

## Problem Set 1 Exercise #26: Movie Tickets

**Reference:** Lecture 3 notes

**Learning objective:** Selection statements

**Estimated completion time:** 70 minutes

### Problem statement:

[Adapted from CS1010J AY2016/17 Semester 1 PE 1 Exercise 2]

Today is 15 September 2016, Thursday. Mr. Tan plans to watch a movie sometime this month (September) or next (October). He searches online for the price of movie ticket and below is the information he finds.

	3D Films		2D Films	
	Monday to Thursday	Friday to Sunday	Monday to Thursday	Friday to Sunday
Normal Price	\$11	\$14	\$8.5	\$12.5
Senior Citizen	\$4.5		\$4.5	
Student	\$7		\$7	
Movie Club Member	\$6.5 (Tue only)		\$6.5 (Tue only)	

Note that special prices for senior citizen or student are applicable on Mondays to Thursdays only while special price for movie club member is applicable on Tuesdays only.

Write a program **movie\_ticket.c** to help Mr. Tan find the movie ticket price on a given date. You are required to complete the following three functions:

- **day\_of\_the\_week(int day, int month)** that returns the day of the week for the given **day** (1-31) and **month** (9 for September and 10 for October). The returned value is an integer which ranges from 0 (Sunday) to 6 (Saturday).
- **print\_date(int day, int month)** that prints out the date for the given **day** and **month**. For example, if **day** is 8 and **month** is 10, this function prints out: **8/10/2016 is a Saturday**.
- **ticket\_price(int day, int month, int movie\_type, int identity, int is\_member)** that returns the ticket price Mr. Tan needs to pay for watching a movie on the given **day** and **month**. See sample runs below for the meaning of **movie\_type**, **identity** and **is\_member**.

Note that there are 30 days in September and 31 days in October.

You must **NOT** change the function headers given in the skeleton program. You are also **NOT** allowed to change the **main()** function.

Movie ticket price should be displayed in one decimal place.

Four sample runs of the program are given below with user's input shown in **bold**.

#### Sample run #1:

```
Enter day and month to watch movie: 22 9  
22/9/2016 is a Thursday  
Enter type of movie (0 for 2D, 1 for 3D): 0  
Enter your identity (0 for student, 1 for senior citizen, 2 for  
others): 1  
Are you a movie club member (0 for No, 1 for Yes)? 0  
Ticket Price: $4.5
```

#### Sample run #2:

```
Enter day and month to watch movie: 8 10  
8/10/2016 is a Saturday  
Enter type of movie (0 for 2D, 1 for 3D): 1  
Enter your identity (0 for student, 1 for senior citizen, 2 for  
others): 2  
Are you a movie club member (0 for No, 1 for Yes)? 1  
Ticket Price: $14.0
```

#### Sample run #3:

```
Enter day and month to watch movie: 20 9  
20/9/2016 is a Tuesday  
Enter type of movie (0 for 2D, 1 for 3D): 0  
Enter your identity (0 for student, 1 for senior citizen, 2 for  
others): 0  
Are you a movie club member (0 for No, 1 for Yes)? 1  
Ticket Price: $6.5
```

#### Sample run #4:

```
Enter day and month to watch movie: 25 10  
25/10/2016 is a Tuesday  
Enter type of movie (0 for 2D, 1 for 3D): 1  
Enter your identity (0 for student, 1 for senior citizen, 2 for  
others): 1  
Are you a movie club member (0 for No, 1 for Yes)? 1  
Ticket Price: $4.5
```