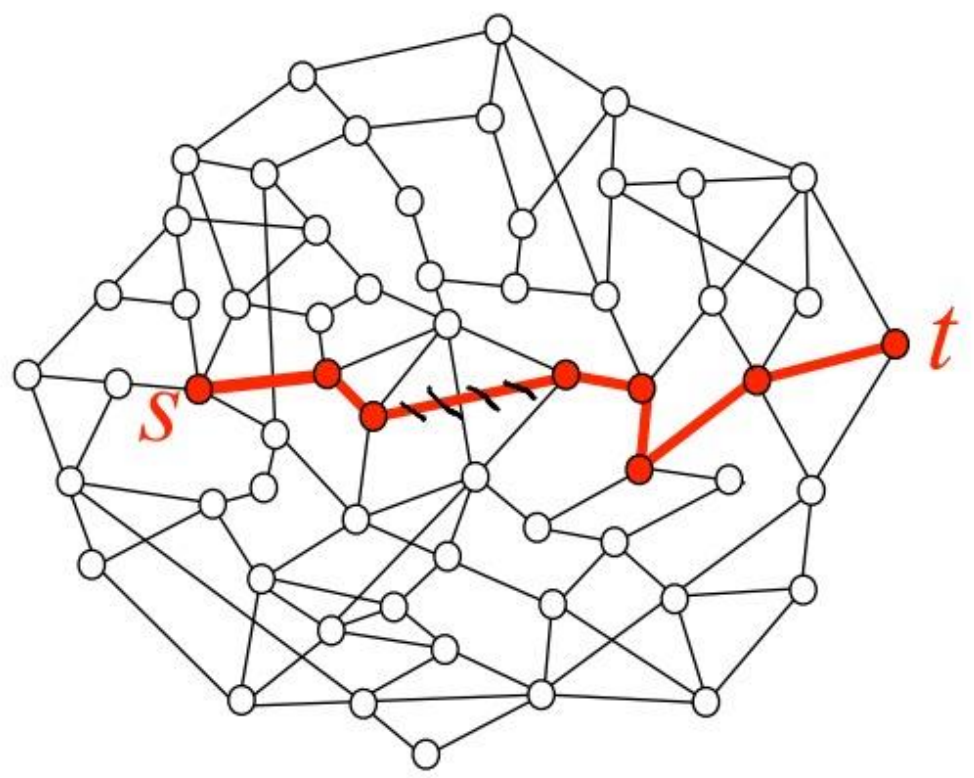
$s, t, F$

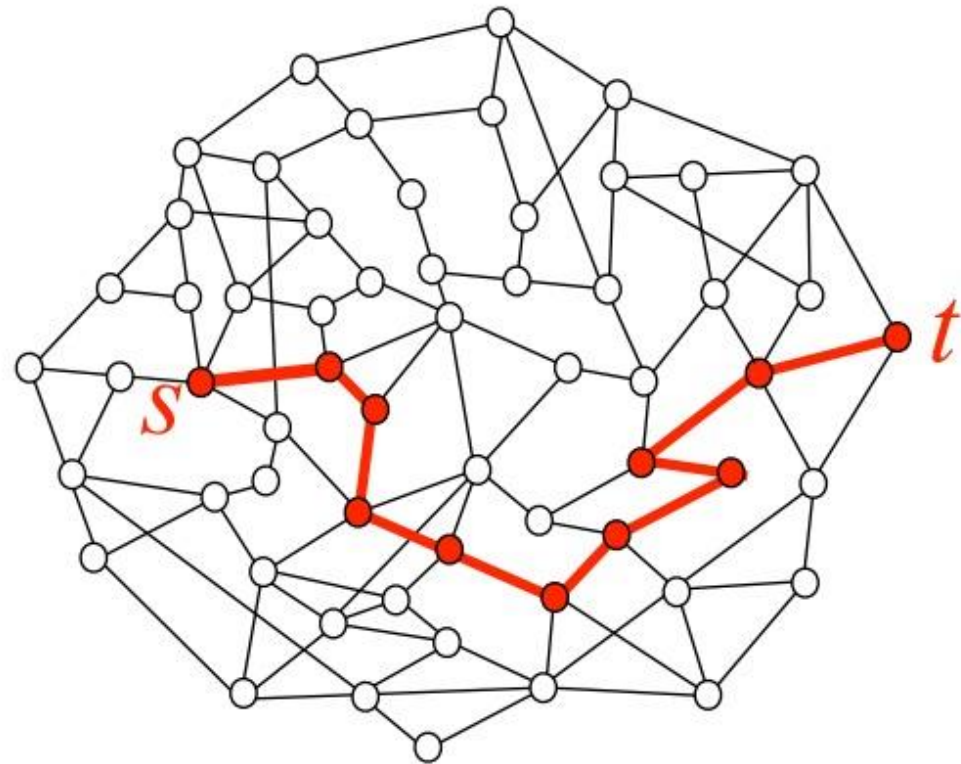


$\widehat{\text{dist}}(s, t, G \setminus F)$

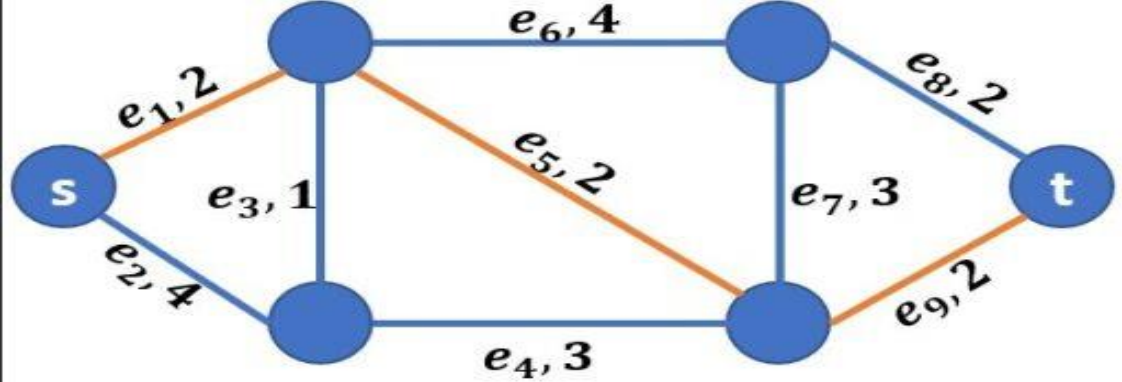
