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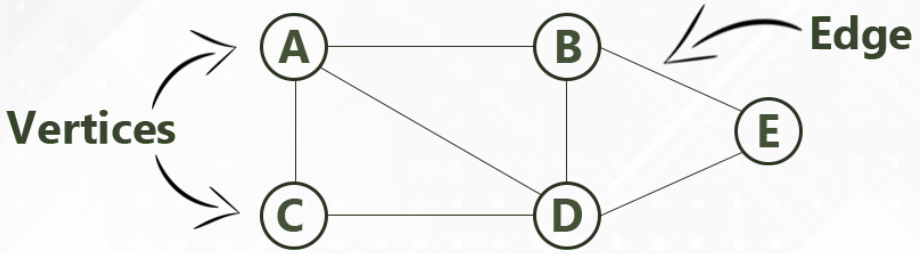
Unit-3 (Part 4)

Graph

Non-Linear Data Structure



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Graphs

- What is Graph?
- Representation of Graph
  - Matrix representation of Graph
  - Linked List representation of Graph
- Elementary Graph Operations
  - Breadth First Search (BFS)
  - Depth First Search (DFS)
  - Spanning Trees
  - Minimal Spanning Trees
  - Shortest Path

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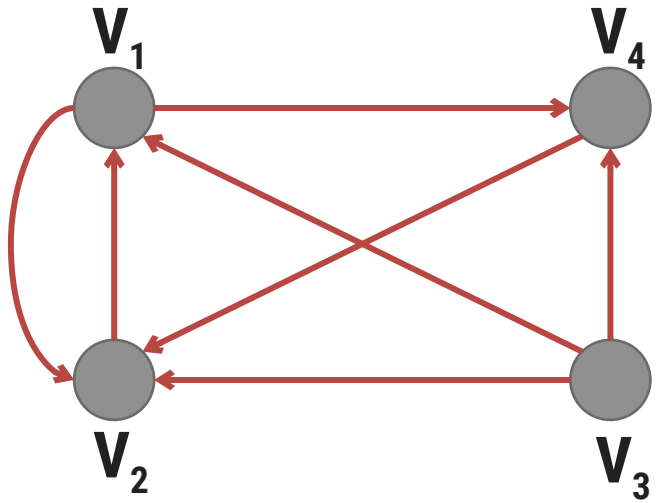
Adjacency matrix

- A **diagrammatic representation** of a **graph** may have limited usefulness. However such a representation **is not feasible** when number of **nodes** an **edges** in a graph **is large**
- It is easy to store and manipulate matrices and hence the graphs represented by them in the computer
- Let **G = (V, E)** be a simple **diagraph** in which **V = {v_1, v_2,…., v_n}** and the **nodes** are assumed to be **ordered** from **v_1** to **v_n**
- An n x n matrix **A** is called **Adjacency matrix** of the graph G whose **elements** are **a_{ij}** are given by

$$a_{ij} = \begin{cases} 1 & if (V_i, V_j) \in E \\ 0 & otherwise \end{cases}$$

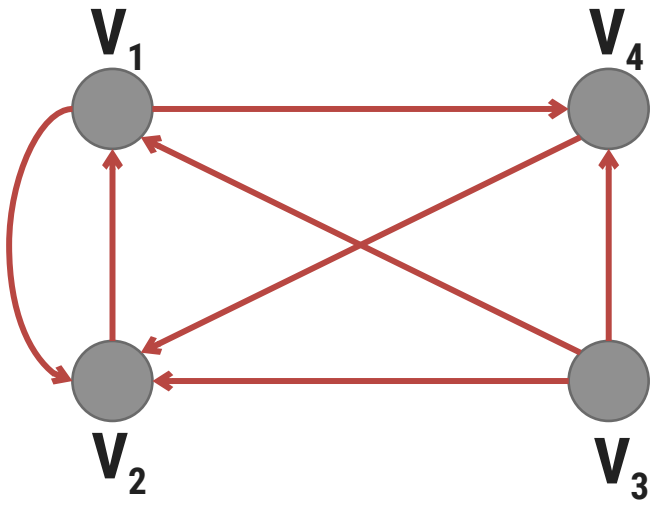
Adjacency matrix

- An **element** of the adjacency matrix is either **0** or **1**
- Any **matrix** whose **elements are either 0 or 1** is called **bit matrix** or **Boolean matrix**
- For a given graph G =m (V, E), an **adjacency matrix** depends upon the ordering of the elements of V
- For different ordering of the elements of V we get different adjacency matrices.



$$A = \begin{array}{c} \\ V_1 \\ V_2 \\ V_3 \\ V_4 \end{array} \begin{array}{c} \begin{array}{cccc} V_1 & V_2 & V_3 & V_4 \end{array} \\ \begin{pmatrix} 0 & 1 & 0 & 1 \\ 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{pmatrix} \end{array}$$

Adjacency matrix



$A =$

	V_1	V_2	V_3	V_4
V_1	0	1	0	1
V_2	1	0	0	0
V_3	1	1	0	1
V_4	0	1	0	0

- The **number of elements** in the **i^{th} row** whose **value is 1** is equal to the **out-degree** of node **V_i**
- The **number of elements** in the **j^{th} column** whose **value is 1** is equal to the **in-degree** of node **V_j**
- For a **NULL graph** which consist of only n nodes but no edges, the **adjacency matrix** has **all its elements 0**. i.e. the adjacency matrix is the NULL matrix

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Power of Adjacency matrix

$$A = \begin{pmatrix} 0 & 1 & 0 & 1 \\ 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{pmatrix} \qquad A^2 = A \times A = \begin{pmatrix} 1 & 1 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 1 & 2 & 0 & 1 \\ 1 & 0 & 0 & 0 \end{pmatrix}$$

$$A^3 = \begin{pmatrix} 1 & 1 & 0 & 1 \\ 1 & 1 & 0 & 0 \\ 2 & 2 & 0 & 1 \\ 0 & 1 & 0 & 1 \end{pmatrix} \qquad A^4 = \begin{pmatrix} 1 & 2 & 0 & 1 \\ 1 & 1 & 0 & 1 \\ 2 & 3 & 0 & 2 \\ 1 & 1 & 0 & 0 \end{pmatrix}$$

- Entry of **1** in **i^{th}** row and **j^{th}** column of **A** shows existence of an **edge (V_i, V_j)**, that is a **path of length 1**
- Entry in **A^2** shows **no of different paths** of **exactly length 2** from node **V_i** to **V_j**
- Entry in **A^3** shows **no of different paths** of **exactly length 3** from node **V_i** to **V_j**

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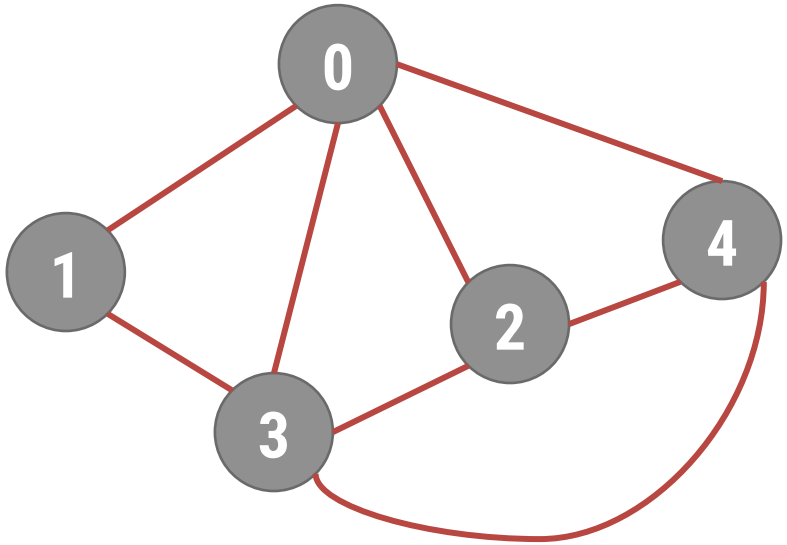
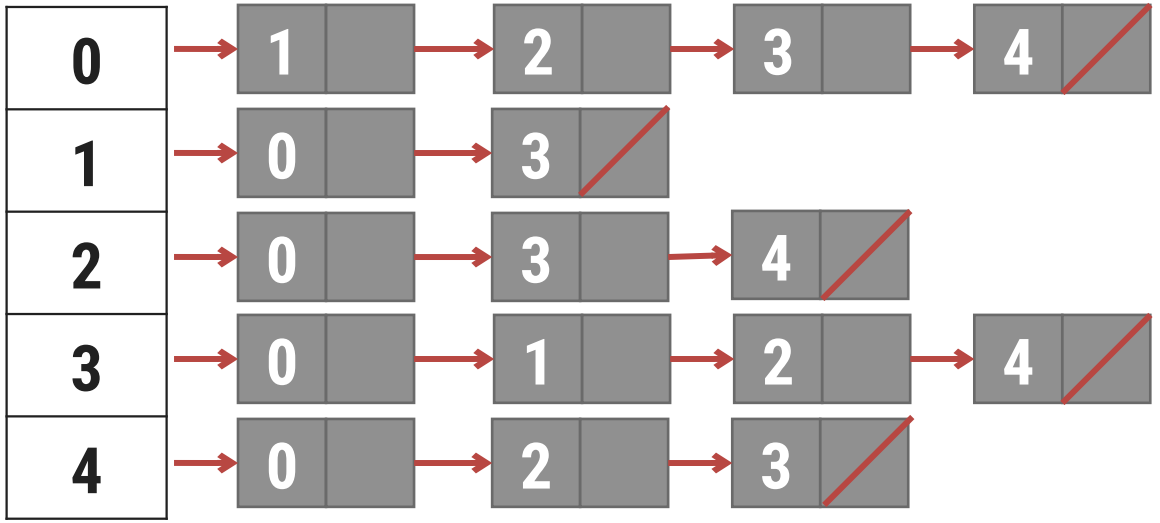
Path matrix or reachability matrix

- Let **G = (V,E)** be a simple diagraph which contains **n nodes** that are assumed to be ordered.
- A **n x n** matrix **P** is called **path matrix** whose elements are given by

$$P_{ij} = \begin{cases} 1, if\ there\ exists\ path\ from\ node\ V_i\ to\ V_j \\ 0, otherwise \end{cases}$$

Adjacency List Representation



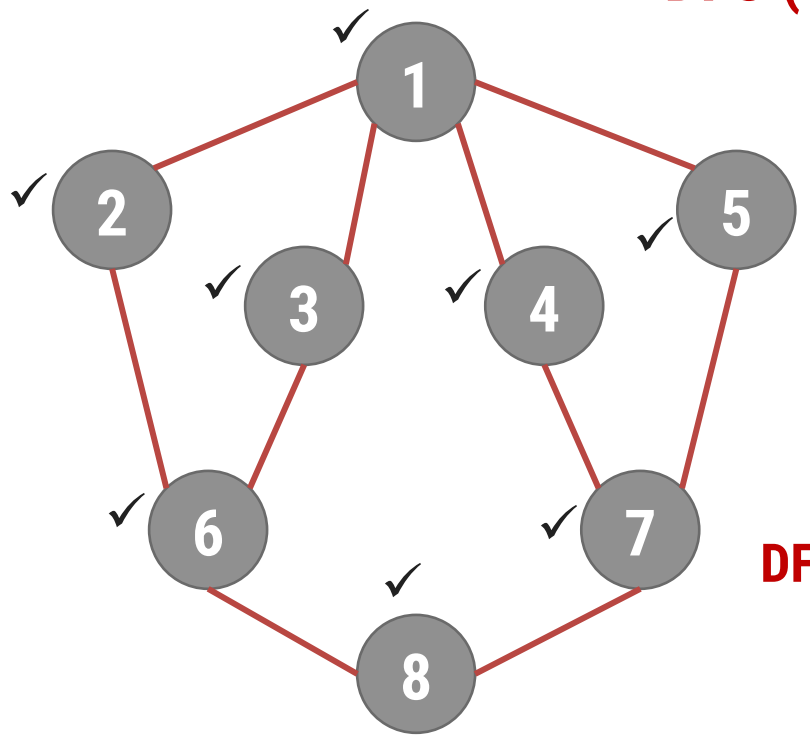


Graph Traversal

- Two Commonly used Traversal Techniques are
  - Depth First Search (DFS)
  - Breadth First Search (BFS)

Depth First Search (DFS)

- It is like preorder traversal of tree
- Traversal can start from any vertex V_i
- V_i is visited and then all vertices adjacent to V_i are traversed recursively using DFS



