

PLAN 396

Lecture 3

Dr. Hossen Asiful Mustafa

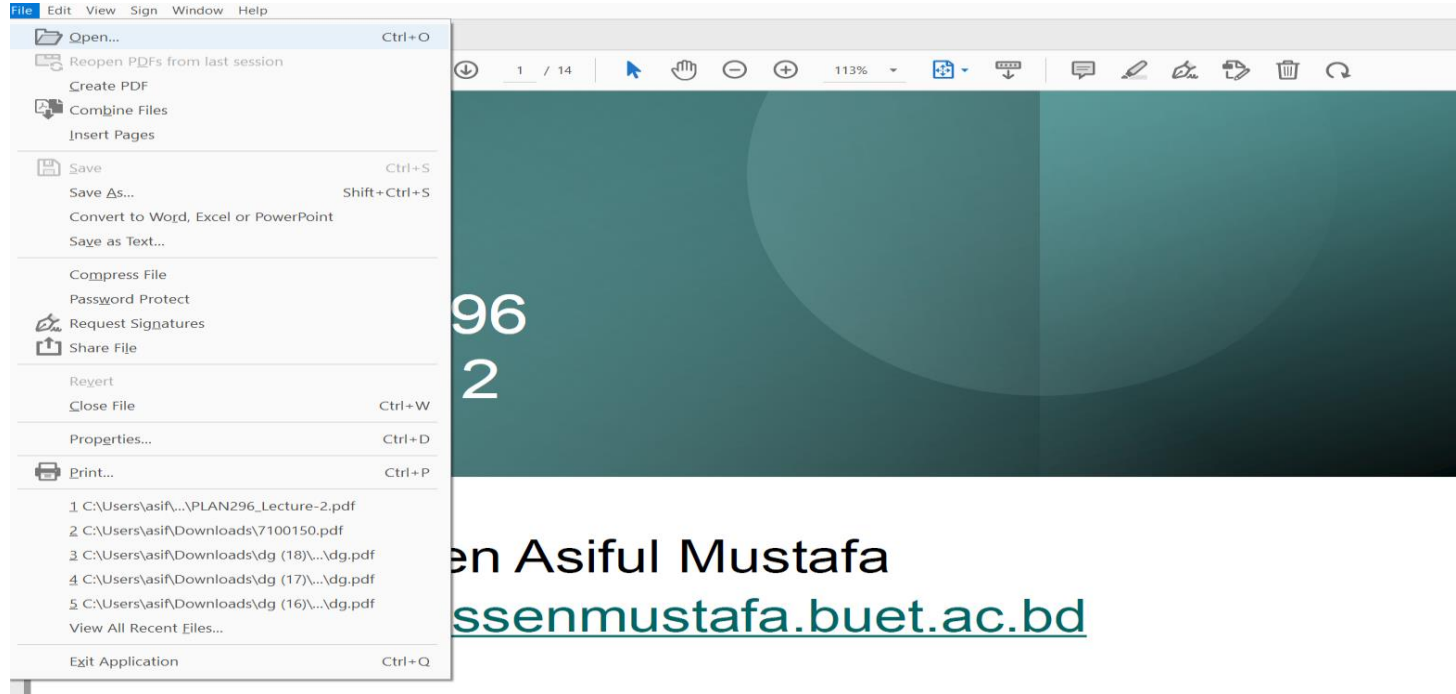
<https://hossenmustafa.buet.ac.bd>



Conditional Statements

- The statements that are executed when one or more condition is met
- **Boolean** expressions are used to check condition
- Example:
 - Check for leap year
 - What are the conditions?

Real Example





If-Else

- The if-else statement is used to express decisions.
- Formally the syntax is

```
if (expression)  
    statement1;
```

else

statement2;



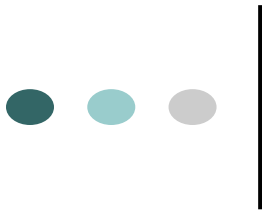
If-Else

```
if (expression){  
    statement1a;  
    statement1b;  
}  
else{  
    statement2a;  
    statement2b;  
    statement2c;  
}
```



If-Else

```
if (n >= 0){  
    printf("n is positive");  
}  
else{  
    printf("n is negative");  
}
```



If-Else

Nested if

```
if (n > 0){  
    if ( x > 0)  
        y = x * n;  
    else  
        y = x + n;  
}
```

Same code without nesting

```
if (n > 0 && x > 0 ){  
    y = x * n;  
}  
else if (n > 0 && x <= 0 ){  
    y = x + n;  
}
```



If-Else-If

```
if (expression){  
    statement1a;  
    statement1b;  
}  
else if (expression){  
    statement2a;  
}  
else {  
    statement2a;  
}
```




If-Else-If

- What would be if-else statements for the following scenario?
 - A park has ticket price for different age groups
 - Baby (0 – 2): free
 - Child (2 – 12): 100
 - Adult (12 – 65): 500
 - Senior (65+): 250



If-Else-If

```
if (age <= 2){  
    ticket = 0;  
}  
else if (age > 2 && age <= 12){  
    ticket = 100;  
}  
else if (age > 12 && age <= 65){  
    ticket = 500;  
}  
else {  
    ticket = 250;  
}
```



Switch

- The switch statement is a multi-way decision that tests whether an expression matches one of a number of *constant integer values*, and branches accordingly.

```
switch (expression) {  
    case const-expr: statements  
    case const-expr: statements  
    default: statements  
}
```



Switch

```
switch (age) {  
    case 1:  
    case 2:  
        ticket = 100;  
        break;  
    case 66:  
        ticket = 250;  
        break;  
    default: ticket = 500  
}
```



Switch

```
char ch='B';
switch (ch)
{
    case 'A':
        printf("CaseA");
        break;
    case 'B':
        printf("CaseB");
        break;
    case 'C':
        printf("CaseC ");
        break;
    default:
        printf("Default ");
}
```



Assignment

- Write a program named assignment-3.c
- The program should take an Integer as year input from keyboard
- The program should output whether the year is ODD or EVEN, and also whether the year is a leap year
- Example:
 - input = 2000
 - Out = “The year 2000 is an EVEN number and it is not a leap year”