Lab 3

Task 7

Find out the output of the following program before running it in the computer. Then check your output with computer. Put your output as a comment in the end of the program an d explain the use of `%7d` and `%-7d`.

```
#include <stdio.h>
int main ()
{
     int x = 30, y = 30;
     int temp1, temp2, temp3;

     temp1 = x/++y;
     printf("temp1= %d\ty= %d\n", temp1, y);

     temp2 = x/++y ;
     printf("temp2= %-7d\ty= %d\n", temp2, y);
     y=30;

     temp3 = x/y++;
     printf("temp3= %7d\ty= %d\n", temp3, y);
     return 0;
}
```

Task 8

Write a program to read two integers, compare them and o utput the bigger one.

Requirements:

- No *if* statement is used in the program.
- Refer to pages 17, 18 in Lecture 4 slides.

For example, if input is 2 5, then the output is 5.

Task 9

Write a program to read two integers. Output two results: one is about “integer divided by”, another uses “float divided by”. For the “float divided by”, round the result to 2 decimal places (refer to task 3 for how to achieve this). Please make input and output user-friendly.

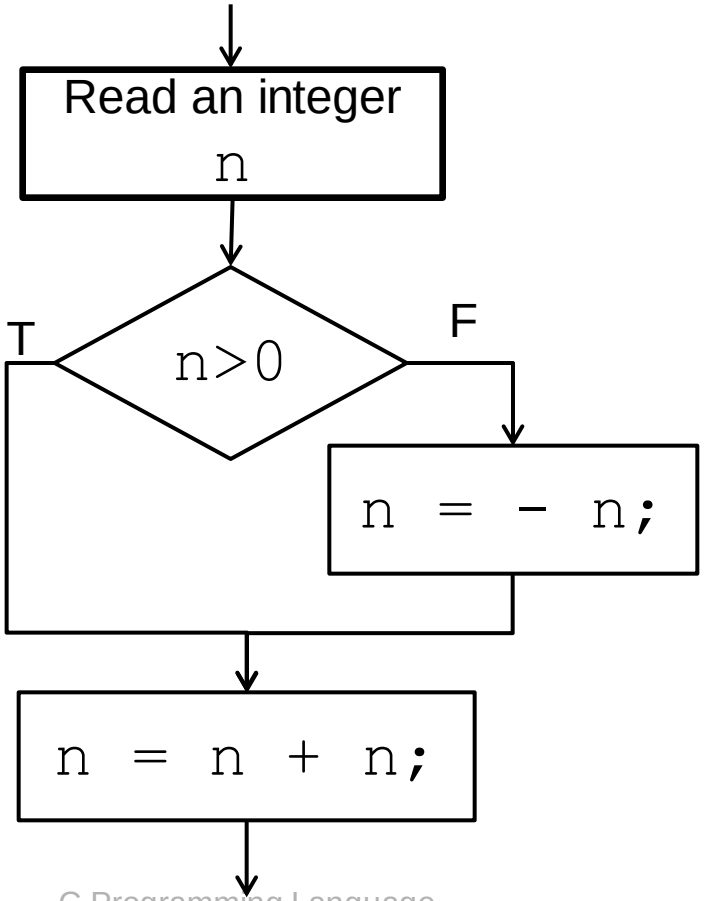
For example, if the input is 6 4, then the output could be

Integer: 6 divided by 4 is 1

Float: 6 divided by 4 is 1.50

Task 10

Write a program according to the following control flow diagram and output the final value of *n*.



