\*\*\*\*\*\*\*\*\*\*\*\*\*\* PLAN\_A \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

**DATA** PLAN\_A;

/\* time in months to clear the loan \*/

time\_period=**12**\***30**;

label time\_period="time in months to clear the loan";

/\*Interest rate per month \*/

interest\_rate=**0.06**/**12**;

label ibnterest\_rate="Interest rate per month";

/\* principal loan amount taken for the personal use\*/

ploan\_amount=**480000**;

label ploan\_amount="loan amount taken";

payment\_amount=(((ploan\_amount)\*(interest\_rate\*(**1**+interest\_rate)\*\*time\_period))/((**1**+interest\_rate)\*\*time\_period -**1**));

format ploan\_amount DOLLAR10.2;

format payment\_amount DOLLAR10.2;

**RUN**;

\*\*\*\*\*\*\*\* Amortization Schedule \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

**DATA** CALCULATE\_PLAN\_A(drop=ploan\_amount time\_period interest\_rate);

set plan\_a;

do time=**1** to time\_period;

/\* ploan\_amount is the principal loan amount taken for personal use\*/

/\* payment\_amount is the monthly installement to be paid to clear the loan with interest in

the given time period(time\_period)\*/

/\* beginning balance is the priciple balance due before monthly payment\_amount \*/

beginning\_balance=ploan\_amount;

label beginning\_balance="beginning balance is the balance due before monthly payment\_amount ";

/\* interest amount is the interest to be paid every month on the remaining principle amount\*/

interest\_amount=ploan\_amount\*interest\_rate;

label

interest\_amount="interest amount is the interest to be paid every month";

/\* principal\_amount\_paid is the principal amount paid apart from the interest\_amount monthly \*/

/\* (principal\_amoount\_paid + interest\_amount) gives the monthly installment(payment\_amount)\*/

principal\_amount\_paid=payment\_amount - interest\_amount;

label principal\_amount\_paid="principal\_amount\_paid is the principal

amount paid apart from the interest\_amount monthly";

/\* Updating the plaon\_amount remaining after the principal\_amount\_paid

which is part of payment\_amount\*/

if (ploan\_amount - principal\_amount\_paid) > **0** then

;

ploan\_amount=abs(ploan\_amount) - principal\_amount\_paid;

/\* end\_balanace is the remaining principle loan\_amount that is due after the

monthly installment(payment\_amount)\*/

end\_balance=ploan\_amount;

output;

format ploan\_amount DOLLAR10.2;

format principal\_amount\_paid DOLLAR10.2;

format end\_balance DOLLAR10.2;

format interest\_amount DOLLAR10.2;

format payment\_amount DOLLAR10.2;

format beginning\_balance DOLLAR10.2;

end;

**RUN**;

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* PLAN\_B \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

**DATA** PLAN\_B;

/\* time in months to clear the loan \*/

time\_period=**12**\***30**;

label time\_period="time in months to clear the loan";

/\*Interest rate per month \*/

interest\_rate=**0.055**/**12**;

label ibnterest\_rate="Interest rate per month";

/\* loan amount taken \*/

loan\_amount=**480000**;

label loan\_amount="loan amount taken";

/\* point\_interest is one time interest at start to be

paid from the taken loan amount to reduce the monthly interest(interest\_rate)\*/

point\_interest=**0.04**;

/\*\* Adding the point\_interest to loan\_amount \*/

/\*\* ploan\_amount is the final loan amount to be paid after the time period \*\*/

ploan\_amount=loan\_amount\*(**1**+point\_interest);

\*calc\_pmt = finance('pmt', interest\_rate, time\_period, ploan\_amount,0);

payment\_amount=(((ploan\_amount)\*(interest\_rate\*(**1**+interest\_rate)\*\*time\_period))/((**1**+interest\_rate)\*\*time\_period -**1**));

format ploan\_amount DOLLAR10.2;

format payment\_amount DOLLAR10.2;

**RUN**;

\*\*\*\*\*\*\*\* Amortization Schedule \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

**DATA** CALCULATE\_PLAN\_B(drop=ploan\_amount time\_period interest\_rate

point\_interest loan\_amount);

set plan\_b;

do time=**1** to time\_period;

/\* ploan\_amount is the principal loan amount taken for personal use\*/

/\* payment\_amount is the monthly installement to be paid to clear the loan with interest in

the given time period(time\_period)\*/

/\* beginning balance is the priciple balance due before monthly payment\_amount \*/

beginning\_balance=ploan\_amount;

label beginning\_balance="beginning balance is the balance due before monthly payment\_amount ";

/\* interest amount is the interest to be paid every month on the remaining principle amount\*/

interest\_amount=ploan\_amount \* (interest\_rate);

label

interest\_amount="interest amount is the interest to be paid every month";

/\* principal\_amount\_paid is the principal amount paid apart from the interest\_amount monthly \*/

/\* (principal\_amoount\_paid + interest\_amount) gives the monthly installment(payment\_amount)\*/

principal\_amount\_paid=payment\_amount - interest\_amount;

/\* end\_balanace is the remaining priciple loan amount that is due after the

monthly installment(payment\_amount)\*/

end\_balance=ploan\_amount - principal\_amount\_paid;