DFS (G, 1) is given by

Step 1: Visit (1)

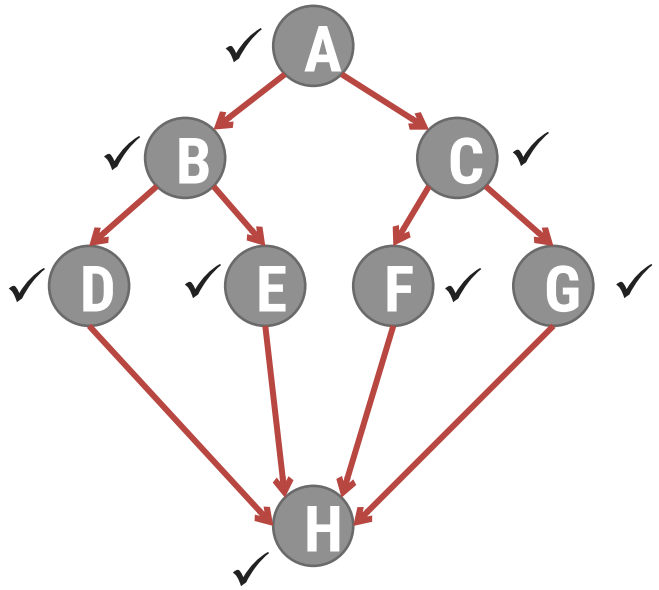
Step 2: DFS (G, 2) → **DFS (G, 2):**
DFS (G, 3)
DFS (G, 4)
DFS (G, 5)

Step1: Visit(2)
Step 2: DFS (G, 6)
→ **DFS (G, 6):**
Step1: Visit(6)
Step 2: DFS (G, 3)
DFS (G, 8)

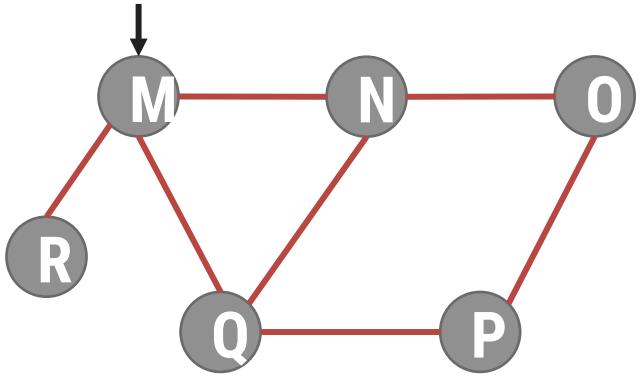
DFS of given graph starting **from** node **1** is given by

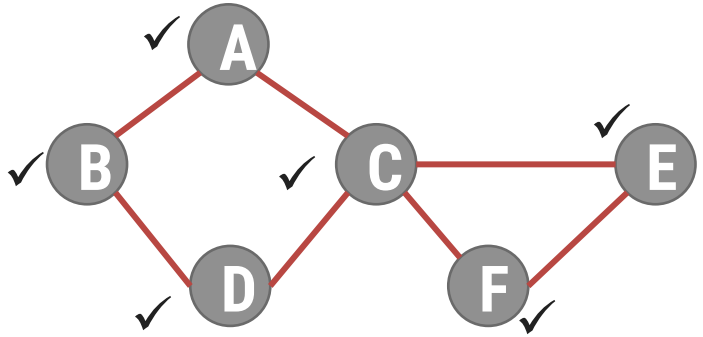
1 2 6 3 8 7 4 5

Depth First Search (DFS)



A B D H E C F G





A B D C F E

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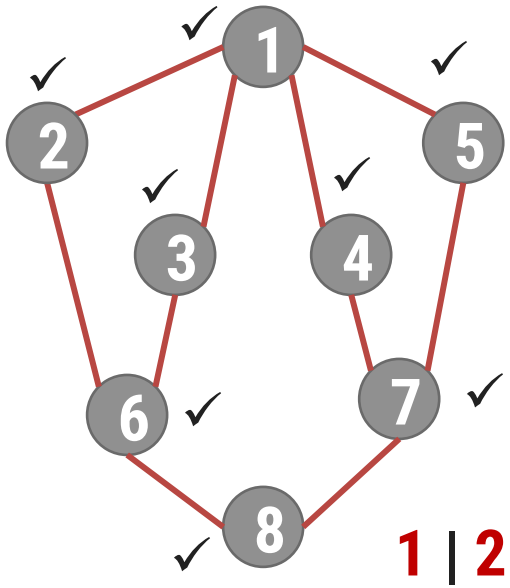
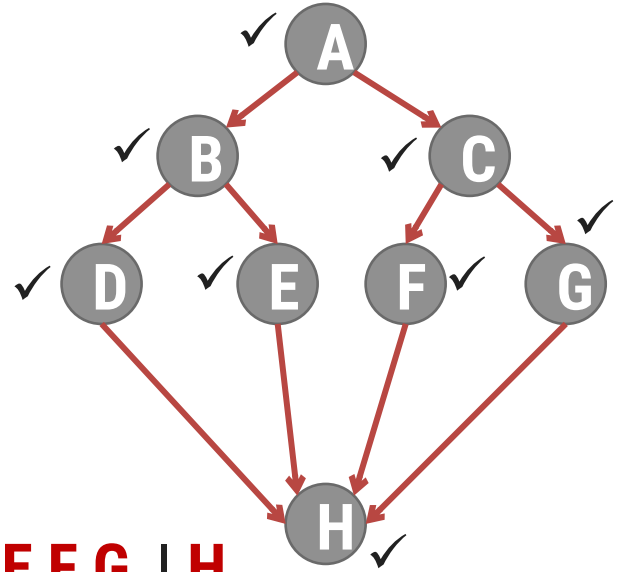
Breadth First Search (BFS)

- This methods **starts** from vertex **V_0**
- **V_0** is marked as **visited**. All **vertices adjacent to V_0** are **visited next**
- Let vertices adjacent to V_0 are V_1, V_2, V_2, V_4
- V_1, V_2, V_3 and V_4 are marked visited
- All unvisited vertices adjacent to V_1, V_2, V_3, V_4 are visited next
- The method **continuous until all vertices** are **visited**
- The algorithm for BFS has to maintain a list of vertices which have been visited but not explored for adjacent vertices
- The vertices which have been visited but not explored for adjacent vertices can be stored in **queue**

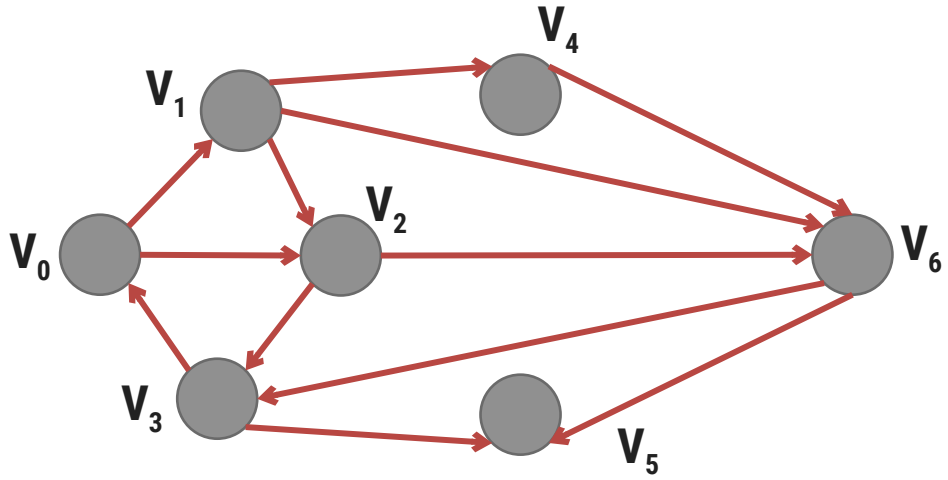
Breadth First Search (BFS)



1 | 2 3 4 5 | 6 7 | 8

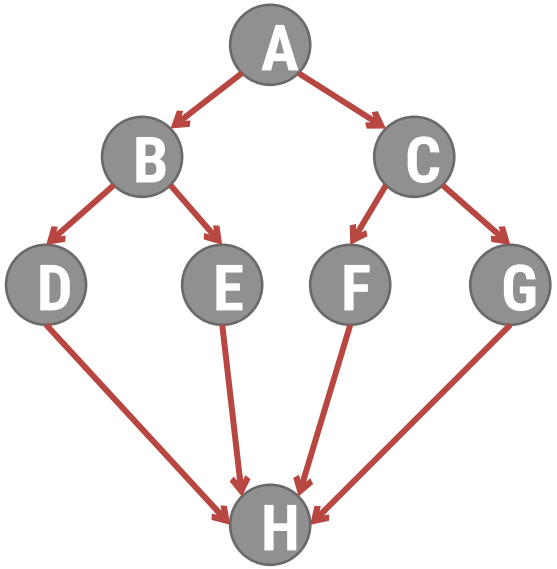


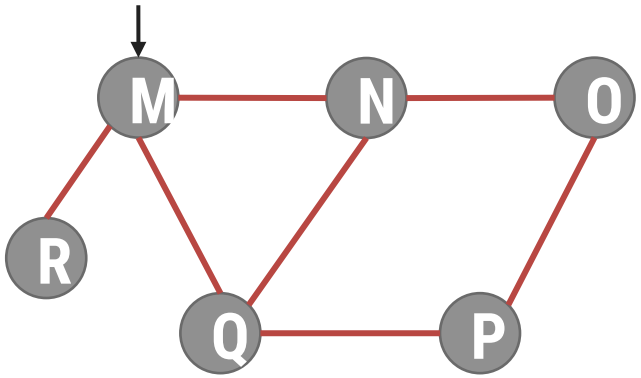
A | B C | D E F G | H

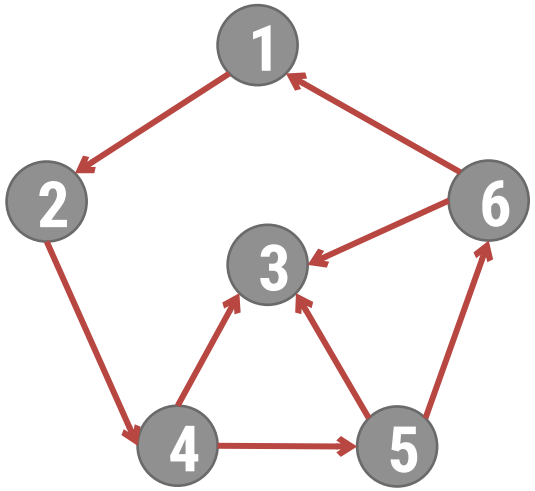


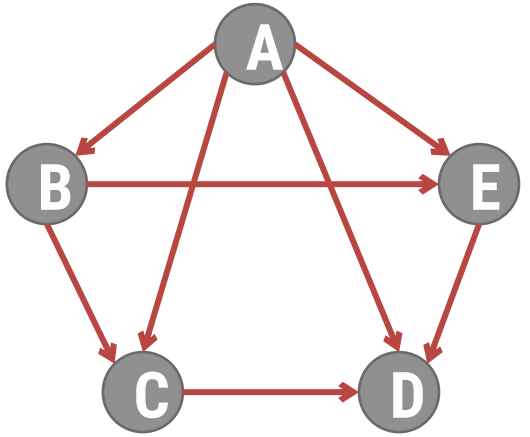
V_0 | V_1 V_2 | V_4 V_6 V_3 | V_5

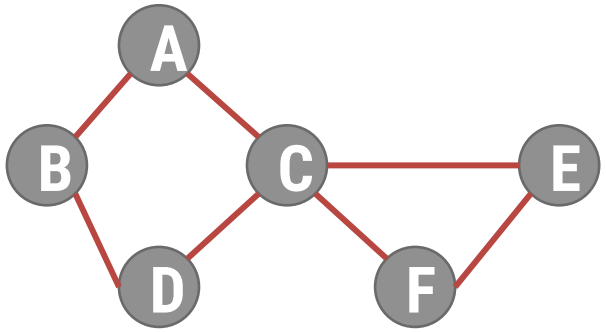
Write DFS & BFS of following Graphs

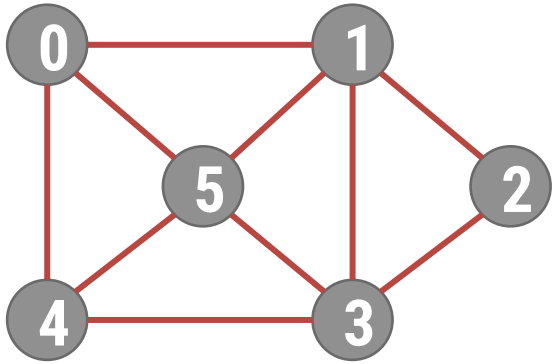


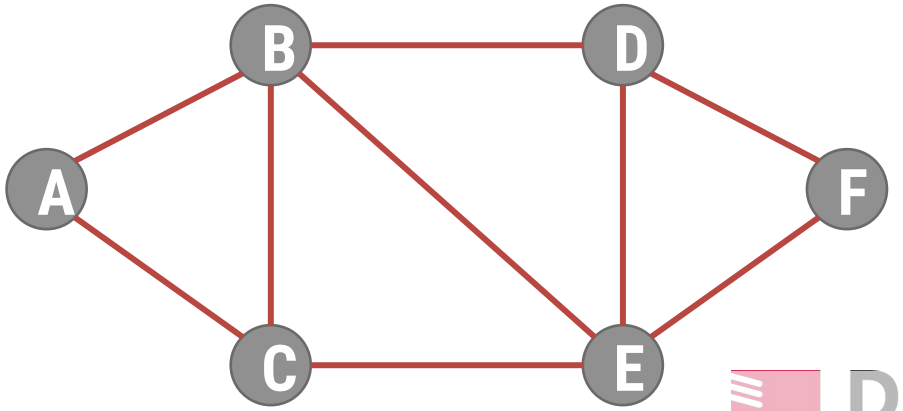












Procedure : DFS (vertex V)

- This procedure **traverse the graph G in DFS** manner.
- V is a starting vertex to be explored.
- Visited[] is an array which tells you whether particular vertex is visited or not.
- W is a adjacent node of vertex V.
- S is a Stack, PUSH and POP are functions to insert and remove from stack respectively.

