100 pts

Name: _____

Class: _____

Due Date: _____

Assignment #7: Military Academy (OOP)

A military academy accepts candidates according to the following age, height and weight requirements. All requirements are inclusive (e.g. 18 and 25 are acceptable ages)

Min Age: 18
Max Age: 25

Gender	Min. Height	Max. Height	Min.Weight	Max. Weight
Male	65.0 in.	80.0 in.	130 lbs.	250 lbs.
Female	62.0 in.	75.0 in.	110 lbs.	185 lbs.

The academy needs program that will read in a series of candidates. For each candidate the user will input the candidate's name, age, gender, height and weight. The acceptance status of each candidate will be output to a file. Candidates that are accepted should go in one file – rejected candidates should go in another file. If the candidate is not accepted it should indicate which of the criteria they were rejected based on (*see the output file below). The program should continue executing until the user inputs "Done" for the name. At the end of the file it will also include the percentage of accepted candidates

- You will need an object that will track each candidate's information. It should also track their acceptance on each of the criteria as well as whether they have been accepted or not.
- Use overloading in the methods to allow the user to set all the values at once, set the name & gender, and set the age, height, & weight.
- Upon receiving the height and weight the attributes for acceptance should be set.
- I recommend starting with the class definition.
- Next, Implement the methods
- Then write Main and associated functions.
- For the main program, overload 3 functions – call them Validate Input. Make them all generic.
    - Function 1: should take in a prompt and 2 chars and validate that the input is one of those two characters – it should return a validated char.
    - Function 2: should receive a prompt and a max int and min int and return an int input between those two values inclusively.
    - Function 3: should error check floats similarly to Function 2.
- Age error check range: 0 – 130 inclusively
- Height error check range: 30.5 -100.0
- Weight error check range: 75 – 1400

The solution should demonstrate good functional decomposition and use of objects.

You should use toupper for this assignment

USE THE STYLE AS SPECIFIED IN THE LECTURE NOTES!

Turn in (IN THIS ORDER)

1. This sheet (first page only)
2. Console Output
3. OutputFiles (accepted then rejected)
4. Header File for the main program
5. Int main()
6. Functions (all ValidateInput functions can go in one source file)
7. Class header files followed by class methods
8. A listing of the code (conforming to style discussed in class → properly documented

EXPECTED INPUT/OUTPUT (Input is in green, output is in blue)

TEST RUN #1

```
Please enter the candidate's information. Enter "Done" to exit
Name:               Jane Johnson
Gender (M/F):       f
Height (in inches): 30.5
Weight (in lbs):    75
Age:                0


Please enter the candidate's information. Enter "Done" to exit
Name:               Al James
Gender (M/F):       M
Height (in inches): 100
Weight (in lbs):    1400
Age:                130


Please enter the candidate's information. Enter "Done" to exit
Name:               Dean Martin
Gender (M/F):       m
Height (in inches): 65
Weight (in lbs):    130
Age:                18


Please enter the candidate's information. Enter "Done" to exit
Name:               Dakota Williams
Gender (M/F):       M
Height (in inches): 80
Weight (in lbs):    250
Age:                25


Please enter the candidate's information. Enter "Done" to exit
Name:               Jessica Moore
Gender (M/F):       F
Height (in inches): 62
Weight (in lbs):    110
Age:                22


Please enter the candidate's information. Enter "Done" to exit
Name:               Fran Willis
Gender (M/F):       f
Height (in inches): 75
Weight (in lbs):    185
Age:                25

Please enter the candidate's information. Enter "Done" to exit
Name:                 Done
```

OUTPUT FILE – ACCEPTED (should include your class heading)

```
NAME             GENDER  AGE  HEIGHT  WEIGHT  ACCEPTANCE STATUS
---------------  ------  ---  ------  ------  -----------------
Dean Martin           M   18    65.0     130  Accepted
Jessica Moore         F   22    62.0     110  Accepted

33% have been accepted!
```

OUTPUT FILE – REJECTED(should include your class heading)

```
NAME             GENDER  AGE  HEIGHT  WEIGHT  ACCEPTANCE STATUS
---------------  ------  ---  ------  ------  -----------------
Jane Johnson          F    0    65.0      75  Not Accepted (age, weight)
Al James              M  130   100.0    1400  Not Accepted (age, height, weight)
Dakota Williams       M   25    80.0     250  Not Accepted (height)
Fran Willis           F   25    75.0     185  Not Accepted (height)

33% have been accepted!
```

TEST RUN #2

```
Please enter the candidate's information. Enter "Done" to exit
Name:               Kristina Newell
Gender (M/F):       f
Height (in inches): 30

***** INVALID INPUT, please enter a number between 30.5 and 100.0. *****

Height (in inches): 65
Weight (in lbs):    74

***** INVALID INPUT, please enter a number between 75 and 1400. *****

Weight (in lbs):    120
Age:                131

***** INVALID INPUT, please enter a number between 0 and 130. *****

Age:                25


Please enter the candidate's information. Enter "Done" to exit
Name:               Jim Bradley
Gender (M/F):       m
Height (in inches): 67
Weight (in lbs):    132
Age:                -1

***** INVALID INPUT, please enter a number between 0 and 130. *****

Age:                18
```

```
Please enter the candidate’s information. Enter "Done" to exit
Name:               Albert Lang
Gender (M/F):       m
Height (in inches): 81
Weight (in lbs):    135
Age:                24


Please enter the candidate’s information. Enter "Done" to exit
Name:               Done
```

OUTPUT FILE – ACCEPTED (should include your class heading)

```
NAME             GENDER  AGE  HEIGHT  WEIGHT  ACCEPTANCE STATUS
---------------  ------  ---  ------  ------  -----------------
Kristina Newell       F   25    65.0     120  Accepted
Jim Bradley           M   18    67.0     132  Accepted

67% have been accepted!
```

OUTPUT FILE – REJECTED(should include your class heading)

```
NAME             GENDER  AGE  HEIGHT  WEIGHT  ACCEPTANCE STATUS
---------------  ------  ---  ------  ------  -----------------
Albert Lang           M   24    81.0     135  Not Accepted (height)

67% have been accepted!
```