

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 (and their READMEs) into individual folders
- 4) Put these individual folders into a single folder and zip this single folder
- 5) Name the zipped folder HW2.zip (-5 points for incorrect name)
- 6) Submit this single zipped folder on Canvas

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. Include a sample run of your program on the README and include any issues that may crash your program (for example, if your program specifically doesn't accept string inputs, include that) or any missed functionalities from the assignment prompt*
- 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(int argc, char **argv)
{
    string person;
    Rider r1("Yaris", 45);
    Rider r2(49);

    Amusement_park a1(3);
    a1.get_ride(1).add_line(r1);

    Amusement_park a2(2);
    int n=a2.get_ride(1).add_line(r2);

    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 tell for sure what class the *add_line()* function is in.
6. We can assume the *Amusement_park* class has an overloaded constructor.
7. From this code, we can tell what the return type of the *add_line()* function is.
8. We can tell for sure what class the *get_ride()* function is in.
9. From this code, we can tell what the return type of *get_ride()* is.
10. There are the same number of objects created as there are number of classes used.

Problem 2 (10 points)-Purpose of each line. Submit with Answers.doc

Using the list given below the code, write what the purpose of each line of code is. All answers can be used multiple times or not at all.

```
int main(int argc, char **argv)
{
    Car c1("Mazda", 2001); 1._____
    Driver d1; 2._____

    int num=c1.get car("yellow").open door(7); 3._____
    float price=9.99; 4._____
    price=d1.get gas(34,3.99); 5._____

    return 0;
}
```

Creating an object

Creating and initializing an object

Creating a variable

Creating and initializing a variable (by hardcoding)

Creating and initializing a variable (by storing a function return value)

Assigning a value to a variable (by hardcoding)

Assigning a value to a variable (by storing a function return value)

Problem 3 (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(int argc, char **argv)
{
    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 4 (40 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 **picked from the following options**: Currency, Office, Manager, Airport (No credit if you do not pick from these class options)

-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...