/\* Updating the plaon\_amount remaining after the principal\_amount\_paid

which is part of payment\_amount\*/

if (ploan\_amount - principal\_amount\_paid) > **0** then

;

ploan\_amount=abs(ploan\_amount) - principal\_amount\_paid;

output;

format ploan\_amount DOLLAR10.2;

format principal\_amount\_paid DOLLAR10.2;

format end\_balance DOLLAR10.2;

format interest\_amount DOLLAR10.2;

format payment\_amount DOLLAR10.2;

format beginning\_balance DOLLAR10.2;

end;

**RUN**;

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Extra \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* PLAN C \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

\*\*\*\*\*\*\*\* PLAN C Amortization Schedule \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

**DATA** CALCULATE\_PLAN\_A(drop=ploan\_amount time\_period interest\_rate);

set plan\_a;

do time=**1** to time\_period;

/\* ploan\_amount is the loan amount taken for personal use\*/

/\* payment\_amount is the monthly installement to be paid to clear the loan with interest in

the given time period(time\_period)\*/

/\* beginning balance is the priciple balance due before monthly payment\_amount \*/

beginning\_balance=ploan\_amount;

label beginning\_balance="beginning balance is the balance due before monthly payment\_amount ";

/\* interest amount is the interest to be paid every month on the remaining principle amount\*/

interest\_amount=ploan\_amount\*interest\_rate;

label

interest\_amount="interest amount is the interest to be paid every month";

/\* principal\_amount\_paid is the principal amount paid apart from the interest\_amount monthly \*/

/\* (principal\_amoount\_paid + interest\_amount) gives the monthly installment(payment\_amount)\*/

\*\*\*\* adding additional 150 dollars to the principle \*\*\*\*;

if(beginning\_balance < payment\_amount) then

principal\_amount\_paid=beginning\_balance - interest\_amount;

else

principal\_amount\_paid=(payment\_amount - interest\_amount) + **150**;

label principal\_amount\_paid="principal\_amount\_paid is the principal

amount paid apart from the interest\_amount monthly";

/\* Updating the plaon\_amount remaining after the principal\_amount\_paid

which is part of payment\_amount\*/

if (ploan\_amount - principal\_amount\_paid) > **0** then

;

ploan\_amount=abs(ploan\_amount) - principal\_amount\_paid;

/\* end\_balanace is the remaining principle loan\_amount that is due after the

monthly installment(payment\_amount)\*/

if(beginning\_balance < payment\_amount) then

end\_balance=**0**;

else

end\_balance=ploan\_amount;

output;

if (end\_balance=**0**) then

leave;

format ploan\_amount **10.2**;

format principal\_amount\_paid **10.2**;

format end\_balance **10.2**;

format interest\_amount **10.2**;

format payment\_amount **10.2**;

format beginning\_balance **10.2**;

end;

**RUN**;

\*\*\*\*\*\*\*\*\*\*\*\* It takes 316 months with plan c \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* PLAN D \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

\*\*\*\*\*\*\*\* PLAN D Amortization Schedule \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

**DATA** CALCULATE\_PLAN\_B(drop=ploan\_amount time\_period interest\_rate

point\_interest loan\_amount);

set plan\_b;

do time=**1** to time\_period;

/\* ploan\_amount is the loan amount taken for personal use\*/

/\* payment\_amount is the monthly installement to be paid to clear the loan with interest in

the given time period(time\_period)\*/

/\* beginning balance is the priciple balance due before monthly payment\_amount \*/

beginning\_balance=ploan\_amount;

label beginning\_balance="beginning balance is the balance due before monthly payment\_amount";

/\* interest amount is the interest to be paid every month on the remaining principle amount\*/

interest\_amount=ploan\_amount \* (interest\_rate);

label

interest\_amount="interest amount is the interest to be paid every month";

/\* principal\_amount\_paid is the principal amount paid apart from the interest\_amount monthly \*/

/\* (principal\_amoount\_paid + interest\_amount) gives the monthly installment(payment\_amount)\*/

\*\*\*\* adding additional 150 dollars to the principle \*\*\*\*;

if(beginning\_balance < payment\_amount) then

principal\_amount\_paid=beginning\_balance - interest\_amount;

else

principal\_amount\_paid=(payment\_amount - interest\_amount) + **150**;

/\* Updating the plaon\_amount remaining after the principal\_amount\_paid

which is part of payment\_amount\*/

if (ploan\_amount - principal\_amount\_paid) > **0** then

;

ploan\_amount=abs(ploan\_amount) - principal\_amount\_paid;

/\* end\_balanace is the remaining principle loan\_amount that is due after the monthly installment(payment\_amount)\*/

if(beginning\_balance < payment\_amount) then

end\_balance=**0**;

else

end\_balance=ploan\_amount;

output;

if (end\_balance=**0**) then

leave;

format ploan\_amount DOLLAR10.2;

format principal\_amount\_paid DOLLAR10.2;

format end\_balance DOLLAR10.2;

format interest\_amount DOLLAR10.2;

format payment\_amount DOLLAR10.2;

format beginning\_balance DOLLAR10.2;

end;

**RUN**;

\*\*\*\*\*\*\*\*\*\*\*\* It takes 319 months with plan d \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;