

Tutorial Sheet (August 03, 2018)

ESC101 – Fundamentals of Computing

Announcements

1. Students are instructed to bring their IITK ID cards when attending labs as lab attendance will be taken using IITK ID cards.
 2. Students are advised to use relproxy when attending lab. This ensures a hassle free experience with the minor quiz.
 3. Piazza accounts have been created for all students. Students are requested to log on to Piazza and start discussing. Students without a Piazza account may mail the instructor.
 4. Students without a section allotted to them are required to obtain a section from the DoAA office on an urgent basis.
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Demonstrations

1. Please demonstrate how to create a new folder/file on scratchpad on Prutor, how to compile that file and execute it. A simple "Hello World" program may be used for this purpose.
 2. Please demonstrate the procedure to students once on your laptops with the Firefox browser (common in NCL machines). Set `relproxy.iitk.ac.in` with port 3128 for all protocols (esp. HTTP and SSL) with `noproxy` for `*.iitk.ac.in`
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Revision (ask for doubts)

1. Declaring (multiple) integer variables
2. Simultaneous declaration and initialization
3. Basic integer operations (+, -, *, /, %)
4. Integer division `int c = 7/2` then `c = 3`
5. Mixing constants and variables `int c = b + 2;`
6. Print statements: use of format string to

```
#include<stdio.h>
int main(){
    int a, b, c;
    a = 5, b = 4;
    c = a + b;
    printf("%d",c);
    return 0;
}
```

- a. Printing multiple integers
 - b. Printing newlines, quotes, backslash, percentage
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Sample Question to discuss

Write a program to print table of 2

2 x 1 = 2

2 x 2 = 4

...

2 x 10 = 20

Proper spacing, newlines needed.

Introduce increment operation i.e.

m = m + 1;

No need for tabs, spaces okay.

```
#include<stdio.h>
int main(){
    int a = 2, m = 1, r;
    r = a * m;
    printf("%d x %d = %d\n", a, m, r);
    m = 2;
    // Alternatively m = m + 1;
    r = a * m;
    printf("%d x %d = %d\n", a, m, r);
    m = 3;
    r = a * m;
    printf("%d x %d = %d\n", a, m, r);
    return 0;
}
```

Some Pitfalls and recognizing compiler error messages

1. Use of undeclared variables (identifiers)
 2. Printing uninitialized variables.
 3. Assignment direction
 - a. x = y will assign value in y to x not the other way round
 - b. x + y = z makes sense in math but in C it is an error
 - c. 2 = x also leads to an error
 4. printf("value of c"); will not print value of c. Use printf("%d",c);
 5. printf needs exactly one format string i.e.
printf("India won by %d", r, "runs and %d wickets.", w);
is incorrect. Instead use
printf("India won by %d runs and %d wickets", r, w);
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