УО «Белорусский государственный университет информатики и радиоэлектроники»

Кафедра ПОИТ

Отчет по лабораторной работе №1.1

по предмету

Основы алгоритмизации и программирования

Вариант 3

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Задание:

Составьте программу для определения подходящего возраста кандидатуры для вступления в брак, используя следующее соображение: возраст девушки равен половине возраста мужчины+7, возраст мужчины определяется соответственно как удвоенный возраст девушки-14. В начале выполнения программы на экране должен появиться вопрос МУЖЧИНА или ЖЕНЩИНА? ВВЕДИТЕ М, если Вы мужчина, или Ж, если женщина и свой возраст. В зависимости от ответа выводятся соответствующие рекомендации.

Код программы на **Delphi**:

Program Lab1;

Uses

System.SysUtils;

Const

MINYEAR = 18; //minimum age

MAXYEAR = 120; //maximum age

Flag = true;

Var

Gender: Char = '0';

Year: Integer = 0;

IsCorrect: Boolean = True;

Begin

//condition

Writeln(' The program will ask the user for their gender and age.');

Writeln('The age of your significant other will be calculated using the

formulas!!!');

Writeln('');

Writeln('Age restrictions: from ', MINYEAR, ' to ', MAXYEAR, '.');

While Flag Do

Begin

IsCorrect := True;

//entering gender

Writeln('');

Writeln('');

Writeln('Select your gender. If you are a man, then (M), if you are a

woman, then (W).');

Readln(Gender);

//gender verification

If (Gender <> 'M') And (Gender <> 'm') And (Gender <> 'W') And (Gender <>

'w') Then

Begin

Writeln('Wrong gender selected.');

IsCorrect := False;

End;

If IsCorrect = True Then

Begin

//entering age

Writeln('Write your age in years.');

Readln(Year);

End;

//age verification

If (IsCorrect = True) And (Year > MaxYear) Then

Begin

IsCorrect := False;

Writeln('The age is great. The permissible maximum age for the program

is 120 years.');

End;

If (IsCorrect = True) And (Year < MINYEAR) Then

Begin

IsCorrect := False;

Writeln('Age is small. The acceptable minimum age for the program is

18 years.');

End;

//conclusion

If (IsCorrect = True) And ((Gender = 'M') Or (Gender = 'm')) Then

Begin

//checking your significant other's age

If ((Year Div 2) + 7 < MinYear) Then

Begin

Write('The age of your significant other is below the acceptable

norm (18). ', FormatFloat('#', (Year / 2) + 7));

End

//main conclusion

Else

Begin

Write('You are a man and you ', Year, ', and to your soulmate ',

FormatFloat('#', (Year / 2) + 7), '.');

End;

End

//if it's a girl

Else

If (Gender = 'W') Or (Gender = 'w') Then

Begin

//checking your significant other's age

If ((Year \* 2) - 14 > MaxYear) Then

Begin

Write('The age of your significant other has exceeded the

maximum norm (120). ', (Year \* 2) - 14);

End

//main conclusion

Else

Begin

Write('You are a woman and you ', Year, ', and to your

soulmate ', (Year \* 2) - 14, '.');

End;

End;

End;

Readln;

End.

Код программы на **C++**:

#include <iostream>

int main()

{

const int MINYEAR = 18; // minimum age

const int MAXYEAR = 120; // maximum age

char gender = '\0';

int year = 0;

bool IsCorrect = true;

// condition

std::cout << " The program will ask the user for their gender and age.\n"

<< "The age of your significant other will be calculated using the

formulas!!!\n\n"

<< "Age restrictions: from " << MINYEAR << " to " << MAXYEAR <<

".\n";

while (true)

{

IsCorrect = true;

// entering gender

std::cout << "\n\nSelect your gender. If you are a man, then (M), if you

are a woman, then(W).\n";

std::cin >> gender;

// gender verification

if (gender != 'M' && gender != 'w' && gender != 'W' && gender != 'm')

{

std::cout << "Wrong gender selected.";

IsCorrect = false;

}

if (IsCorrect) {

// entering age

std::cout << "Write your age in years.\n";

std::cin >> year;

}

// age verification

if (IsCorrect && year > MAXYEAR)

{

IsCorrect = false;

std::cout << "The age is great. The permissible maximum age for the

program is 120 years.";