Task 11*

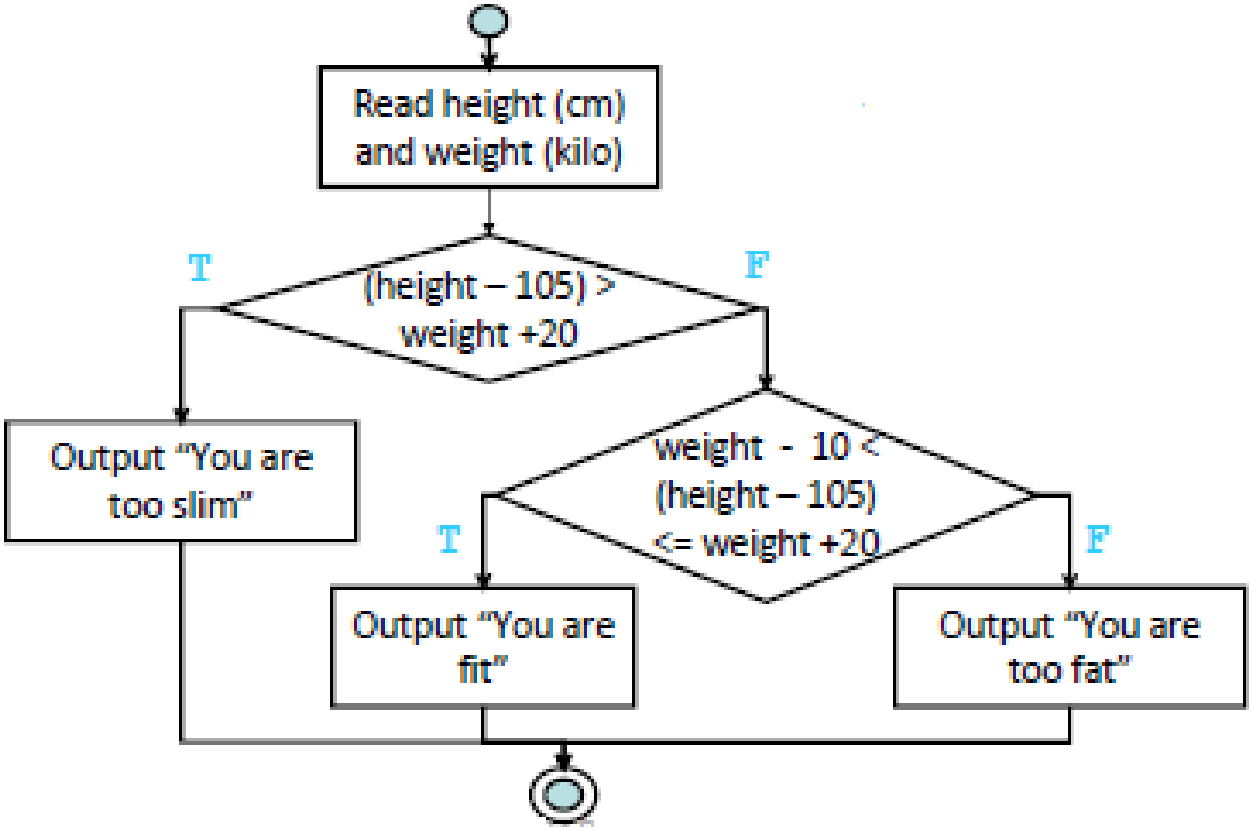
Write a program to read an amount of Euro dollars and change to HK dollar or RMB. Please output the amount of HK dollar or RMB depending on the choice. Assume the exchange rate between Euro dollar and HK dollar is 8.1, between Euro dollar and RMB is 7.2. Please choose proper data type and decimal places.

For example, the screen input and output could be like this (grey: output, white: input):

```
Please input amount in Euro: 10
Please choose the currency converting to (1: HK dollar, 2: RMB): 1
10 euro =  89.10 HK dollar
```

Task 12

Write a program for the following control flow diagram.



Task 13

Use switch statement to implement a program that can read a nd transfer a GPA grade to GPA point. Output a warning if an y invalid grade is input.

- If GPA is ‘A’ or ‘a’, output 4.00
- If GPA is ‘B’ or ‘b’, output 3.00
- If GPA is ‘C’ or ‘c’, output 2.00
- If GPA is ‘D’ or ‘d’, output 1.00
- If GPA is ‘F’ or ‘f’, output 0.00

For example:

If the input is **A**, the output is **`4.00`**.

If input is **E**, the output can be **`invalid input`**.

Submission

- Compressed *.cpp into one file with file name in the format *Lab3_#######.zip* and submit it into iSpace.
- All .cpp files must be able to run under Visual 2010 C++ Express. The outputs will be checked against the outputs under Visual 2010 C++ Express