Procedure : DFS (vertex V)

```
1. [Initialize TOP and Visited]
   visited[] ← 0
   TOP ← 0
2. [Push vertex into stack]
   PUSH (V)
3. [Repeat  while stack is not Empty]
   Repeat Step 3 while stack is not empty
       v  ← POP()
       if   visited[v] is 0
       then visited [v] ← 1
            for all W adjacent to v
               if   visited [w] is 0
              then PUSH (W)
            end for
       end if
```

Procedure : BFS (vertex V)

- This procedure **traverse the graph G in BFS** manner
- **V** is a **starting vertex** to be explored
- Q is a queue
- visited[] is an array which tells you whether particular vertex is visited or not
- W is a adjacent node f vertex V.

Procedure : BFS (vertex V)

```
1. [Initialize Queue & Visited]
   visited[] ← 0
   F ← R ← 0
2. [Marks visited of V as 1]
   visited[v] ← 1
3. [Add vertex v to Q]
   InsertQueue(V)
4. [Repeat while Q is not Empty]
   Repeat while Q is not empty
     v ← RemoveFromQueue()
     For all vertices W adjacent to v
       If   visited[w] is 0
      Then visited[w] ← 1
           InsertQueue(w)
```

Spanning Tree

- A **Spanning tree** of a graph is an undirected tree **consisting of only those edges necessary to connect all the nodes** in the original graph
- A spanning tree has the **properties** that
  - For any **pair** of nodes there exists **only one path between them**
  - **Insertion** of any **edge** to a spanning tree **forms a unique cycle**
- The particular **Spanning for a graph** depends on the **criteria** used to **generate** it
- If **DFS search** is use, those edges traversed by the algorithm forms the edges of tree, referred to as **Depth First Spanning Tree**
- If **BFS Search** is used, the spanning tree is formed from those edges traversed during the search, producing **Breadth First Spanning tree**

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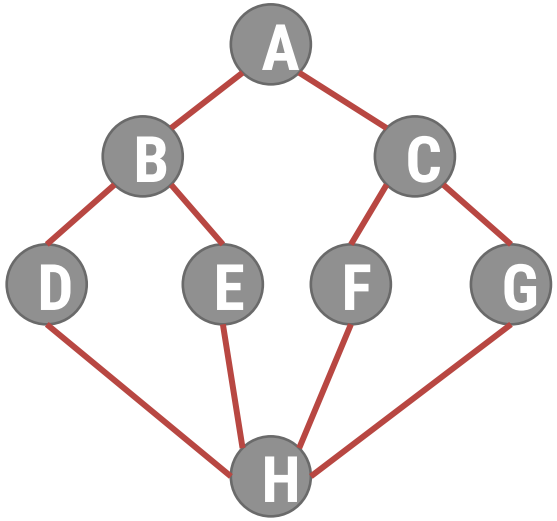
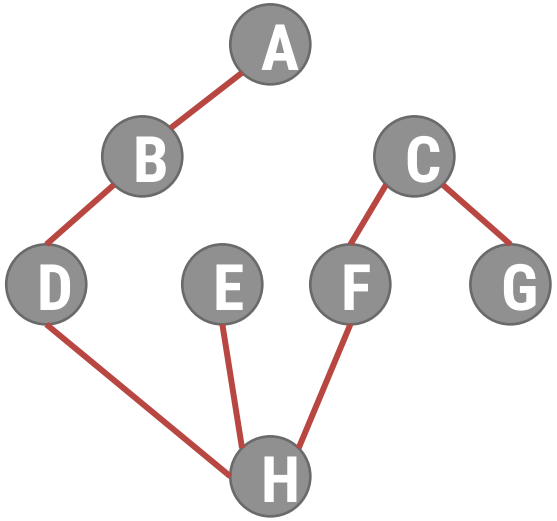
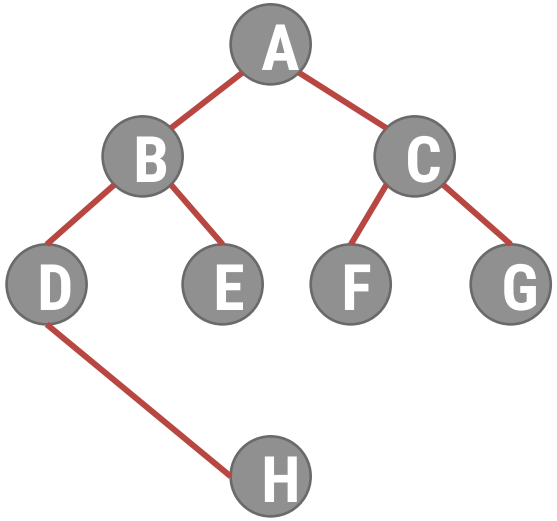
Construct Spanning Tree

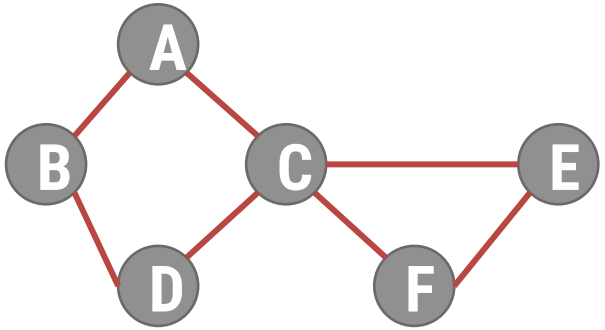


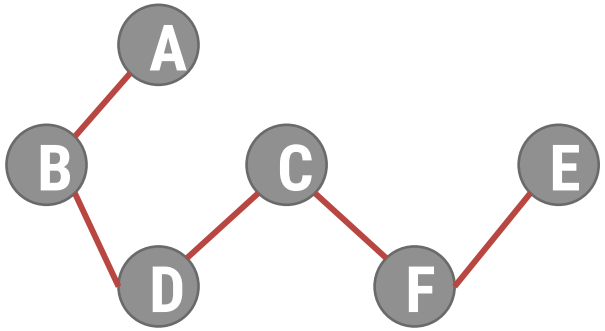


DFS Spanning Tree

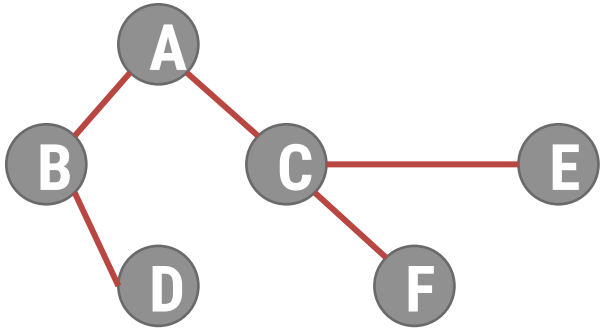


BFS Spanning Tree





DFS Spanning Tree



BFS Spanning Tree

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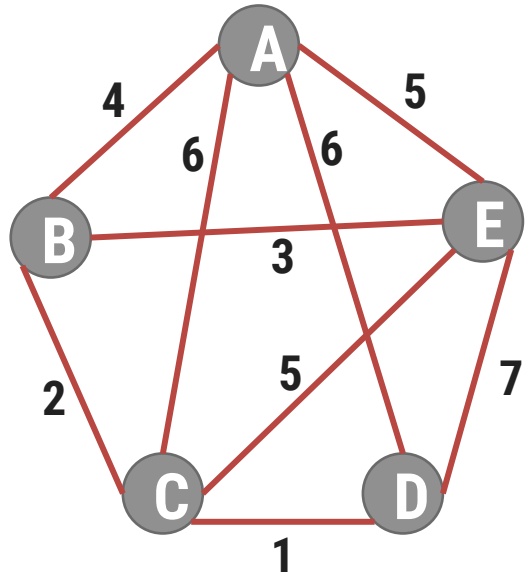
Minimum Cost Spanning Tree

- The **cost of a spanning tree** of a weighted undirected graph is the sum of the costs(weights) of the edges in the spanning tree
- A **minimum cost spanning tree** is a spanning tree of least cost
- Two techniques for Constructing minimum cost spanning tree
  - Prim's Algorithm
  - Kruskal's Algorithm

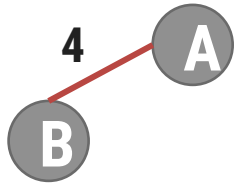
Prims Algorithm



A – B | 4	A – D | 6	C – E | 5
A – E | 5	B – E | 3	C – D | 1
A – C | 6	B – C | 2	D – E | 7

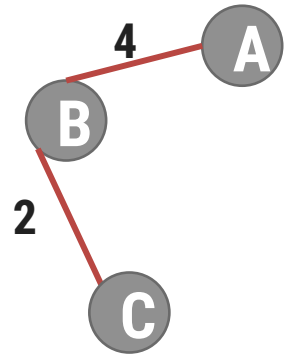
Let X be the set of nodes explored, initially X = { A }

Step 1: Taking minimum Weight edge of all Adjacent edges of X={A}



X = { A , B }

Step 2: Taking minimum weight edge of all Adjacent edges of X = { A , B }

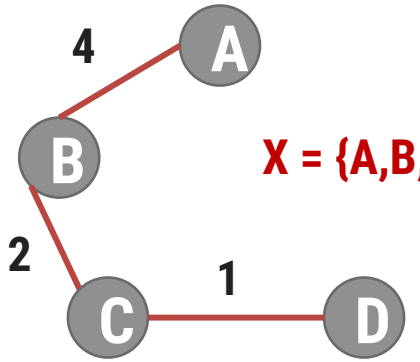


X = {A ,B,C}

We obtained minimum spanning tree of cost:

