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PROBLEM DEFINITION

This Program calculates the Net Income from applicants needed to be approved for housing allocation in Providence Gardens. To this it must determine the applicant’s Gross Salary minus its total deduction which will give the applicant’s net income. Then if it meets the qualifying salary approves the applicants.

THE DEFINING DIAGRAM

|  |  |  |
| --- | --- | --- |
| INPUT | PROCESSING | OUTPUT |
| * Applicant\_Name * Applicant\_Gross\_Salary * Applicant\_Salary\_Deductions * Applicant\_Monthly\_Expenses * Applicant\_Monthly\_Loan\_Repayments | Get Applicant\_Name  WHILE name <> ‘xxxx’ DO  Begin  Get Applicant\_Gross\_Salary  Get Applicant\_ Salary\_Deductions  Get Applicant\_Monthly\_Expenses  Get Applicant\_Monthly\_Loan\_Repayments  Net Income =Gross salary-Salary Deductions  If Net\_Income > qualifying salary then qualified = “True”  Else  Qualified =” False”  If (qualified = “True”) then  Begin  Balance = Net \_Income -  Monthly\_Expenses- monthly loan repayments  If Balance >(0.5\* Net\_Income) then  Approved= True  Else  Approved = “False”  End  Display “Applicant\_Name”, Applicant\_Name  Display “Balance $”, Balance  Get name  Endwhile | * Name * Qualify * Balance * Approval |

ALGORITHM OR PSEUDOCODE

**Header**: Applicants in Providence Gardens

**Declaration:**

**Applicant Name-** used to store the applicant first name as well as last name of applicants in Providence Gardens. The data type used is string.

**Applicant Gross Salary**-used the store the applicant’s salary before any deductions and it is a real variable

**Net Income**- used to store the applicant’s salary after deductions have been taken and it is a real variable

**Balance**- used to store the applicant’s balance after subtracting monthly expenses and monthly loan repayments from net income and it is a real variable

**Qualifying Salary**-stores the amount needed to obtain a housing community, this variable is also a real as well as a constant

**Qualify**- stores if the applicant is qualified by meeting the qualifying salary for a housing community and it is a Boolean variable.

**Approved**- used to store if the applicants are approved. Approval is granted if the applicant’s balance is equal o exceeds half the net income. This is also a Boolean variable.

**Monthly Loan Payments**-stores bank, credit card and credit union monthly payments and is a real variable

**Monthly Expenses**- used to store applicant’s monthly expenses and it us real variable.

**Body:**

**START**

Applicant\_Name = “ “

Applicant\_Gross\_Salary =0

Applicant\_Salary\_Deductions=0

Applicant\_Monthly\_Expenses=0

Applicant\_Monthly\_Loan\_Repayments=0

Balance =0

Qualifying Salary = $7500.00

Approved =”False”

INPUT

Get Applicant\_Name

Get Applicant\_Gross\_Salary

Get Applicant\_Salary\_Deductions

Get Applicant\_Monthly\_Expenses

Get Applicant\_Total\_Monthly\_Loan

Net Income =Gross salary-Salary Deductions

If Net\_Income > qualifying salary then qualified=”True”

Else

Qualified =” False” If (qualified = True) then

Begin

Balance= Net \_Income - Monthly\_Expenses - Monthly\_ Loan\_ Repayments If Balance > (0.2\* Net\_Income) then approved = True

Else

Approved = false

End

**STOP.**

FLOW CHART

Is name <> “xxxx”?

Get Applicant Name

YES

Get Applicant Gross Salary, Deductions, Total Monthly Loans, Total Expenses

Applicant Net Income= Gross Salary- Total Salary Deductions

Is Net Income >= $12500?

Is Balance >= (.5 of Net Income)?

Balance = Net Income- Total Expenses- Total Loan Repayments

YES YES

NO

NO

Display “Approved”

Display “Not Approved”

NO

TEST DATA

Sharon George $10500.00 $2155.00 $41.33 $2438.00

Petal John $2750.00 $1967.50 $94.17 $3065.00

Darren Simpson $12700.00 $3485.00 $466.53 $1979

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Applicant Name | Gross Salary | Salary Deductions | Monthly Expenses | Monthly Loan Repayments | Net Income | Qualifying Salary | Qualified | Balance | Approvance |
| Sharon George | $10500.00 | $2155.00 | $2438.00 | $41.33 | $7765.00 | $7500.00 | Yes | $5285.67 | Yes |
|  |  |  |  |  |  |  |  |  |  |
| Darren Simpson | $12700.00 | $1530.00 | $1979.00 | $466.53 | $9215.00 | $7500.00 | Yes | $6749.47 | Yes |
|  |  |  |  |  |  |  |  |  |  |
| Petal John | $7250.00 | $1967.50 | $3065.00 | $94.17 | $5282.50 | $7500.00 | No | $2123.23 | No |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

TRACE TABLE