# The Trade-Offs

- $f$  - max #failures supported
- Space
- Query Time
- Stretch/Approximation Guarantee
- Preprocessing time

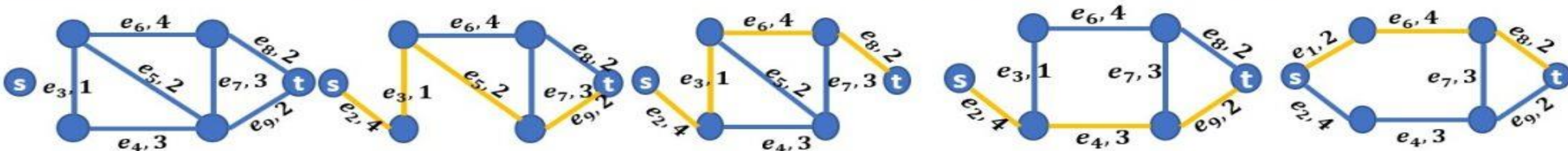
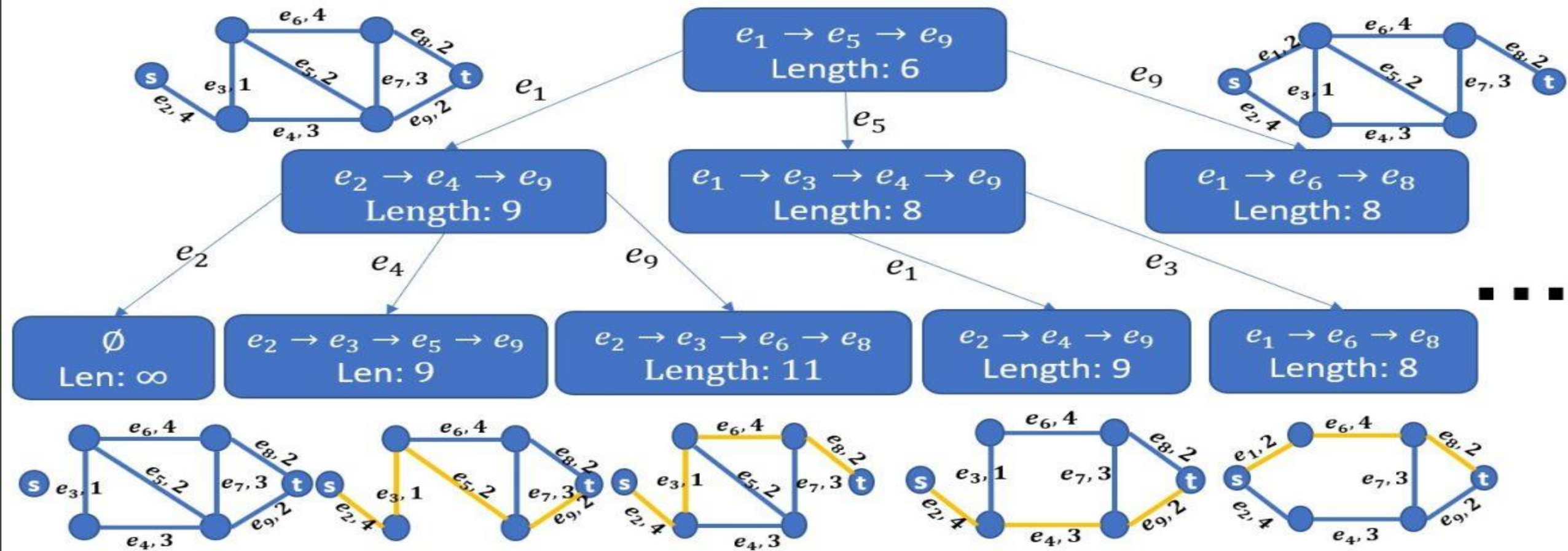


