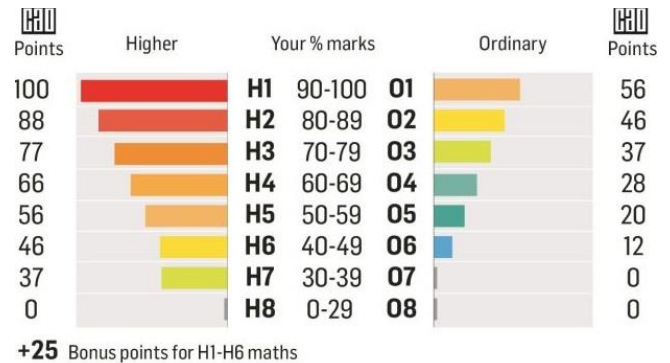


The Puzzle

The user wants to enter a mark between 0 and 100.

They want the mark converted to a Leaving Cert grade.

They also want to enter Ordinary or Higher Level.



Abstraction

We want to develop an algorithm that makes a decision about which grade to output based on the user's inputted mark.

Some of the key components of the problem are :

- The grade is conditional upon the mark entered. That means if and else statements.
- The level of the user ("O" or "H") can be just combined with the grade number ("1 – 8").

Writing your Thinking

Take 5 minutes to think about how you tackled this problem.

- **Did you use pen and paper to help visualise possible solutions?**
- **Did you break it down to a small number of grades first to make the problem easier to solve?**
- **Did you look for patterns in order to make it easier to solve?**
- **Did you try different scenarios to verify your solution worked?**

Using Think-Pair-Share-Square (TPSS), go through how you and your partner were thinking about how to solve the problem.

Pseudo-Code

#Initialise the conditions

ask the user for the mark and the level;

#assign a grade depending on the mark inputted

if mark ≥ 90 {grade = 1; }

else if mark ≥ 80 {grade = 2;}

else if mark ≥ 70 {grade = 3;}

:

:

else if mark ≥ 30 {grade = 7;}

else {grade = 8}

#report to the user

output the combined level and grade;

More features to add to your solution

If the user enters a mark outside the 0 – 100 range, add a feature that allows the user to re-enter the mark.

If the user enters a level that doesn't correspond to Ordinary or Higher, add a feature that allows the user to re-enter a valid level.

Can you add a Graphical User Interface (GUI) to make it easier for the user to enter their data? Look back at the CT challenge for Strings where a Tk-inter GUI is already designed. Perhaps you could modify the program to design a suitable GUI for this problem?