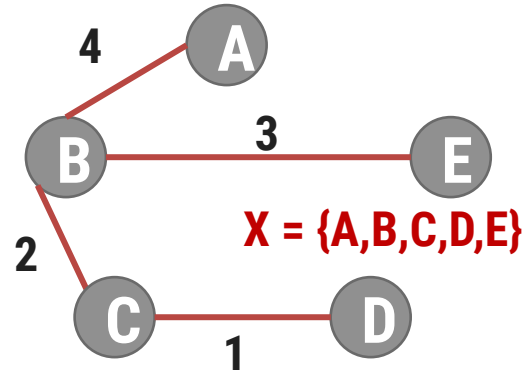
4 + 2 + 1 + 3 = 10

Step 3: Taking minimum weight edge of all Adjacent edges of X = { A , B , C }



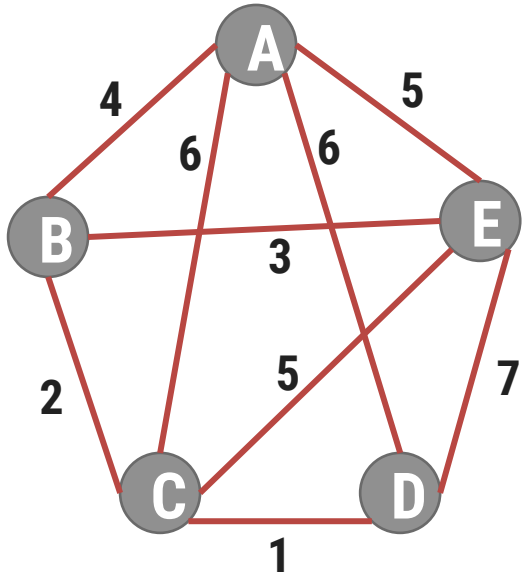
X = {A,B,C,D}

Step 4: Taking minimum weight edge of all Adjacent edges of X = {A ,B ,C ,D }



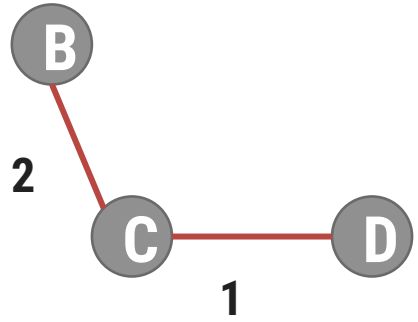
X = {A,B,C,D,E}

Kruskal's Algorithm

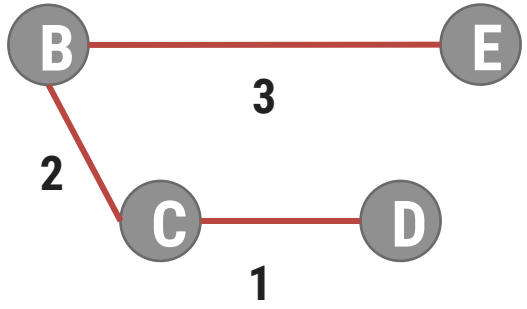


Step 1: Taking min edge (C,D)

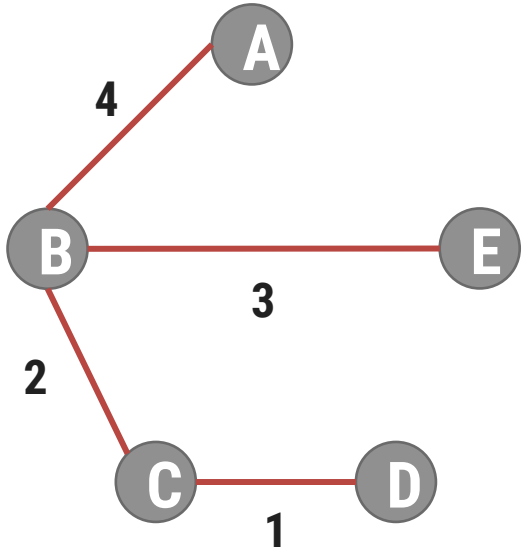
Step 2: Taking next min edge (B,C)



Step 3: Taking next min edge (B,E)

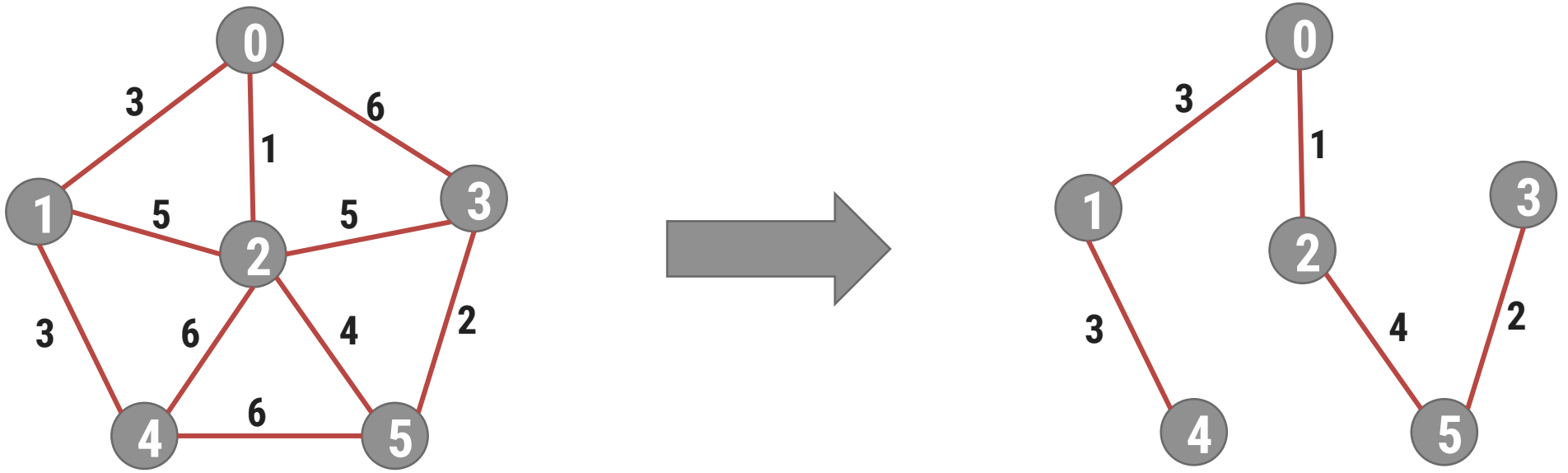


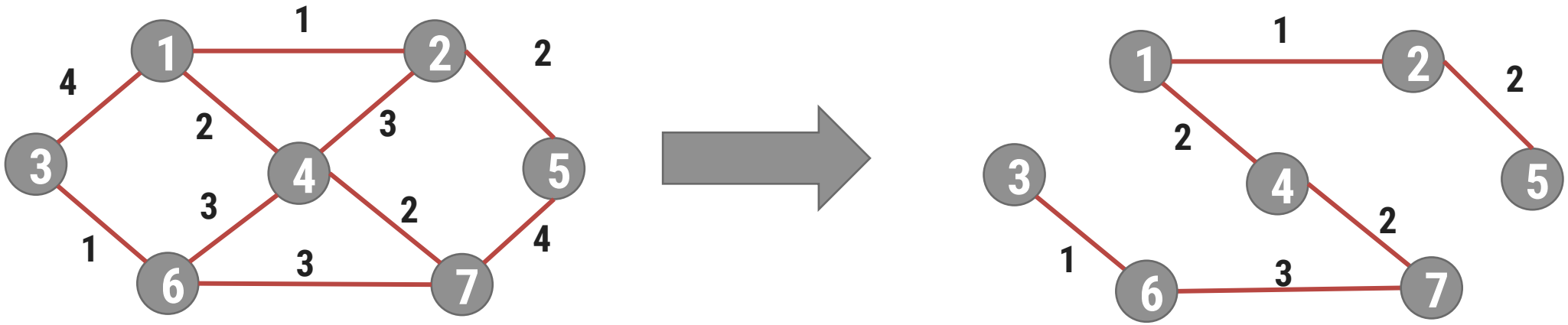
Step 4: Taking next min edge (A,B)



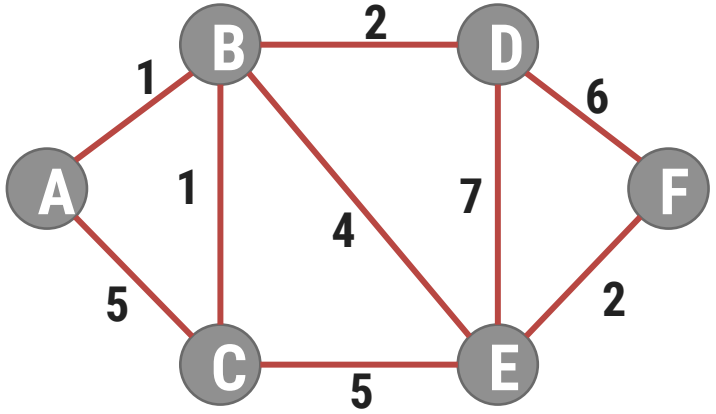
so we obtained minimum spanning tree of cost:
4 + 2 + 1 + 3 = 10

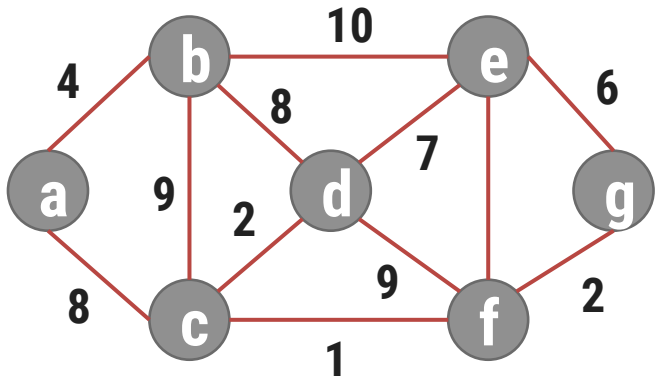
Construct Minimum Spanning Tree

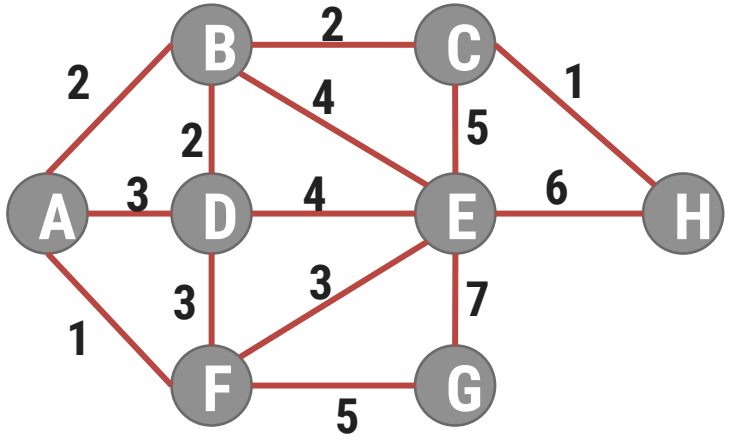


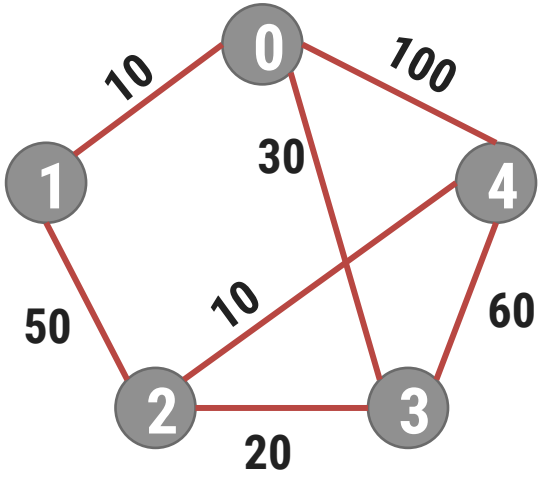


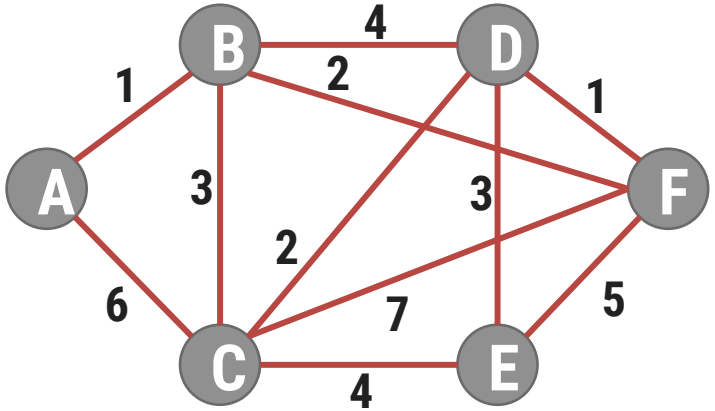
Draw minimum spanning tree using Prim's & Kruskal's algorithm

