Fundamentals of Computing: Lecture 6

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Summary of previous lecture: Statement

- Simple statemets are expressions followed by `;`
- Compound statements are a sequence of statements enclosed in a pair of braces.
- Conditionals; `if` and `if else` statements.
- Loops; while loop and for loop.

Arrays

Declaration

type variable[integer]; type variable[]=values;

Eg,

```
int x[100];
double mass[100];
int u[] = {10,11,12,13,14}
```

Character type

```
char foo = 'A';
char foo = '\65';
char foo = 65;
```

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Character escapes

- '\n' is new line,

Character type

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char foo = 'A';
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Character escapes

- '\n' is new line,
- '\t' is tab,

Character type

```
char foo = 'A';
char foo = '\65';
char foo = 65;
```

Character escapes

- '\n' is new line,
- '\t' is tab,
- '\65' is the character with ascii value 65,

Character type

```
char foo = 'A';
char foo = '\65';
char foo = 65;
```

Character escapes

- `'\n'` is new line,
- `'\t'` is tab,
- `'\65'` is the character with ascii value 65,
- `'\\'` is a back slash character.

Strings

- Strings are character array.
- Strings are terminated with a null character '\0'.

```
char mesg[] = { 'h','e','l','l','o','\0'}
char mesg[] = "hello";
```

The printf and scanf function

```
printf(fmtstring,e_1,e_2...e_n);
scanf(fmtstring,&v1,&v2,...,&v_n);
```

Eg.

```
#include <stdio.h>
int main()
{
  double h,w;
  double area,per;
  printf("Enter the height and width: ");
  scanf("%g %g",h,w);
  area = h * w;
  per  = 2 * (h + w);
  printf("For a %g x %g rectangle\n\t",h,w);
  printf("Area = %g\n\tPerimeter = %g\n", area, per);
}
```

Format specifier for `printf` and `scanf`

- All formating specifier is a % followed by a character,
- To print a literal % use %%,
- Depending on what follows % we have the following meanings

d, x, o	integer in decimal, hex or octal
f	float
g	generic floating point, i.e. float or double.
c	character

For more formating characters check out manpage of scanf.