}

if (IsCorrect && year < MINYEAR)

{

IsCorrect = false;

std::cout << "Age is small. The acceptable minimum age for the program

is 18 years.";

}

// conclusion

if (IsCorrect && (gender == 'M' || gender == 'm'))

{

// checking your significant other's age

if ((year / 2) + 7 < MINYEAR)

{

std::cout << "The age of your significant other is below the

acceptable norm(18). " << (year / 2) + 7;

}

// main conclusion

else

{

std::cout << "You are a man and you " << year << ", and to your

soulmate " << (year / 2) + 7 << ".";

}

}

// if it's a girl

else if (IsCorrect)

{

// checking your significant other's age

if ((year \* 2) - 14 > MAXYEAR)

{

std::cout << "The age of your significant other has exceeded the

maximum norm(120). " << (year \* 2) - 14;

}

// main conclusion

else

{

std::cout << "You are a woman and you " << year << ", and to your

soulmate " << (year \* 2) - 14 << ".";

}

}

}

return 0;

}

Код программы на **Java**:

import java.util.Scanner;  
  
public class lab\_1  
{  
public static void main(String[] args)  
 {  
 Scanner in = new Scanner(System.*in*);  
  
 final int MAXYEAR = 120; // minimum age  
 final int MINYEAR = 18; // maximum age  
 boolean IsCorrect = true;  
 int year = MINYEAR;  
 char gender = '\0';  
  
 // condition  
 System.*out*.println(" The program will ask the user for their gender and

age.\n" +  
 "The age of your significant other will be calculated

using the formulas!!!\n\n" +  
 "Age restrictions: from " + MINYEAR + " to " + MAXYEAR

+ ".\n");  
  
 while (true) {  
 // entering gender  
 System.*out*.println("\nSelect your gender. If you are a man, then (M),

if you are a woman, then (W).");  
 gender = in.next().charAt(0);  
 // gender verification  
 if (gender != 'M' && gender != 'm' && gender != 'W' && gender != 'w')

{  
 System.*out*.println("Wrong gender selected.");  
 IsCorrect = false;  
 }  
  
 if (IsCorrect)

{  
 // entering age  
 System.*out*.println("Write your age in years.");  
 year = in.nextInt();  
 }  
  
 // age verification  
 if (IsCorrect && year > MAXYEAR)

{  
 IsCorrect = false;  
 System.*out*.println("The age is great. The permissible maximum age

for the program is 120 years.");  
 }  
  
 if (IsCorrect && year < MINYEAR)

{  
 IsCorrect = false;  
 System.*out*.println("Age is small. The acceptable minimum age for

the program is 18 years.");  
 }  
  
 // conclusion  
 if (IsCorrect && gender == 'M' || gender == 'm')

{  
 // checking your significant other's age  
 if ((year / 2) + 7 < MINYEAR)

{  
 System.*out*.println("The age of your significant other is below

the acceptable norm (18). Her " + ((year /

2) + 7));  
 }  
 // main conclusion  
 else

{  
 System.*out*.println("You are a man and you " + year + ", and to

your soulmate " + ((year / 2) + 7) + ".");  
 }  
 // if it's a girl  
 }

else if (IsCorrect)

{  
 // checking your significant other's age  
 if ((year \* 2) - 14 > MAXYEAR)