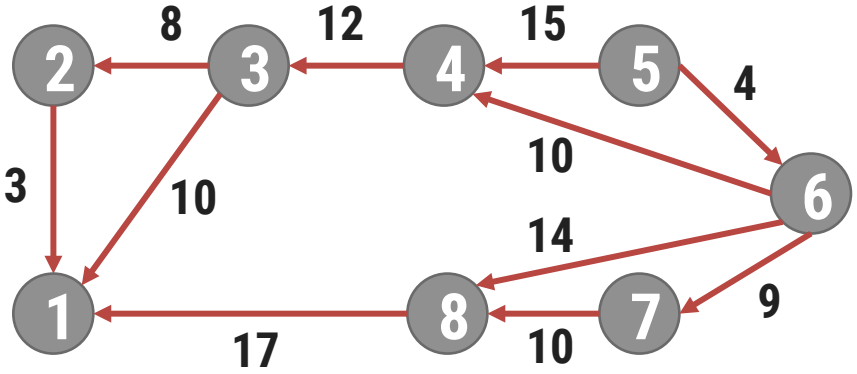












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Shortest Path Algorithm

- Let **G = (V,E)** be a simple diagraph with **n vertices**
- The problem is to **find out shortest distance** from a **vertex to all other vertices** of a graph
- **Dijkstra Algorithm** – it is also called Single Source Shortest Path Algorithm

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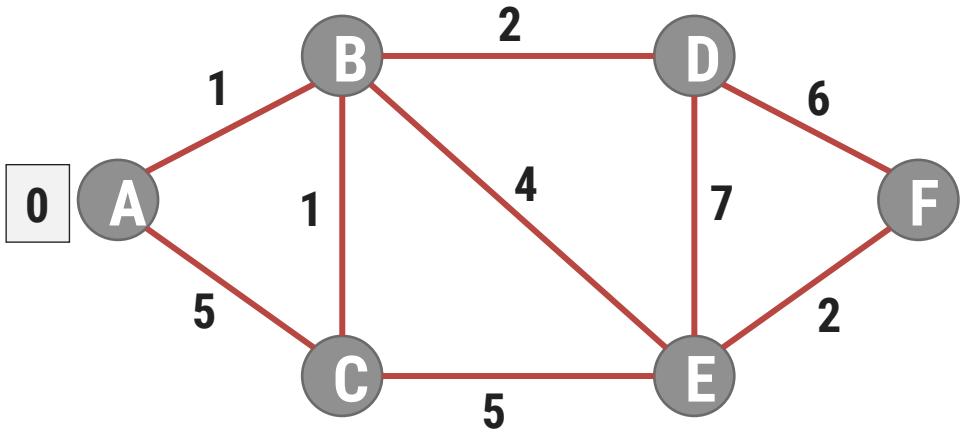
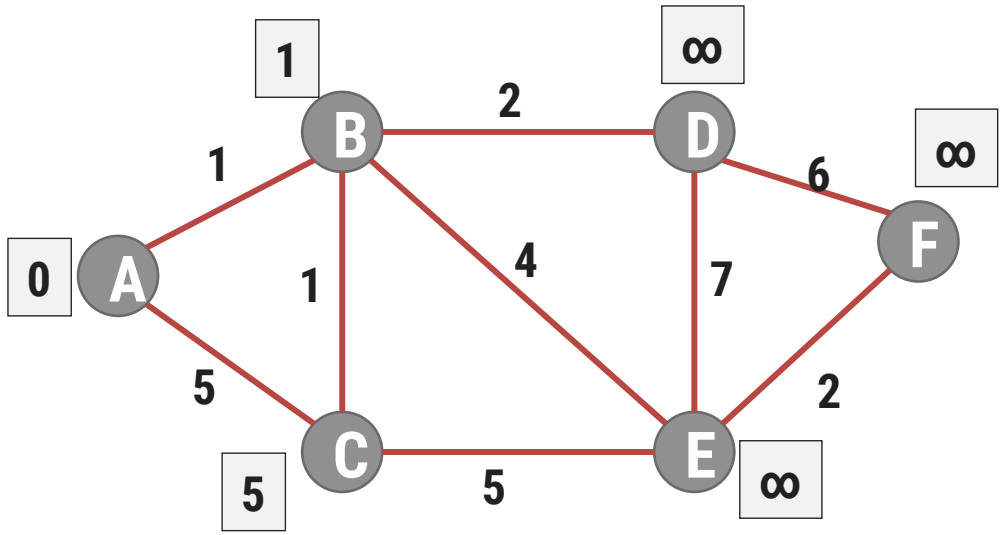
Dijkstra Algorithm – Shortest Path



	A	B	C	D	E	F
Distance	0	∞	∞	∞	∞	∞
Visited	0	0	0	0	0	0

1st Iteration: Select **Vertex A** with minimum distance



	A	B	C	D	E	F
Distance	0	1	5	∞	∞	∞
Visited	1	0	0	0	0	0

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Dijkstra Algorithm – Shortest Path

2nd Iteration: Select **Vertex B** with minimum distance

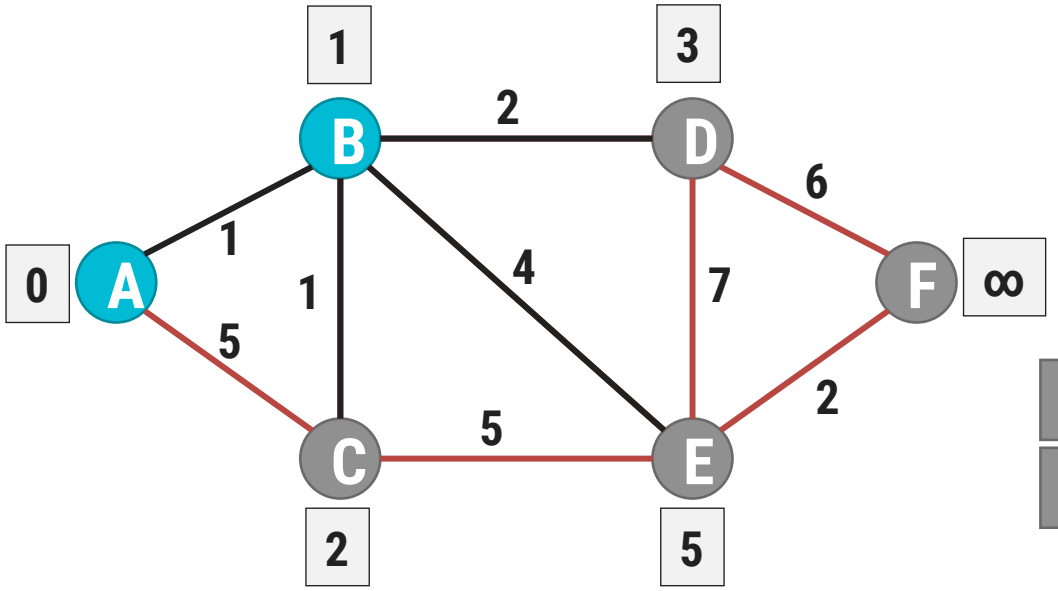
Cost of going to C via B = dist[B] + cost[B][C] = 1 + 1 = 2

Cost of going to D via B = dist[B] + cost[B][D] = 1 + 2 = 3

Cost of going to E via B = dist[B] + cost[B][E] = 1 + 4 = 5

Cost of going to F via B = dist[B] + cost[B][F] = 1 + ∞ = ∞

	A	B	C	D	E	F
Distance	0	1	5	∞	∞	∞
Visited	1	0	0	0	0	0



	A	B	C	D	E	F
Distance	0	1	2	3	5	∞
Visited	1	1	0	0	0	0

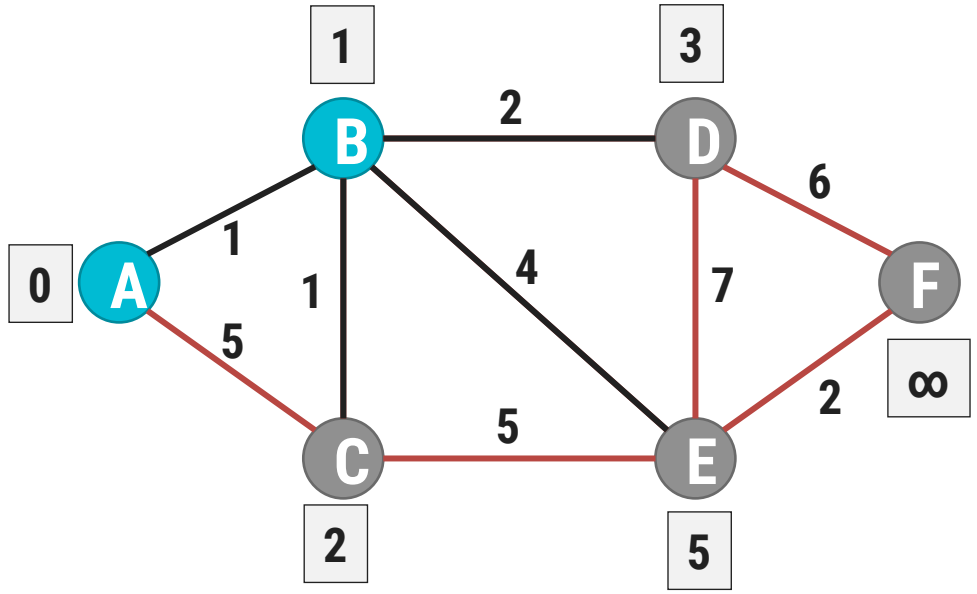
Dijkstra Algorithm – Shortest Path

3rd Iteration: Select **Vertex C** via B with minimum distance

Cost of going to D via C = dist[C] + cost[C][D] = 2 + ∞ = ∞

Cost of going to E via C = dist[C] + cost[C][E] = 2 + **5** = **7**

Cost of going to F via C = dist[C] + cost[C][F] = 2 + ∞ = ∞



	A	B	C	D	E	F
Distance	0	1	2	3	5	∞
Visited	1	1	0	0	0	0

	A	B	C	D	E	F
Distance	0	1	2	3	5	∞
Visited	1	1	1	0	0	0

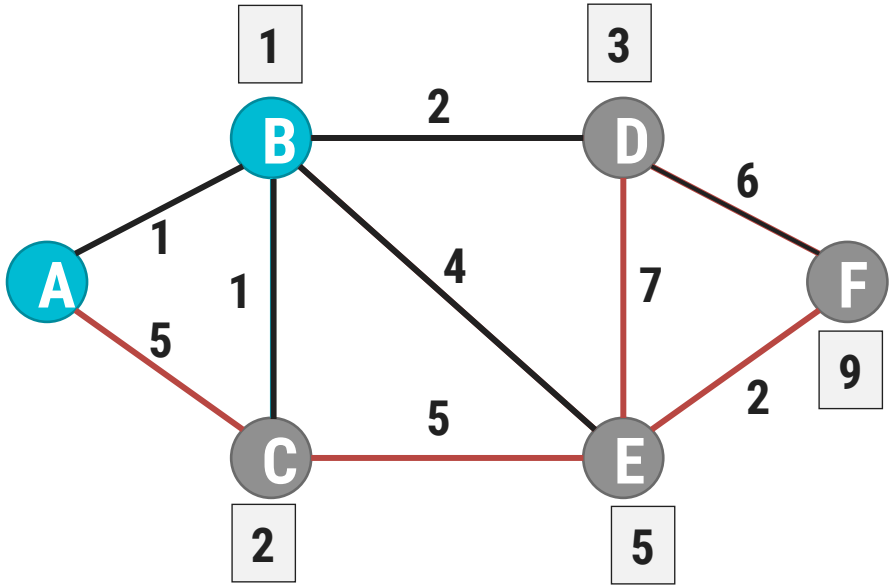
Dijkstra Algorithm – Shortest Path

4th Iteration: Select **Vertex D** via path A - B with minimum distance

Cost of going to E via D = dist[D] + cost[D][E] = 3 + **7** = **10**

Cost of going to F via D = dist[D] + cost[D][F] = 3 + **6** = **9**

	A	B	C	D	E	F
Distance	0	1	2	3	5	∞
Visited	1	1	1	0	0	0



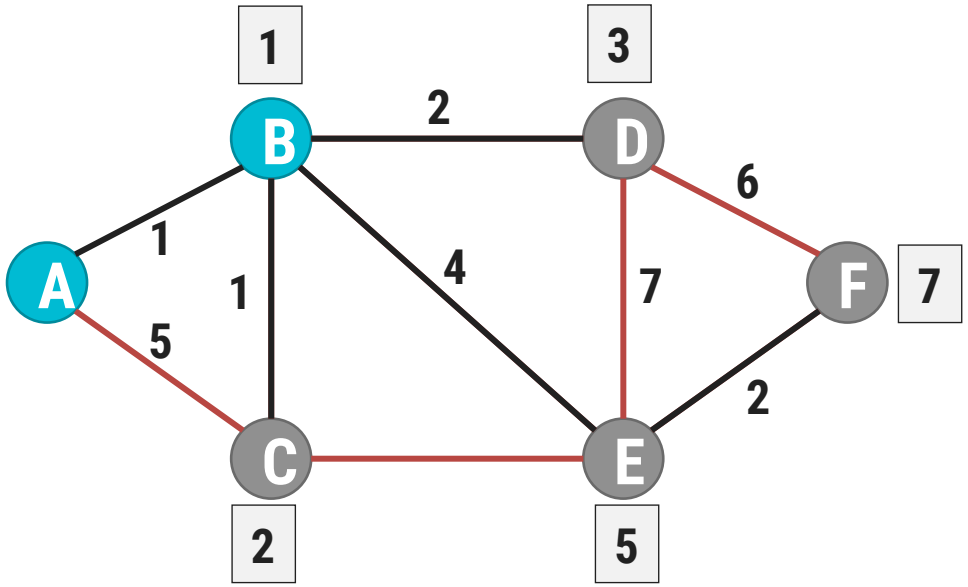
	A	B	C	D	E	F
Distance	0	1	2	3	5	9
Visited	1	1	1	1	0	0