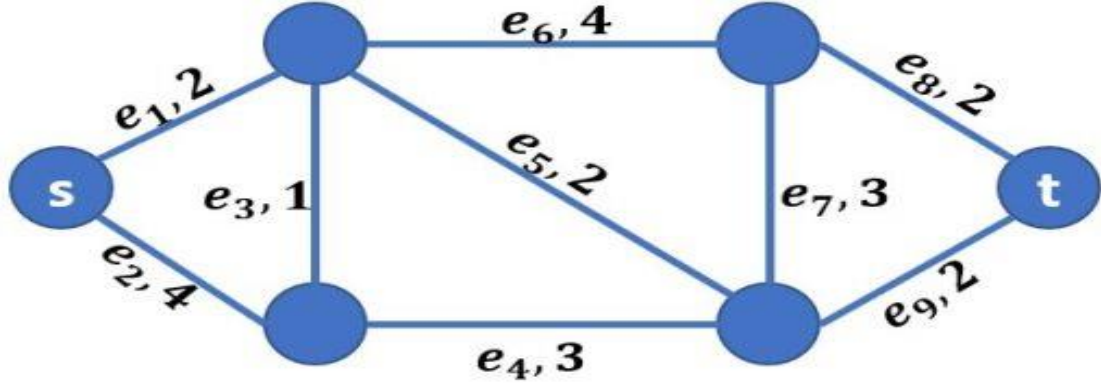


$f = 2$



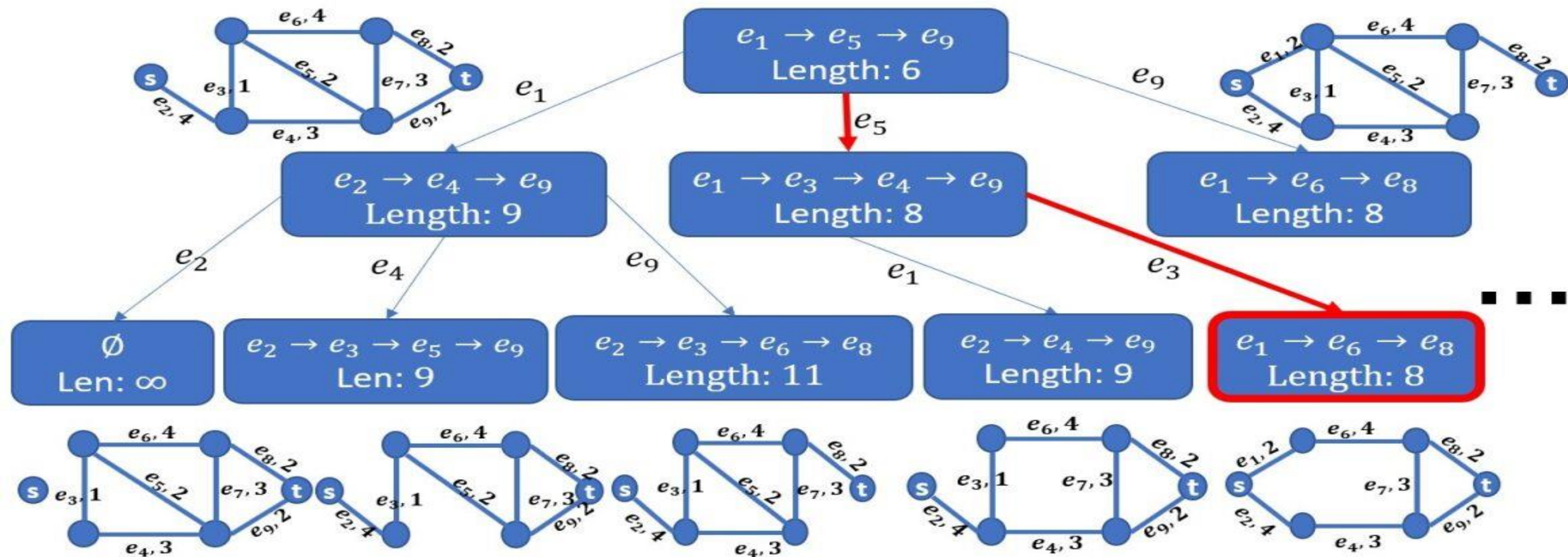
$FT(s, t)$

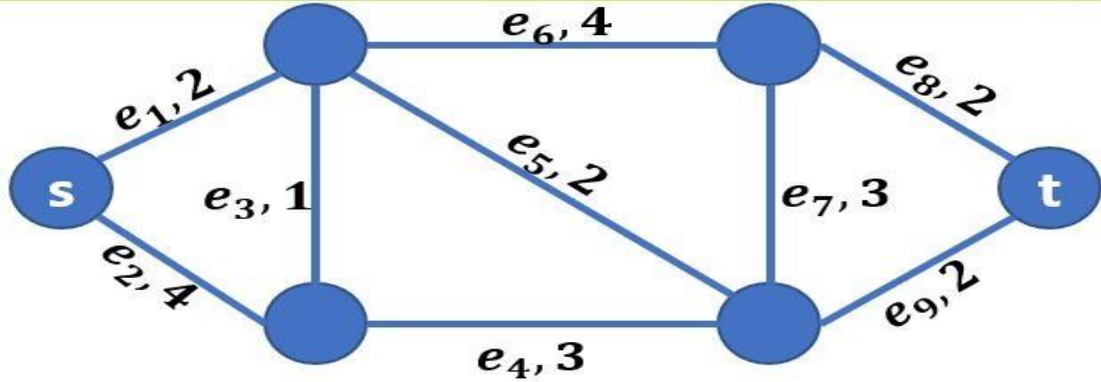