{  
 System.*out*.println("The age of your significant other has

exceeded the maximum norm (120). Her " +

((year \* 2) - 14));  
 }  
 // main conclusion  
 else

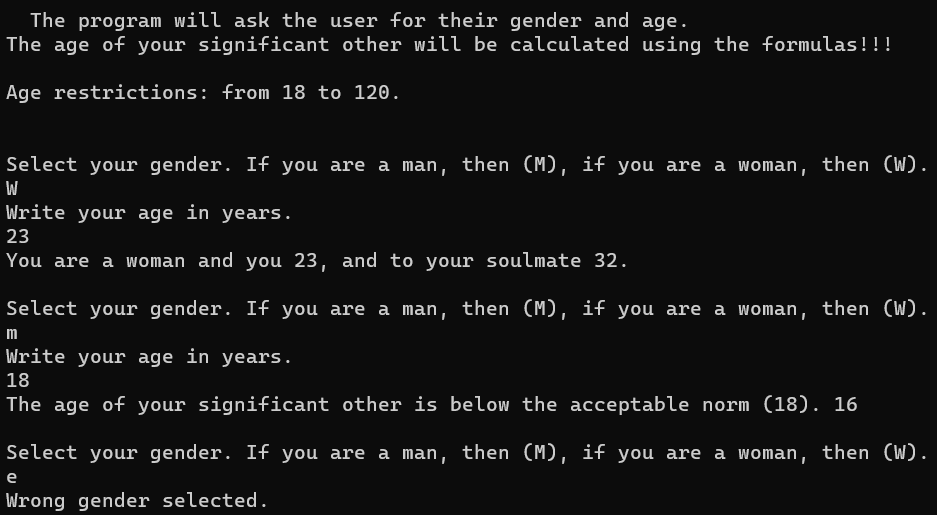
{  
 System.*out*.println("You are a woman and you " + year + ", and

to your soulmate " + ((year \* 2) - 14) +

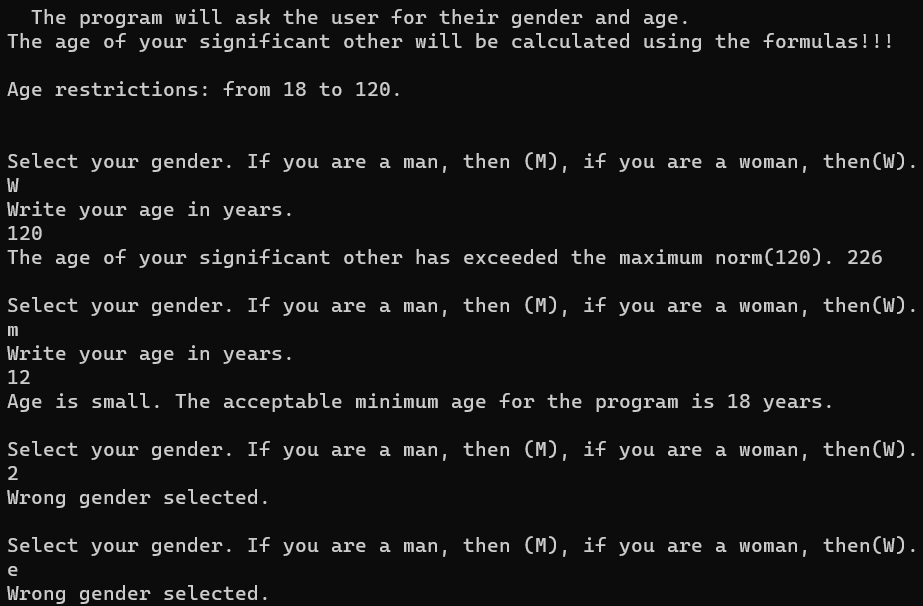
".");  
 }  
 }  
 }

in.close();  
 }  
}

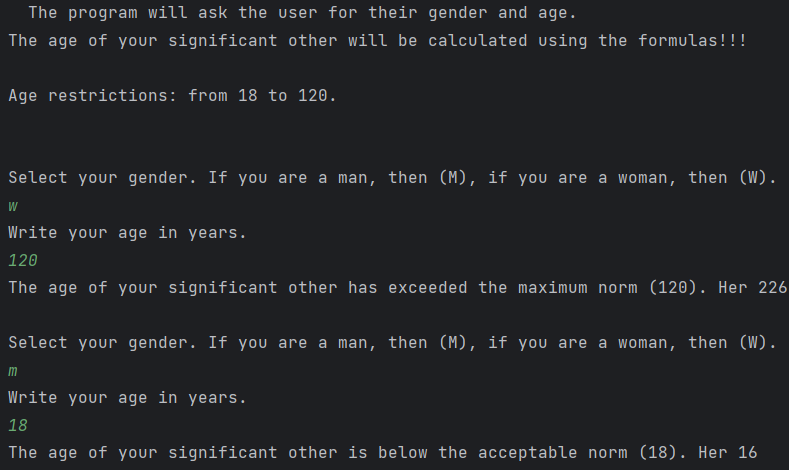
Результат на **Delphi**:



Результат на **C++**:



Результат на **Java**:



Блок-схема:

