

HW Submission requirements:

- 1) Put your name and ID number on the top of EACH assignment (in comments for programs)
- 2) Name each file the name written in blue above each problem
- 3) Put all the files into a folder and zip it
- 3) Name the zipped folder with all assignments HW#.zip (-5 points for incorrect name)

NOTES:

1. **INCLUDE A README FOR EACH PROGRAM (-10 points) Remember a README should let the user (my TA) know how to run your program**
2. **MAKE SURE YOUR PROGRAM IS PROPERLY INDENTED. (-10 points)**
3. **MAKE SURE ANY COMMENTS YOU INCLUDE ARE MEANINGFUL (-10 points) Do not just put random comments on every line of code**
4. **DO NOT CODE EVERYTHING IN MAIN (Automatic 0)**

Problem 1 (20 points)-True/False. Submit a file named Answers.doc

Answer the following true/false questions using the following code. You must correctly state **WHY** your answer is true or false in order to receive credit.

```
int main()
{
    Rider r1("Yaris", 45); //name, height in inches
    Rider r2(49); //height in inches

    Amusement_park a1(3); //3 is the number of rides in the amusement park
    a1.get_ride(1).add_line(r1); //add a rider to the line of a ride

    Amusement_park a2(2); //2 is the number of rides in the amusement park
    a2.get_ride(1).add_line(r2); //add a rider to the line of a ride

    return 0;
}
```

1. If the *add_line()* function is kept in the Ride class, then the *get_ride()* function must also be in the Ride class.
2. We can assume that the *Rider* class has at least three constructors.
3. We can assume from **the above code alone** that *using namespace std;* is used.
4. *get_ride()* is a private function.
5. We can assume the *Amusement_park* class has an overloaded constructor.

Problem 2 (30 points)-Write a program. Submit a file named height.cpp

Amusement parks have minimum heights for their rides. Create a program that adds users to the line of a ride in an amusement park if they meet the minimum height requirement (given in inches).

- Create three classes:
 - An *amusement park* class
 - A *ride* class (an actual ride in the amusement park)
 - A *rider* class (people riding the rides)

It should work with the following main **(DO NOT MODIFY-NO CREDIT IF YOU MODIFY):**

```
int main()
{
    Rider r1("Yaris", 45); //name, height in inches
    Rider r2(49); //height in inches

    Amusement_park a1(3); //3 is the number of rides in the amusement park
    a1.get_ride(1).add_line(r1); //add a rider to the line of a ride

    Amusement_park a2(2); //2 is the number of rides in the amusement park
    a2.get_ride(1).add_line(r2); //add a rider to the line of a ride

    return 0;
}
```

**Note:*

```
Amusement_park a1(3); //3 is the number of rides in the amusement park
a1. get_ride(1) .add_line(r1); //add a rider to the line of a ride
```

The integer argument in the function **get_ride(1)** represents the number of the ride (Is it ride 1? ride 2? ride 3?) in the amusement park.

For example, a1 has 3 rides, so the number we pass in is the number of the ride to add a rider to (ride 1 in this case).

Possible Sample Run 1 (your program does not have to match the following exactly, but should have the same functionality):

~~~Amusement Park Info~~~

Ride 1- Enter minimum ride height and ride name:

40 ride1

Ride 2- Enter minimum ride height and ride name:  
50 ride2

Ride 3- Enter minimum ride height and ride name:  
60 ride3

-Adding rider to line.

~~~Amusement Park Info~~~

Ride 1- Enter minimum ride height and ride name:
75 ride1

Ride 2- Enter minimum ride height and ride name:
76 ride2

-Sorry can't add rider-too short.

Problem 3 (50 points)-Write a program. Submit a file named money.cpp

XYZ Airport has two currency exchange offices. ABC Conversions services the north and east side of the airport while DEF Conversions services the south and the west side of the airport.

Notes:

- You should have a minimum of 2 classes (you decide which classes and how many)
- You decide which currencies are available for conversion

Possible Sample Run 1 (your program does not have to match the following exactly, but should have the same functionality):

Enter name of exchange office and manager: ABC Conversions Armin
Enter name of exchange office and manager: DEF Conversions Jep

Hello traveler! Where are you in the airport? North

Welcome to ABC Conversions. Please contact the manager Armin if you have any complaints.
What currency are you converting to dollars and how much? 200 yen
Here you go: \$---- //the amount in dollars should be displayed here (based on your calculation)

Hello traveler! Where are you in the airport? West

Welcome to DEF Conversions. Please contact the manager Jep if you have any complaints.
What currency are you converting to dollars and how much? 300 dinar
We do not convert the dinar currency here. Sorry.

Hello traveler! Where are you in the airport? West

Welcome to DEF Conversions. Please contact the manager Jep if you have any complaints.
What currency are you converting to dollars and how much? 300 peso
Here you go: \$---- //the amount in dollars should be displayed here (based on your calculation)

Hello traveler! Where are you in the airport? exit

\$\$\$Total dollars given out: \$ --- //total amount of dollars dispensed should be displayed
Exiting...