Dijkstra Algorithm – Shortest Path

4th Iteration: Select **Vertex E** via path A – B – E with minimum distance

Cost of going to F via E = dist[E] + cost[E][F] = 5 + **2** = **7**

	A	B	C	D	E	F
Distance	0	1	2	3	5	9
Visited	1	1	1	1	0	0

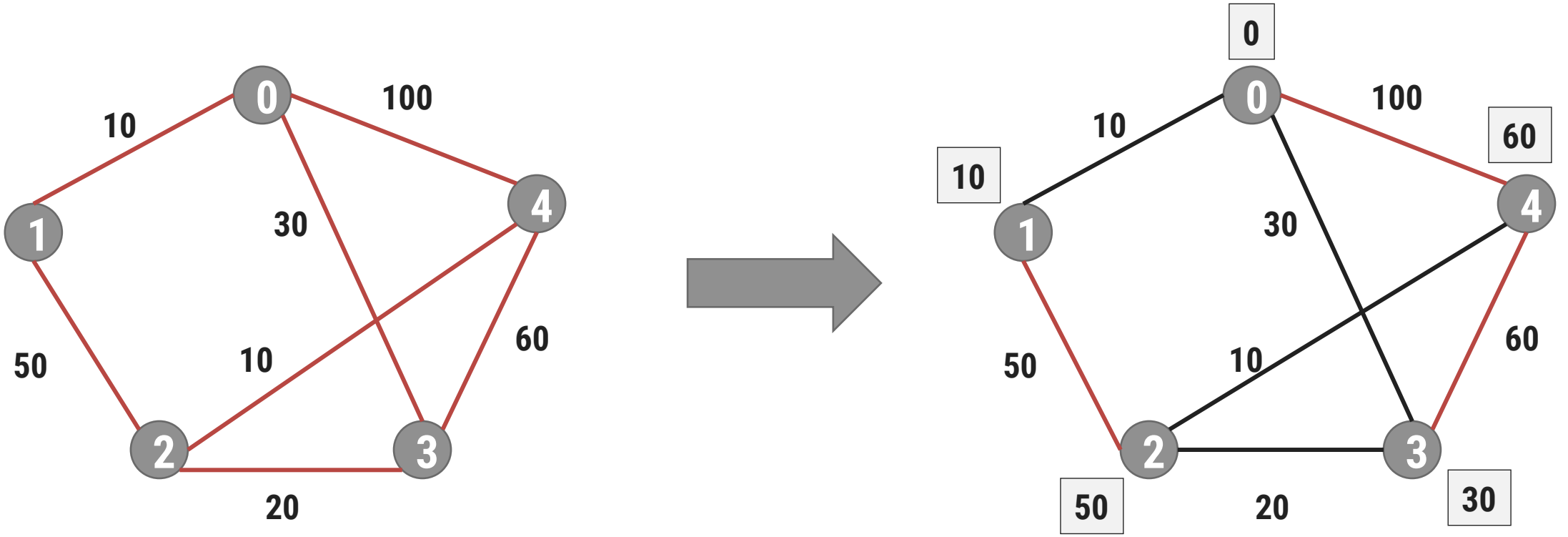


	A	B	C	D	E	F
Distance	0	1	2	3	5	7
Visited	1	1	1	1	1	0

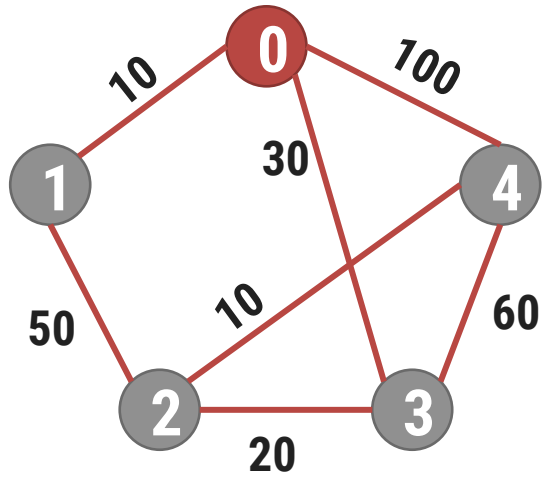
Shortest Path from A to F is
A → B → E → F = 7

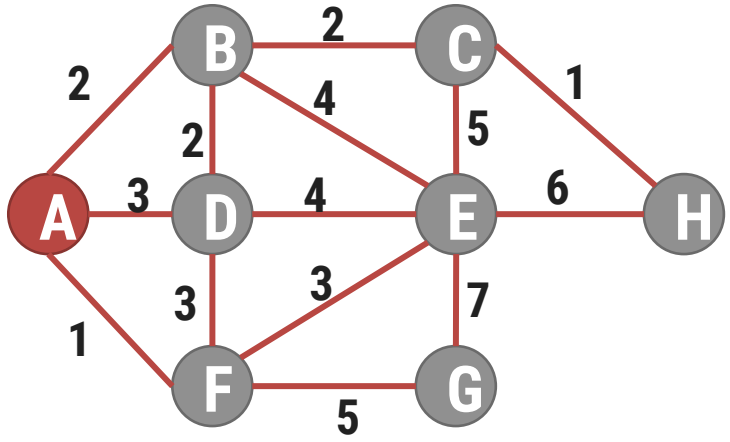
Shortest Path

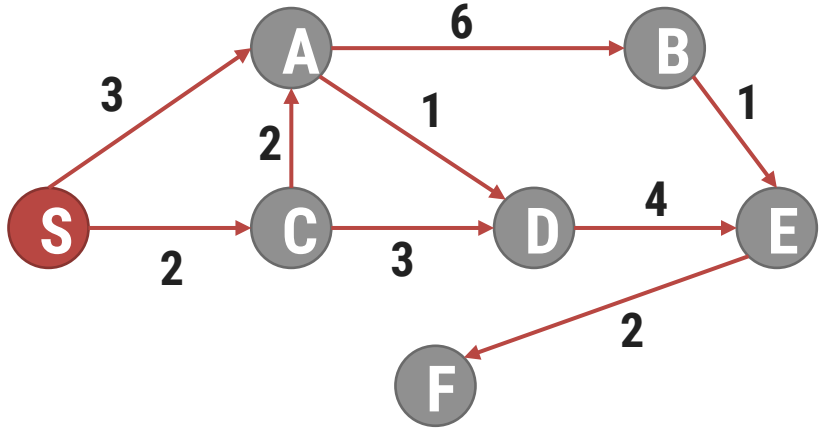
Find out shortest path from node 0 to all other nodes using Dijkstra Algorithm

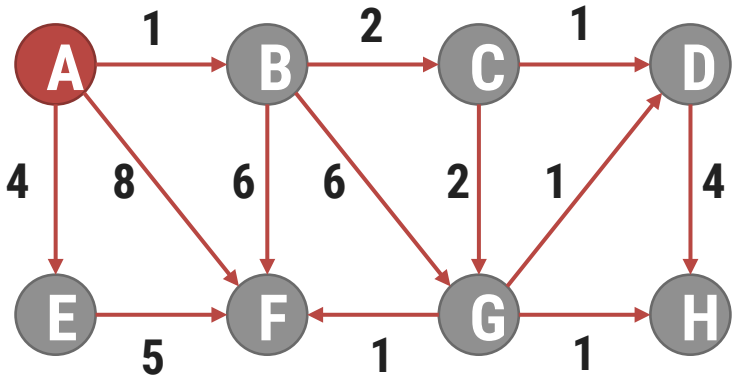


Find shortest path between given nodes using Dijkstra's algorithm









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Thank You

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MARUTI SUZUKI ARENA

MARUTI SUZUKI ARENA

FOR THE DRIVE INSIDE YOU THAT WANTS IT ALL

Maybe it's the way it stands. Unshaken. Self-assured.
Maybe it's the way it moves. As if it owns the road.
The Victoris is for the ones who know when to hold back, and when to go all out.
Who seek out new adventures, new experiences.
Who refuse to settle for anything less than everything.

For the ones who have it all. An SUV that's:

GOT IT ALL

THE CHISELED LOOK THAT SAYS IT ALL

The Victoris speaks in a design language that's impossible to ignore. Its sweeping silhouette and sculpted lines create a stance that's dynamic when in motion and commanding when still.
The seamless tail light stretches across the rear, leaving a signature that lingers long after it's gone.

CRAFTED FOR ALL YOUR SENSES

A cabin tailored for those who know what they want. Everything. With a touch of class.

Its expansive design with dual-tone interiors, panoramic sunroof, vibrant 64-colour ambient lighting, right down to the elegant three-level dashboard with precision stitching; creates a space that serenades all your senses.


64-COLOUR AMBIENT LIGHTING


PANORAMIC SUNROOF


PLUSH LEATHERETTE SEATS

ALL YOU NEED FOR COMPLETE PEACE OF MIND

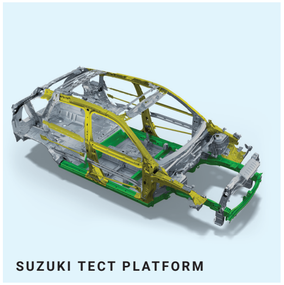
Safety is more than just a feature. It's a promise. It's the quiet assurance that's inherent to every aspect of the Victoris.
Where advanced driver-assist technology works seamlessly with intuitive features to create a drive that feels unshakably secure.
So, while the road may throw its share of surprises, you stay confidently in control.

6 AIRBAGS STANDARD

FRONT PARKING ASSIST SENSOR WITH AUTO 360° CAMERA ACTIVATION

360° VIEW HD CAMERA WITH 11 VIEWS

ELECTRONIC PARKING BRAKE WITH BRAKE HOLD



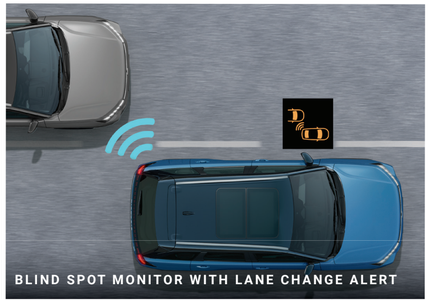
SUZUKI TECT PLATFORM

ADVANCED LEVEL 2 ADAS

Real confidence comes from knowing that your car is always thinking two steps ahead.
The Level 2 ADAS on the Victoris preempts, and protects you, as your ever-present guardian.

LEVEL 2 ADAS* FEATURES

- Lane Keep Assist
- Automatic Emergency Braking
- Forward Collision Warning
- Blind Spot Monitor with Lane Change Alert
- Adaptive Cruise Control with Curve Speed Reduction
- High Beam Assist
- Lane Departure Prevention
- Lane Departure Warning
- Rear Cross Traffic Alert
- Vehicle Sway Warning



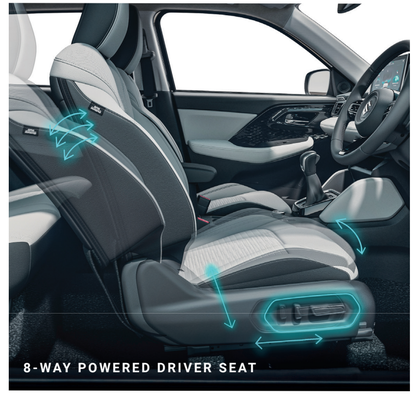
*Advanced Driver Assistance System (ADAS) is not a substitute for human eye and driver vigilance, it is a driver assist system that enhances driving experience and safety. The system performance may vary from road and driving conditions. The driver shall remain responsible for safe, vigilant and attentive driving. Features and specifications may vary model wise.

