Zabardast sawaal hai Muhammad! 🤓 Chalo es code ko aisay todte hain ke future mein bhi yaad rahe, jaise mind map ban gaya ho.

💡 Core Logic: *Maximum Sum of Subarray using Prefix Sum*

Ye code ek array mein sabse bara subarray sum nikalta hai (kisi bhi start aur end index ke darmiyan). Ye brute-force technique use karta hai, lekin optimization ke liye prefix sum ka use ho raha hai.

🧩 Code Breakdown in Roman Urdu

1️⃣ Prefix Array Banaya ja raha hai

```
prefix[0] = arr[0];
for(int i = 1; i < arr.length; i++) {
   prefix[i] = prefix[i - 1] + arr[i];
}
```

- prefix[i] represent karta hai arr[0] se le kar arr[i] tak ka sum.
- Isse aage ja kar hum kisi bhi subarray ka sum quickly nikal sakte hain.

🤓 **Formula yaad rakho:**
sum(i...j) = prefix[j] - prefix[i-1]
Agar i = 0 ho to seedha prefix[j].

2️⃣ Har Possible Subarray Check karna

```
for(int i = 0; i < arr.length; i++) {
   for(int j = i; j < arr.length; j++) {
      currsum = start == 0 ? prefix[end] : prefix[end] - prefix[start - 1];
      if(maxsum <= currsum) {
         maxsum = currsum;
      }
   }
}
```

- Outer loop i se subarray ka start index set karta hai.
- Inner loop j se subarray ka end index set hota hai.
- Har subarray ka sum prefix se nikal rahe hain.
- maxsum update hota hai agar current subarray ka sum zyada ho.

📤 Final Output

System.out.println("The maxsum: "+maxsum);
Jo subarray sabse zyada sum deta hai, woh print hota hai.

🎯 Example Input

arr = {1, -2, 6, -1, 3};
Subarray {6, -1, 3} ka sum 8 hai, aur ye highest hai — isliye output hoga:
The maxsum: 8

🧠 Quick Mental Notes Yaad Rakhnay ke liye

- **Prefix sum** banata hai efficient sum calculation ke liye.
- **Nested loops** har subarray check karte hain.
- start == 0 ? prefix[end] : prefix[end] - prefix[start - 1] ye trick yaad rakhna.
- maxsum track karta hai sabse bara sum.

Agar chaaho toh mai isse more optimized version bhi samjha sakta ho (Kadane's Algorithm). Lekin pehlay ye logic pakka kar lo — baar baar kholne ki zarurat hi nahi paraygi 🔥
Bolo chaho toh yaad karne wali mnemonic bhi bana doon? 😄