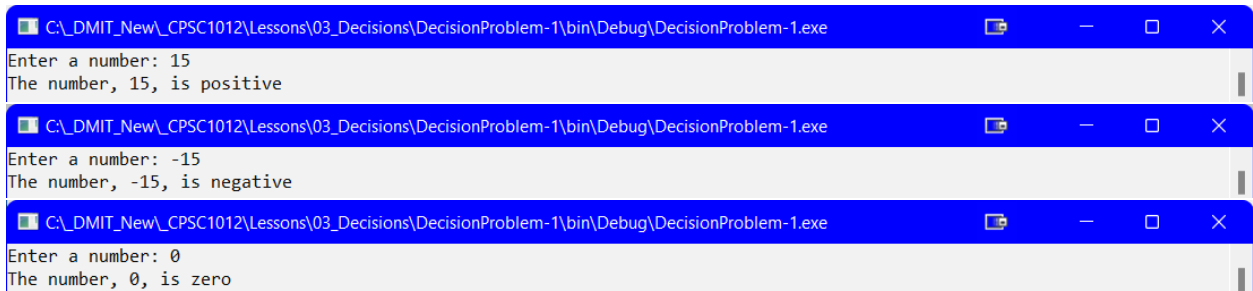


## Decision Making Problems

Provide solutions to each of the problems below.

1. Write a program that will prompt for a number and display “positive” if it is greater than zero, “negative” if it is less than zero, and “zero” if it is equal to zero.



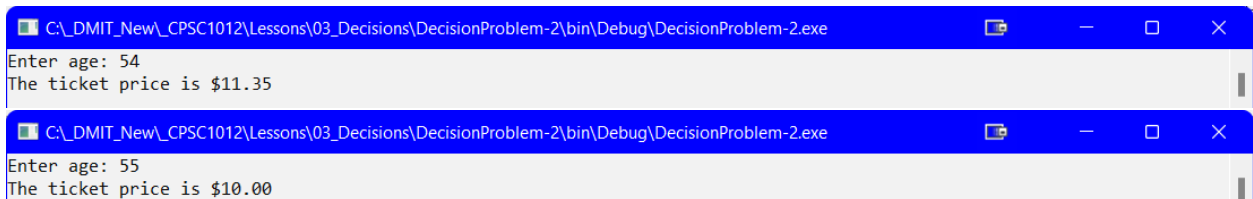
```
C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-1\bin\Debug\DecisionProblem-1.exe
Enter a number: 15
The number, 15, is positive

C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-1\bin\Debug\DecisionProblem-1.exe
Enter a number: -15
The number, -15, is negative

C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-1\bin\Debug\DecisionProblem-1.exe
Enter a number: 0
The number, 0, is zero
```

2. Write a program that will determine the cost of admission for a theatre. The price of admission is based on the age of the customer. Your program should prompt the user for their age and then display the correct admission amount.

- Children 6 and under = FREE (\$0.00)
- Students 7 to 17 = \$9.80
- Adults 18 to 54 = \$11.35
- Seniors 55+ = \$10.00

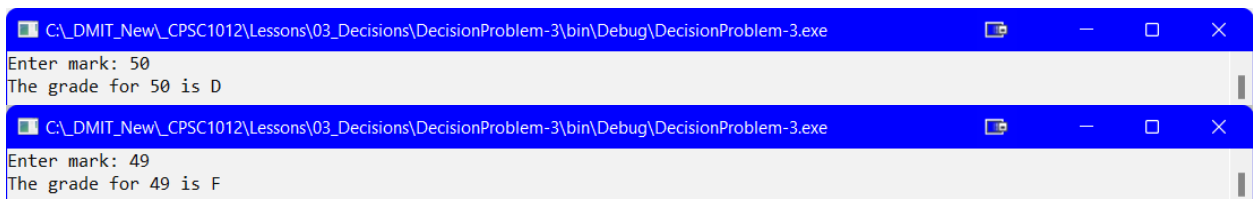


```
C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-2\bin\Debug\DecisionProblem-2.exe
Enter age: 54
The ticket price is $11.35

C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-2\bin\Debug\DecisionProblem-2.exe
Enter age: 55
The ticket price is $10.00
```

3. Write a program that will prompt the user for a student’s name and their mark. The program should display the student’s name along with a letter grade calculated using the following table:

Mark	Grade
100 - 90	A
89 - 80	B
79 - 70	C
69 - 50	D
49 - 0	F



```
C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-3\bin\Debug\DecisionProblem-3.exe
Enter mark: 50
The grade for 50 is D

C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-3\bin\Debug\DecisionProblem-3.exe
Enter mark: 49
The grade for 49 is F
```

4. Write a program that will compute the income tax due on a taxable income entered by the user. Use the following table to determine the tax owed:

Taxable Income	Tax Due
Up to \$50,000	\$0 + 5% of amount over \$0
Up to \$100,000	\$2,500 + 7% of amount over \$50,000
\$100,00 and over	\$6,000 + 9% of amount over \$100,000

```
C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-4\bin\Debug\DecisionProblem-4.exe
Enter taxable income: 49000
The tax on $49,000.00 is $2,450.00

C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-4\bin\Debug\DecisionProblem-4.exe
Enter taxable income: 50000
The tax on $50,000.00 is $2,500.00
```

5. Write a program that asks for the names of three runners and the time, in minutes, it took each of them to finish a race. The program should display the names of the runners in the order that they finished. [**HINT: View the video 11 Gold-Silver-Bronze**]

```
C:\DMIT_New\CPSC1012\Lessons\03_Decisions\DecisionProblem-5\bin\Debug\DecisionProblem-5.exe
Enter name of runner 1: Bob
Enter finish time in minutes: 31
Enter name of runner 2: Sally
Enter finish time in minutes: 27
Enter name of runner 3: George
Enter finish time in minutes: 32

1st place: Sally at 27 minutes
2nd place: Bob at 31 minutes
3rd place: George at 32 minutes
```