THE GRAPH

THE GRAPH

A GRAPH IS USED TO REPRESENT RELATIONSHIPS BETWEEN ENTITIES

THE ENTITIES CAN BE ANYTHING - GRAPHS FIND APPLICATIONS IN VARIETY OF WAYS IN THE REAL WORLD

THESE RELATIONSHIPS CAN BE ARBITRARILY COMPLICATED AND OF A VARIETY OF DIFFERENT TYPES

VERTEX

EDGE

THE GRAPH

VERTEX

THE ENTITIES ARE PEOPLE

EDGE

PROFESSIONAL GRAPH

PROFESSIONAL RELATIONSHIPS - PEOPLE WORK TOGETHER

SOCIAL GRAPH

PERSONAL RELATIONSHIPS - PEOPLE ARE FRIENDS

THE GRAPH

VERTEX

THE ENTITIES ARE LOCATIONS

MAPS

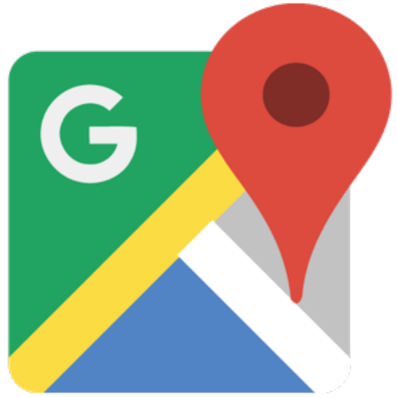
EDGE

A WAY TO GET FROM ONE LOCATION TO ANOTHER

ROADS, RAIL, AIR

EACH OF THESE CAN BE FURTHER THOUGHT OF IN TERMS OF SPECIFIC MEANS OF TRANSPORT

BUS, CAR, TAXI
INDIVIDUAL TRAINS
AIRLINES



THE GRAPH

VERTEX

THE ENTITIES ARE OLD FASHIONED PHONES - LANDLINES

PHONE NETWORK

EDGE

A NETWORK TO CARRY VOICE FROM ONE INSTRUMENT TO ANOTHER

THE GRAPH

VERTEX

THE ENTITIES ARE COMPUTERS ACROSS THE WORLD

THE INTERNET

EDGE

A WAY TO SEND INFORMATION OR DATA FROM ONE COMPUTER TO ANOTHER

THIS CAN INFORMATION CAN BE ROUTED WIRELESSLY OR OVER WIRES

THE GRAPH

GRAPHS ARE USED TO REPRESENT INFORMATION IN MANY MANY REAL WORLD APPLICATIONS

GRAPHS ARE ALSO FAVORITE INTERVIEW QUESTIONS - THEY CAN START FROM SIMPLE CONCEPTS AND GET ARBITRARILY COMPLEX

GRAPH THEORY IS A COMPLEX FIELD OF STUDY BY ITSELF - THERE ARE MANY ALGORITHMS TO OPTIMIZE DIFFERENT PROBLEMS REPRESENTED USING GRAPHS

WE'LL ONLY BE SCRATCHING THE SURFACE HERE - HOWEVER THIS SHOULD GIVE A STRONG FOUNDATION TO SOLVE GRAPH PROBLEMS FROM FIRST PRINCIPLES