SMART POWERED TAILGATE WITH GESTURE CONTROL

Hands full? Just a swipe with your foot makes access to the boot effortless.

ALL-IN ON COMFORT

In the Victoris, comfort begins long before the journey does. It starts the moment you settle in. The cool embrace of the ventilated seats. The effortless reach of every control. Every aspect of the Victoris adjusts to your personalised comfort to ensure that the road ahead feels less like travel and more like an experience.



8-WAY POWERED DRIVER SEAT

26.03cm MULTI-INFORMATION DIGITAL CLUSTER

AUTO PURIFY WITH PM2.5 DISPLAY

VENTILATED FRONT SEATS

ALL THE TECH.
ALL FOR YOU.

Experience intuitive tech at its best with the Smartplay Pro X Touchscreen Infotainment System. With all your preferred connectivity features, an extensive app store, and a host of personalization options, the Victoris creates a space that's a reflection of you.

AMBIENT LIGHTING

MOBILE TETHERING FOR INTERNET

AUTO PURIFY WITH PM2.5 DISPLAY

ALEXA AUTO VOICE AI

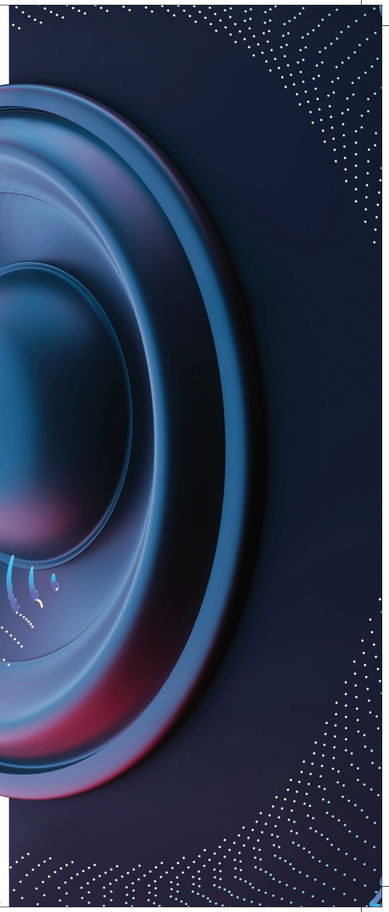
IN-BUILT APP STORE WITH 35+ APPS

ANDROID AUTO™ APPLE CARPLAY™

Infinity by HARMAN | Dolby ATMOS

IMMERSIVE INFINITY SPEAKERS WITH DOLBY ATMOS 5.1 SURROUND SOUND

Every whisper, every raindrop gets its own spotlight with 8 finely-tuned speakers from Infinity by Harman. The immersive 5.1 Channel Dolby Atmos Surround Sound sets the stage for the most vibrant crescendos and dramatic silences. Your drive is where the sound comes alive.



NEXT GEN SUZUKI CONNECT WITH E-CALL

With over 60 smart features, get real-time insights, emergency alerts and vehicle status, on your smartwatch or mobile. The next-gen Suzuki Connect helps you stay connected, informed, and in control, wherever you go.

ALEXA AUTO ON-BOARD

Now take Alexa along for the drive with Alexa Auto Voice AI and over 40 smart features. Stream music, ask questions, and even control smart appliances at home. Experience hands-free convenience, designed for the road.

PERFORMANCE
THAT GOES ALL OUT.

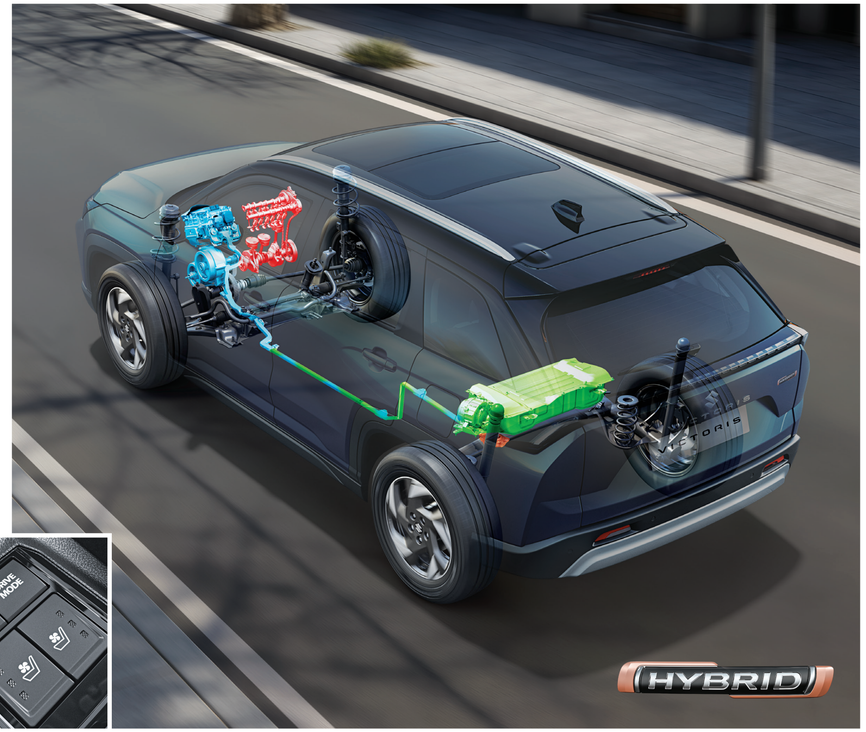
From quick sprints to steady climbs, the Victoris adapts seamlessly to every road and every mood. Agile when the moment calls for it, effortless when the journey demands it. Every drive is tuned to respond to you, delivering exhilaration and calm in equal measure.

AVAILABLE IN:

HYBRID | ALLGRIP | smart HYBRID | S-CNG

FUTURISTIC STRONG HYBRID

For the ones who prefer power without compromise, the Strong Hybrid is the perfect ally. Paired with a battery pack, its refined and silent drive delivers a performance that's smooth, confident, and efficient. With the Victoris, expect nothing less than everything.



ALL-TERRAIN ALLGRIP SELECT

For the ones who own every road they tread, the Victoris with Suzuki ALLGRIP Select is the ultimate companion. From city streets to untamed trails, it adapts seamlessly to challenging terrains, delivering a drive that is as controlled as it is adventurous. Powerful, commanding, and uncompromising, at every turn.

ALL-NEW UNDERBODY S-CNG

A clear boot space with a clean conscience. The Victoris with factory-fitted underbody S-CNG ensures that every journey remains uncompromised. Its clean engine exceeds the fuel efficiency you expect. Its clever design frees-up every inch of your boot space. Its in-built safety features preserve your peace of mind. It's a win-win-win for the Victoris.

THE EXHILARATING SMART HYBRID

The always reliable K15C engine with progressive mild hybrid technology spoils you for choice. Feel every gear shift with a 5-Speed Manual Transmission as it delivers the perfect balance of power and precision for the purist.
6-Speed Automatic Transmission with paddle shifters let you effortlessly switch between control and convenience.
When every shift is smooth, and every acceleration confident, you feel like you own the world - all of it.

ADVANCED PETROL K15C ENGINE
WITH PROGRESSIVE MILD HYBRID

6-SPEED AUTOMATIC TRANSMISSION
WITH PADDLE SHIFTERS

5-SPEED MANUAL TRANSMISSION

BLACK & IVORY INTERIOR WITH SILVER ACCENTS

ALL-BLACK INTERIOR WITH CHAMPAGNE GOLD ACCENTS

GOT IT ALL - IN EVERY COLOUR

The all-new Victoris comes in a variety of stunning hues that are sure to vibe with you.

DUALTONE

ETERNAL BLUE | BLUISH BLACK ROOF

SIZZLING RED | BLUISH BLACK ROOF

SPLENDID SILVER | BLUISH BLACK ROOF

MONOTONE

ETERNAL BLUE

SIZZLING RED

MYSTIC GREEN

BLUISH BLACK

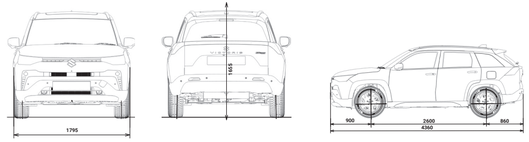
MAGMA GREY

SPLENDID SILVER

ARCTIC WHITE

FEATURE SPECIFICATIONS	PETROL	PETROL/CNG	STRONG HYBRID
Length (mm)	4360		
Width (mm)	1795		
Height (mm)	1655		
Wheelbase (mm)	2600		
Turning Radius (m)	5.4		
Fuel Efficiency	21.18 km/l (MT), 21.06 km/l (AT), 19.07 km/l (ALLGRIP AT)	27.02 km/kg	28.65 km/l (Strong Hybrid Petrol e-CVT)
Fuel Tank Capacity (L)	45	Petrol: 45 CNG: 55 (water eqvt)	45
Seating Capacity (nos)	5		
Kerb Weight (kg)	1145-1195* (MT) 1185-1225* (AT) 1285-1305* (ALLGRIP AT)	1230-1245	1250-1295
Gross Vehicle Weight (kg)	1655(MT), 1685 (AT), 1765 (ALLGRIP AT)	1695	1755
ENGINE			
Engine Type	K15C Smart Hybrid	K15C	M15D
Displacement (cc)	1462		1490
Fuel Type	Petrol	Petrol+CNG	Petrol (Strong Hybrid)
Max Power	75.8 kW (103.06 Ps) @ 6000 rpm	74 kW (100.6 Ps) @ 6000 rpm - Petrol Mode 64.6 kW (87.8 Ps) @ 5500 rpm - CNG Mode	68kW (92.45 Ps) @ 5500 rpm
Max Torque	139 Nm @ 4300 rpm	137.1 Nm @ 4300 rpm - Petrol Mode 121.5 Nm @ 4200 rpm - CNG Mode	122 Nm @ 3800-4800 rpm
HYBRID SYSTEM			
Battery Type	Lithium-ion	-	Lithium-ion
Battery Voltage	-	-	177.6 V
Motor Generator Type	-	-	AC Synchronous Motor
Max Power	-	-	59 kW (80 Ps) @ 3995-5500
Max Torque	-	-	141 Nm @ 0-2695
Driving Mode	-	-	ECO + Normal + Power
ISG	12V - 6Ah (Li-Ion)	-	-
TRANSMISSION			
Type	5MT/6AT	5MT	e-CVT
DRIVE			
Type	2WD/AWD (ALLGRIP SELECT)	2WD	2WD
SUSPENSION			
Front	MacPherson Strut		
Rear	Torsion Beam		
BRAKES			
Front	Disc		
Rear	Disc		
WHEEL TYRE			
Tyre Size	215/60 R17		

POWERTRAIN		Lxi	Vxi	Zxi / Zxi (O)	Zxi+ / Zxi+ (O)
1.5L K15C Petrol ISG	5-speed Manual Transmission (5MT)	✓	✓	✓	✓
	6-speed Automatic Transmission (6AT)	-	✓	✓	✓
	AllGrip Select (6AT)	-	-	-	✓
1.5L K15C Petrol	CNG (5MT)	✓	✓	Zxi only	-
1.5L M15D	Strong Hybrid (eCVT)	-	✓	✓	✓



Drawings shown are general specifications of the vehicle.

