

1

```
for (i = 10; i > 2; i--) {  
    #pragma HLS UNROLL  
    a[i] = b[i] + a[i-1];  
}
```

2

```
int i = 0;  
while (i < 10) {  
    #pragma HLS UNROLL  
    a[i] = b[i] + 2;  
    i++;  
}
```

3

```
int a = 0;  
int b = 10;  
while (a < b) {  
    #pragma HLS UNROLL  
    a = a + 2;  
    b = b + 1;  
}
```

- 1- The first code can be synthesised into a combinational circuit as it has a static *for*-loop bound that can be determined at compile time
- 2- The second code can also be synthesised into a combinational circuit as it has a static *for*-loop bound that can be determined at compile time
- 3- The third code cannot be synthesised into a combinational circuit as the loop bound determined as run-time based on the value assigned to a and b variables in each iteration.