/\* STEP 1: Load Sample Data \*/

data credit\_data;

input age income default;

datalines;

25 20000 0

30 25000 0

35 30000 1

40 40000 0

45 45000 1

50 50000 0

55 60000 1

60 65000 0

65 70000 1

70 75000 0

;

run;

/\* STEP 2: Create Age Bins (Manual Binning Example) \*/

data credit\_data\_binned;

set credit\_data;

if age < 30 then age\_bin = 'Under 30';

else if 30 <= age < 45 then age\_bin = '30-44';

else if 45 <= age < 60 then age\_bin = '45-59';

else age\_bin = '60+';

run;

/\* STEP 3: Summarize Good and Bad (0 = Good, 1 = Bad) \*/

proc sql;

create table bin\_summary as

select

age\_bin,

sum(default = 0) as Good,

sum(default = 1) as Bad

from credit\_data\_binned

group by age\_bin;

quit;

/\* STEP 4: Add Totals and Calculate WOE \*/

proc sql;

select sum(Good) into :Total\_Good from bin\_summary;

select sum(Bad) into :Total\_Bad from bin\_summary;

quit;

data woe\_table;

set bin\_summary;

pct\_good = Good / &Total\_Good;

pct\_bad = Bad / &Total\_Bad;

if pct\_bad > 0 and pct\_good > 0 then WOE = log(pct\_good / pct\_bad);

else WOE = .;

IV = (pct\_good - pct\_bad) \* WOE;

run;

/\* STEP 5: Display Final Table with WOE & IV \*/

proc print data=woe\_table;

title "WOE & IV by Age Bin";

run;