Graph Coverage: Tutorial

```
Consider the graph given below:
N = { 1, 2, 3, 4, 5, 6}
N0 = { 1 }
Nf = { 6 }
E = {(1, 2),(2, 3),(2,6),(3, 4),(3, 5),(4, 5),(5, 2) }
```

a) Draw the graph.
b) List a minimal test set that satisfies 100% Node Coverage.
c) List a minimal test set that satisfies 100% Edge Coverage.
d) List a minimal test set that satisfies 100% Edge-Pair Coverage.

Scenario 1

```
if (c1) {
        while (c2) {
            if (c3) { s1;
                if (c5) s5;
                else break;

            }
            Else
            {
                if (c4) { s9}
                else  break;
            }
        } // End of while
    } // End of if
```

Scenario 2

```
int foo (int a, int b, int c, int d, float e) {
float e;

if (a == 0) {
  return 0;
}

int x = 5;

if ((a==b) OR ((c == d) AND (a%2==0) )) {
  x=1;
}

e = 1/x;
return e;
}
```

Scenario 3

```
public double calculate(int amount)
{
double rushCharge = 0;
if (nextday.equals("yes") )
     rushCharge = 14.50;
double tax = amount * .0725;
if (amount >= 1000)
     shipcharge = amount * .06 + rushCharge;
else if (amount >= 200)
     shipcharge = amount * .08 + rushCharge;
 else if (amount >= 100)
     shipcharge = 13.25 + rushCharge;
else if (amount >= 50)
     shipcharge = 9.95 + rushCharge;
 else if (amount >= 25)
     shipcharge = 7.25 + rushCharge;
 else
     shipcharge = 5.25 + rushCharge;

total = amount + tax + shipcharge;
return total;
} //end calculate
```

Scenario 4

```
input(Y)
if (Y<=0) then
     Y := −Y
end_if
if (Y>0) then
     Y := Y-1
end_if
Print Y;
```