Instruction:

Please complete the problem below using the language of your choice. Feel free to take as much time as you need. Please ensure that your solution is not publicly accessible.

The exercise helps us understand your approach to problem solving, including your coding, design, and testing skills. We will review your solution and decide on inviting you to the next round of our interview process.

Problem: Clinical Trial Enrolment

Write a program that accepts patient enrolment information: first name, last name, date of birth, weight, and height. The program should output: auto-generated unique ID, age, weight, height, patient group, and treatment.

The purpose of the clinical trial is to evaluate the effectiveness of **treatment A** and **treatment B** in treating the condition of 4 groups of patients. It is important that in each group, there is an equal number of patients treated with treatment A and treatment B. Patient anonymity is also important in a clinical trial; thus, patient personal information must be anonymized.

The following are the rules to generate the output:

- **ID**: must be unique and contain patient's initials.
- **Age**: date of enrolment - dob.
- **Treatment**: treatment A or treatment B.
- **Groups**:
    - Group 1: Height > 180 cm and weight > 100 Kg.
    - Group 2: Height > 180 cm and weight ≤ 100 Kg.
    - Group 3: Height ≤ 180 cm and weight > 100 Kg.
    - Group 4: Height ≤ 180 cm and weight ≤ 100 Kg.

Example

An example provided below uses CSV as the input/output format, and to ensure the uniqueness of the patient ID, the program uses the combination of initials and a sequence number. Note that you may use other I/O format, and may use other strategy to ensure the uniqueness of the patient ID.

Input (first name, last name, date of birth, weight, and height):

```
John, Doe, 21 Apr 1979, 120, 192
George, Dallas, 03 Mar 1960, 112, 182
Jim, Dawn, 14 Jun 1965, 90, 181
Michelle, Dame, 06 Jun 1970, 121, 175
Allan, Walker, 06 Jul 1979, 150, 170
Bill, White, 27 May 1980, 70, 165
Sonya, Goldsworth, 11 Aug 1962, 75, 192
Lisa, Smith, 12 Sep 1977, 105, 190
Lindsey, Smith, 14 Dec 1982, 103, 185
```

Output (ID, age, weight, height, patient group, and treatment):

```
JD001, 38, 120, 192, Group 1, Treatment A
GD001, 58, 112, 182, Group 1, Treatment B
JD002, 52, 90, 181, Group 2, Treatment A
```

```
MD001, 47, 121, 175, Group 3, Treatment A
AW001, 38, 150, 170, Group 3, Treatment B
BW001, 37, 70, 165, Group 4, Treatment A
SG001, 55, 75, 192, Group 2, Treatment B
LS001, 40, 105, 190, Group 1, Treatment A
LS002, 35, 103, 185, Group 1, Treatment B
```

Assumption: date of enrolment is 03 Apr 2018.

Deliverables

Please deliver the following:

1. Source code and executable of your solution.
2. Instruction to run the program.
3. List of assumptions you made in solving the problem.

Good luck and have fun!