

### Question 1

Give the dependence graph for the following loop.

```

    for (i=0; i<n; i++) {
S1:    B(i) = A(i)
S2:    A(i) = A(i) + B(i+1)
S3:    C(i) = 2 * B(i)
    }
    
```

Give the distance and direction vectors for the loop-carried dependences in the last question.

Source	Sink	Type	Distance Vectors	Direction Vectors

Source, sink: Specify the references in the form S3:C(I) or S3: B(i) ...

Type: true, anti, output

Vectors: n-Tuples where n is the depth of the loop nest

Give the dependence graph for the following loop.

```

        for (i=0; i<n; i++) {
            for (j=1; j<m; j++) {
S1:        A(i)=B(i, j)
S2:        B(i, j)= B(i-1, 2*j)
            }
        }

```

S1

S2

Give the distance and direction vectors for the loop-carried dependences in the last question.

Source	Sink	Type	Distance Vectors	Direction Vectors

### Question 2

Give the dependence graph for the following loop.

```
for (i=0;i<n;i++)
  for (j=0;j<m;j++) {
S1:    B(i-1,j)=C(i,j-2)
S2:    C(i,j)=2*B(i,j+1)
  }
```

Source	Sink	Type	Distance Vectors	Direction Vectors