Lab 1

Algorithm Development

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Title
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Abstract
Two programming tasks solved with pseduocode and flow chart

Content

1. Introduction

This lab contains two tasks.

For the basic grade (3) I have chosen Task 1 and Task 2.

1.1. Task 1

The aim with this program is to create a help tool for students learning math. The program should pick two random numbers, ask for the sum, control if it is correct or not and display either correct or wrong, try agian.

1.1.1. Pseduo code and flowchart

Use srand to get different random seed

Set rand_nr_a to random number between 0-100

Set rand_nr_b to random number between 0-100

Set stop to false

While stop is false

     Ask for the sum of rand_nr_a and rand_nr_b

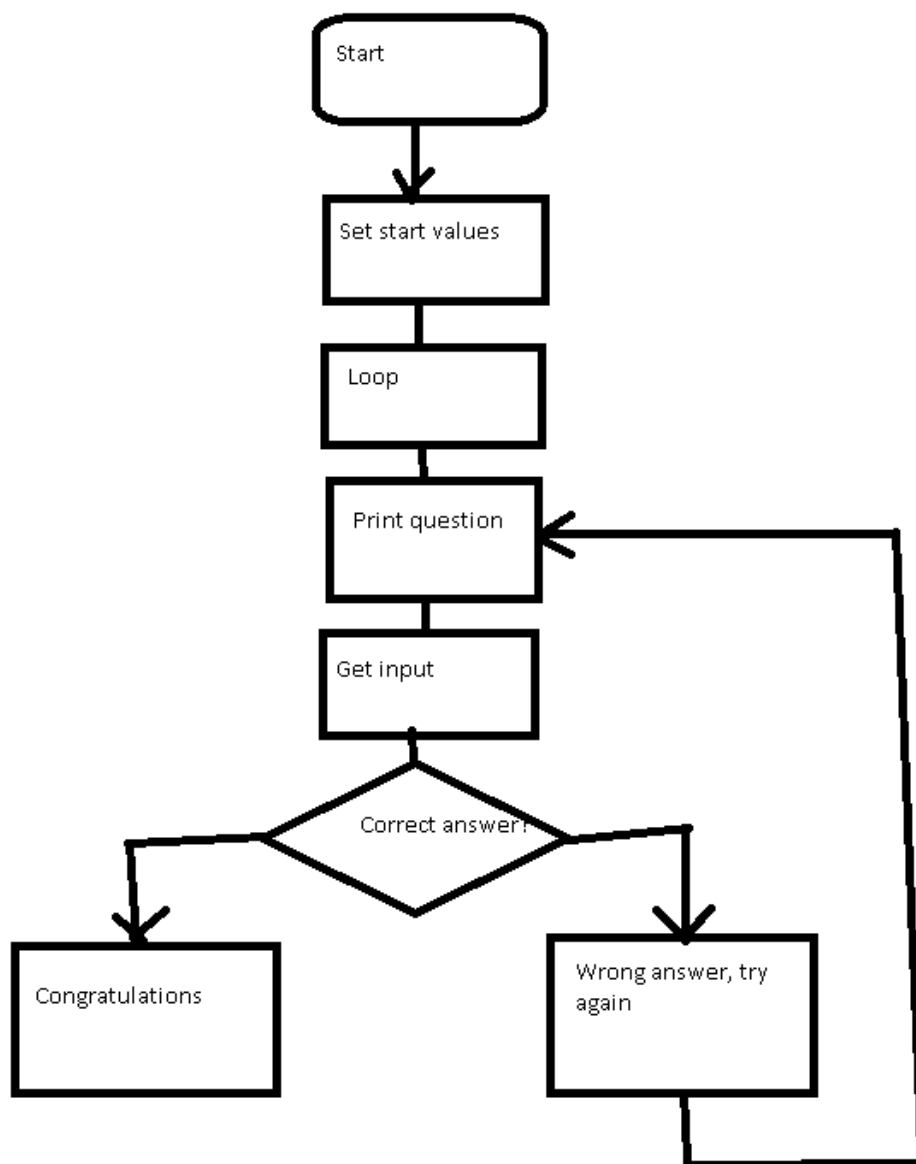   Input the answer

     If rand_nr_a + rand_nr_b == answer

         Print very good

         Set stop to true

    Else

         Print try again

endwhile

```
                    ┌──────────────┐
                    │    Start     │
                    └──────┬───────┘
                           │
                           ▼
                    ┌──────────────┐
                    │Set start values│
                    └──────┬───────┘
                           │
                    ┌──────────────┐
                    │    Loop      │
                    └──────┬───────┘
                           │
                    ┌──────────────┐
                    │Print question│◄──────────────┐
                    └──────┬───────┘               │
                           │                        │
                    ┌──────────────┐               │
                    │  Get input   │               │
                    └──────┬───────┘               │
                           │                        │
                      ◄ Correct answer? ►           │
                    ┌──┘              └──┐           │
                    ▼                    ▼           │
           ┌──────────────┐    ┌──────────────┐     │
           │Congratulations│    │Wrong answer, try│──┘
           │              │    │again         │
           └──────────────┘    └──────────────┘
```

1.2. Task 2

This program should ask for input of how many multiplication tables should be listed. Those should then be listed.

1.2.1. Pseduo code and flowchart

Set stop to false

While stop is false

    Ask for input

    Input the answer and save into variable

    Print first line as a label

    Print second line as a dashed line with underscore and space

    Loop us long as int i is less than the inputted answer variable

        Print i-i*10

endwhile

Start

Set start values

Loop

Print question

Get input

Print label

Print line

Så länge villkor inte är uppfyllt

Skriv ut rad