

Module: Software testing and quality analysis**Assignment 2:** white box testing (DFG)**Exercise 01 :** Look at the following program:

```

Begin
  Read(x); Read(y);
  While x <> y Do
    If x > y Then
      x := x - y;
    Else
      y := y - x;
    End if;
  End while;
  pgcd := x;
End

```

1. Construct the control flow graph for this program.
2. Determine the number of independent paths in graph.
3. Identify these independent paths.
4. Give test cases for the criterion all independent paths.

Exercise 02: Consider the following program

```

BEGIN
  read (X, Y) ;
  W = abs (Y) ;
  Z = 1 ;
  WHILE (W <> 0) DO
    Z = Z * X ;
    W = W - 1 ;
  END
  IF (Y < 0) THEN
    Z = 1 / Z ;
  END
  print (Z) ;
END

```

1. Draw the control flow graph associated with the previous program.
2. Annotate graph with information on variable manipulation: "def", C-use and P-use ?
3. Define for each variable: Def, P-use, C- Use, DU pairs and DU paths.