Query:  $F = \{e_5, e_3\}$

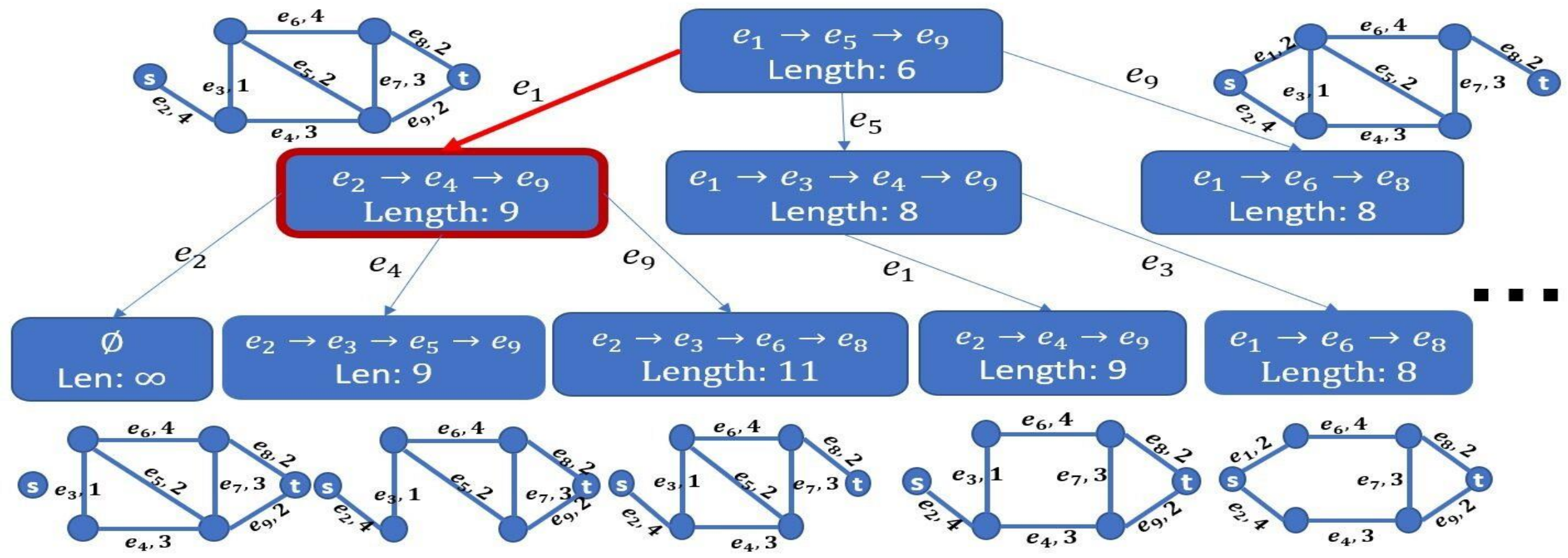
$FT(s, t)$





Query:  $F = \{e_1, e_7\}$

$FT(s, t)$







# Thank You!

- Questions?