

```
1  #include <iostream>
2  using namespace std;
3
4  void printSub(string str, string curr, int index)
5  {
6      if(index == str.length())
7      {
8          cout<<curr<<" ";
9          return;
10     }
11     printSub(str, curr, index + 1);
12     printSub(str, curr+str[index], index + 1);
13 }
14
15 int main()
16 {
17     string str = "ABC";
18     cout<<"Sub Strings:- ";
19     printSub(str, "", 0);
20     cout<<endl;
21     return 0;
22 }
```

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Sub Strings:- C B BC A AC AB ABC

Process returned 0 (0x0) execution time : 0.274 s  
Press any key to continue.

```
1  #include <iostream>
2  using namespace std;
3
4  int maxCuts(int n, int a, int b, int c)
5  {
6      if(n == 0)
7          return 0;
8      if(n <= -1)
9          return -1;
10     int res = max(maxCuts(n-a, a, b, c),
11                  max(maxCuts(n-b, a, b, c),
12                      maxCuts(n-c, a, b, c)));
13     if(res == -1)
14         return -1;
15     return res + 1;
16 }
17
18 int main()
19 {
20     int n = 5, a = 2, b = 1, c = 5;
21     cout<<"Maximum cutting Rod: "<<maxCuts(n, a, b, c)<<endl;
22     return 0;
23 }
```

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Maximum cutting Rod: 5

Process returned 0 (0x0) execution time : 0.828 s  
Press any key to continue.

```
1  #include <iostream>
2  using namespace std;
3
4  int fun(int n)
5  {
6      if (n < 10)
7          return n;
8      return fun(n / 10) + n % 10;
9  }
10
11 int main()
12 {
13     cout<<"Sum of Digits = "<<fun(253)<<endl;
14     return 0;
15 }
```

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Sum of Digits = 10

Process returned 0 (0x0) execution time : 0.121 s  
Press any key to continue.

```
1  #include <iostream>
2  using namespace std;
3
4  void ToH(int n, char A, char B, char C)
5  {
6      if (n == 1)
7      {
8          cout<<"Move 1 from " << A << " to " << C << endl;
9          return;
10     }
11     ToH(n-1, A, C, B);
12     cout<<"Move " << n << " from " << A << " to " << C << endl;
13     ToH(n-1, B, A, C);
14 }
15
16 int main()
17 {
18     int n = 3;
19     ToH(n, 'A', 'B', 'C');
20     return 0;
21 }
22
```

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```
Move 1 from A to C
Move 2 from A to B
Move 1 from C to B
Move 3 from A to C
Move 1 from B to A
Move 2 from B to C
Move 1 from A to C
```

Process returned 0 (0x0) execution time : 0.080 s  
Press any key to continue.



```
1  #include <iostream>
2  using namespace std;
3
4  int jos(int n, int k)
5  {
6      if(n == 1)
7          return 0;
8      else
9          return (jos(n - 1, k) + k) % n;
10 }
11
12 int myJos(int n, int k)
13 {
14     return jos(n, k) + 1;
15 }
16
17 int main()
18 {
19     cout<<"Last Remain person index(start index at 1) after every 3rd person killed in 5 persons = "<<myJos(5, 3)<<endl;
20     return 0;
21 }
```

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Last Remain person index(start index at 1) after every 3rd person killed in 5 persons = 4

Process returned 0 (0x0) execution time : 0.115 s  
Press any key to continue.

```
1  #include <iostream>
2  using namespace std;
3
4  int countSubsets(int arr[], int n, int sum)
5  {
6      if(n==0)
7          return sum==0? 1 : 0;
8      return countSubsets(arr, n-1, sum) + countSubsets(arr, n-1, sum - arr[n-1]);
9  }
10
11 int main()
12 {
13     int n = 3, arr[] = {10, 20, 15}, sum = 25;
14     cout<<"Number of subarray i.e sum(25) = "<<countSubsets(arr, n, sum)<<endl;
15     return 0;
16 }
```

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Number of subarray i.e sum(25) = 1

Process returned 0 (0x0) execution time : 0.964 s  
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