FEATURE SPECIFICATIONS					
VARIANTS		**Lxi**	**Vxi**	**Zxi / Zxi (O)**	**Zxi+ / Zxi+ (O)**
EXTERIOR					
Front Headlamps	Projector Headlamps	Halogen	Halogen	LED	LED
	Positioning Lamps	Halogen	Halogen	LED	LED
	LED Daytime Running Lamps - Dual Function	-	-	✓	✓
	Auto Headlamps with Follow-Me-Home Function	-	-	✓	✓
	LED Front Fog Lamps with Extended Lighting	-	-	✓	✓
Rear Tail Lamps	Dynamic Connected LED Tail Lamps	-	✓	✓	✓
	LED Rear Combination Lamp (with LED Indicator)	✓	✓	✓	✓
Wheel Spec	Alloy Wheels	-	-	✓ (Painted - Black)	✓ (Machined)
	Steel Wheels with Full Wheel Covers	✓	✓	-	-
Exterior Specifications	Front Grille Garnish	Chrome	Chrome	Satin Chrome	Satin Chrome
	Skid Plate (Front & Rear)	Silver	Silver	Silver - Petrol, S-CNG Grey - Strong Hybrid	Silver - Petrol, S-CNG Grey - Strong Hybrid
	All Door Glass Black Out Tape	-	-	✓	✓
	Front Door UV Cut Glasses	-	-	✓	✓
	Rear Door Dark Green Glass	-	-	✓	✓
	Body Coloured Outside Door Handles	-	✓	✓	✓
	Body Coloured ORVMs	-	✓	✓	✓
	ORVMs with Turn Indicators	✓	✓	✓	✓
	Roof Rails	-	✓	✓	✓
	Roof & Quarter Spoiler	✓	✓	✓	✓
	Rear Defogger	✓	✓	✓	✓
	Shark Fin Antenna	✓	✓	✓	✓
	Aero Vents & Aero Edges	✓	✓	✓	✓
	Front Variable Intermittent Wipers	-	-	✓	✓
	Rear Window Wiper & Washer	-	-	✓	✓
	LED High Mount Stop Lamp	✓	✓	✓	✓
INTERIOR					
Interior Theme	Dual Tone Interior (Black + Ivory) with Silver Accents	✓	✓	✓(Petrol, S-CNG)	✓(Petrol, S-CNG)
	All Black Interior with Champagne Gold Accents	-	-	Strong Hybrid	Strong Hybrid
	Door Trim & IP Garnish - Piano Black	-	✓	✓	✓
	Chrome Inside Door Handles	-	✓	✓	✓
Upholstery	Soft Touch IP with Premium Stitch (Black & Ivory-Petrol / Black-Strong Hybrid)	-	-	✓	✓
	Plush Leatherette Seats (Black & Ivory-Petrol / Black-Strong Hybrid)	-	-	-	✓
	Door Trim Armrest	Black Fabric	Black Fabric	Ivory PVC + Stitch-Petrol, S-CNG/Black PVC+ Stitch-Strong Hybrid	Ivory PVC+Stitch-Petrol, S-CNG/Black PVC+ Stitch-Strong Hybrid
	Leatherette Steering Wheel	-	-	-	✓
64 Color Custom Ambient Light	Instrument Panel	-	-	-	Backlit pattern
	Door	-	-	-	Spot
In-Cabin Illumination	Glove Box Light	-	✓	✓	✓
	Front Footwell Light (Driver & Co-Driver Side)	-	✓	✓	✓
	Courtesy Lamp	-	-	-	Strong Hybrid
	Trunk/Luggage Room Lamp	-	✓	✓	✓
	Rear Reading Lamps	✓	✓	✓	✓
Multi Information Instrument Cluster	10.66 cm (4.2") TFT	✓	✓	✓	-
	Fully Digital 26.03 cm (10.25") TFT	-	Strong Hybrid	✓	✓
COMFORT & CONVENIENCE					
Smart Powered Tailgate with Gesture Control		-	-	✓	✓
Panoramic Sunroof		-	-	(O)	(O)
Seating	Ventilated Seats (Driver + Co-Driver)	-	-	-	✓
	8- Way Driver Powered Seat	-	-	-	✓
	Seat Height Adjuster	-	✓	✓	✓
	60:40 Folding Rear Seats	✓	✓	✓	✓
	Adjustable Headrests - All Seats	✓	✓	✓	✓
	Front Seat Back Pocket	-	✓	✓	✓
Head Up Display		-	-	-	✓
Wireless Charger with Active Cooling		-	-	✓	✓
Auto Purify with PM 2.5 Display		-	-	-	✓
Charging	USB Charger Rear Type C+C (45 W + 45 W, Max 60 W)	-	✓	✓	✓
	USB Charger Front	✓(Type A)	✓(Type A)	✓(Type A)	✓(Type C-15W + Type C-45W)
	Accessory Socket (Center Console)	✓	✓	✓	✓
	Accessory Socket (Luggage Room)	-	✓	✓	✓
Push Start with Smart Key		-	✓	✓	✓
Auto AC		✓	✓	✓	✓
Cabin Air Filter		Pollen	PM 2.5	PM 2.5	PM 2.5
Rear AC Vents		✓	✓	✓	✓
Auto Folding ORVMs		-	-	-	✓
Electrically Foldable ORVMs		-	✓	✓	✓
Vanity Mirror (Driver + Co-Driver)		✓	✓	✓	✓

FEATURE SPECIFICATIONS					
VARIANTS		**Lxi**	**Vxi**	**Zxi / Zxi (O)**	**Zxi+ / Zxi+ (O)**
COMFORT & CONVENIENCE					
Vanity Mirror Lamp (Driver + Co-Driver)		-	-	-	✓
Front Sliding Armrest (with Storage)		✓	✓	✓	✓
Rear Center Armrest with Cup Holder		✓	✓	✓	✓
Sunglass Holder		-	-	✓	✓
Adjustable Tilt & Telescopic Power Steering		✓	✓	✓	✓
Cruise Control		-	✓	✓	✓(MT & Strong Hybrid)
Keyless Entry		✓	✓	✓	✓
Paddle Shifters		-	6AT	6AT	6AT
Gear Shift Indicator		Petrol MT	Petrol MT	Petrol MT	Petrol MT
Engine Drive Modes - Eco, Normal, Sport		-	Strong Hybrid	Strong Hybrid	Strong Hybrid
Terrain Modes - Snow, Sport, Lock, Auto		-	-	-	ALLGRIP
SAFETY & SECURITY					
Level 2 ADAS	Adaptive Cruise Control with all Speed Following & Stop Keeping & Curve Speed Reduction (ACC)	-	-	-	6AT
	Lane Keep Assist (LKA)	-	-	-	6AT
	Lane Departure Prevention (LDP)	-	-	-	6AT
	Lane Departure Warning (LDW)	-	-	-	6AT
	Vehicle Sway Warning	-	-	-	6AT
	Automatic Emergency Braking (AEB) - Car to Car	-	-	-	6AT
	High Beam Assist (HBA)	-	-	-	6AT
	Rear Cross Traffic Alert (RCTA)	-	-	-	6AT
	Forward Collision Warning (FCW)-Car to Car	-	-	-	6AT
	Blind Spot Monitor (BSM) with Lane Change Alert (LCA)	-	-	-	6AT
Emergency Stop Signal (ESS)		-	-	-	6AT
Electronic Stability Program (ESP®)		✓	✓	✓	✓
Traction Control System (TCS)		✓	✓	✓	✓
Engine Drag Control (EDC)		✓	✓	✓	✓
Hill Hold Assist		✓	✓	✓	✓
ABS with EBD and Brake Assist		✓	✓	✓	✓
Hill Descent Control		-	-	-	ALLGRIP
Electronic Parking Brake with Brake Hold		-	6AT	6AT	6AT
360° HD View Camera with 11 Views		-	-	-	✓
Front Parking Sensors with Auto 360° Camera Activation		-	-	-	✓
Rear Parking Sensors		✓	✓	✓	✓
Reverse Parking Camera		-	✓	✓	✓
Tyre-Pressure Monitoring System (TPMS)		-	✓	✓	✓
6 Airbags (Front, Side and Curtain)		✓	✓	✓	✓
Front Seat Belt Pre-Tensioner with Force Limiters		✓	✓	✓	✓
Front Seat Belt Height Adjuster		✓	✓	✓	✓
All Seats Belts (3-Point ELR) with Seat Belt Reminders (Lamp + Buzzer)		✓	✓	✓	✓
Seat Belt Reminder (All Occupants) - Lamp & Buzzer		✓	✓	✓	✓
ISOFIX Child Seat Anchorages		✓	✓	✓	✓
Engine Immobilizer		✓	✓	✓	✓
Day & Night Adjustable IRVM		Manual	Manual	Auto	Auto
Warning Lamp/ Reminder for (Low Fuel, Door Ajar, Headlamp On)		✓	✓	✓	✓
Speed Warning Buzzer		✓	✓	✓	✓
Tyre Repair Kit		✓	✓	✓	✓
Acoustic Vehicle Alert System (AVAS)		-	Strong Hybrid	Strong Hybrid	Strong Hybrid
INFOTAINMENT SYSTEM					
Infotainment & Sound	SmartPlay Pro 17.78cm (7") Touch Screen	✓	✓	✓	-
	SmartPlay Pro X 25.65cm (10.1") HD Touch Screen	-	-	-	✓
	Infinity Premium Sound 8-Speaker System with Centre Speaker & Subwoofer	-	-	-	✓
	Dolby Atmos Surround Sound Experience	-	-	-	✓
	In built 8-Channel Amplifier with 5.1 Surround Sound	-	-	-	✓
Connectivity	Alexa Auto Voice AI	-	-	-	✓
	Suzuki Connect with OTT Apps	-	-	-	✓
	Suzuki Navigation App with Traffic, Speed and Camera Alerts	-	-	-	✓
	Wireless Android Auto, Apple CarPlay	✓	✓	✓	✓
	OTA Updates	✓	✓	✓	✓
	Internet Connectivity	-	-	✓	✓
	Internet Tethering from Smartphone	-	-	-	✓
	Connected Services Powered by New Gen Suzuki Connect	-	✓	✓	✓
	Onboard Voice Assistant (Hi Suzuki with Barge In Feature)	✓	✓	✓	-
	Remote Control App	✓	✓	✓	✓
Door Speakers		2	2	2	4
Front Tweeters		-	2	2	2
AC Temperature Display & Control on Screen		✓	✓	✓	✓
Steering Mounted Controls		✓	✓	✓	✓
Rotary Volume Control Knob		✓	✓	✓	✓

FEATURE SPECIFICATIONS					
VARIANTS		**Lxi**	**Vxi**	**Zxi / Zxi (O)**	**Zxi+ / Zxi+ (O)**
NEXT GEN SUZUKI CONNECT-ADVANCED TELEMATICS SOLUTION SAFETY & SECURITY					
Emergency Alerts		-	✓	✓	✓
Breakdown Notification		-	✓	✓	✓
Stolen Vehicle Notification and Tracking		-	✓	✓	✓
Tow - Away and Tracking		-	✓	✓	✓
Geo-Fence		-	✓	✓	✓
Time Fence		-	✓	✓	✓
Valet Alert		-	✓	✓	✓
Emergency Calling		-	✓	✓	✓
TRIPS AND DRIVING BEHAVIOR					
Trip Summary		-	✓	✓	✓
Driving Behaviour (Score, Ranking, Comparison, Suggestions)		-	✓	✓	✓
Share Trip History		-	✓	✓	✓
Area Guidance		-	✓	✓	✓
Vehicle Location Sharing		-	✓	✓	✓
Send Coordinates & Trip to Car		-	-	-	✓
ALERTS AND NOTIFICATIONS					
Overspeeding		-	✓	✓	✓
Seatbelt		-	✓	✓	✓
AC Idling		-	✓	✓	✓
Trip (Start &End)		-	✓	✓	✓
Low Fuel		-	✓	✓	✓
Low Range		-	✓	✓	✓
Dashboard View		-	✓	✓	✓
Parking Brake Status		-	6AT	6AT	6AT
PM2.5 Monitoring		-	-	-	✓
Vehicle Servicing-Related		-	✓	✓	✓
REMOTE FUNCTIONS					
Door Lock/Cancel Lock		-	-	✓	✓
Hazard Light On/Off		-	-	✓	✓
Headlight Off		-	-	✓	✓
AC On/Off		-	6AT/eCVT	6AT/eCVT	6AT/eCVT
Schedule AC		-	6AT/eCVT	6AT/eCVT	6AT/eCVT
Alarm		-	✓	✓	✓
Immobilizer Request		-	✓	✓	✓
Vehicle Health		-	✓	✓	✓
Smartwatch Connectivity		-	✓	✓	✓
Alexa Skill Connectivity		-	✓	✓	✓
COLOUR VARIANTS					
Eternal Blue with Bluish Black Roof (Dual Tone)		-	-	✓	✓
Sizzling Red with Bluish Black Roof (Dual Tone)		-	-	✓	✓
Splendid Silver with Bluish Black Roof (Dual Tone)		-	-	✓	✓
Eternal Blue		-	✓	-	-
Sizzling Red		-	✓	-	-
Mystic Green		-	-	✓	✓
Bluish Black		-	-	✓	✓
Splendid Silver		✓	✓	✓	✓
Magma Grey		✓	✓	✓	✓
Pearl Arctic White		✓	✓	✓	✓

Drive with a mileage of:

21.18* km/l Petrol (MT)	21.06* km/l Petrol (AT)	27.02* km/kg CNG	19.07* km/l Petrol (ALLGRIP AT)	28.65* km/l Strong Hybrid Petrol e-CVT

3 Years 100 000 km WARRANTY** EXTENDABLE UPTO 6 YEARS

ELECTRONIC STABILITY PROGRAM

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