



# Problem Solving With C - UE24CS151B

## C Programming Environment

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PSWC Theory Anchor, Feb-May, 2025

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# PROBLEM SOLVING WITH C

## C Programming Environment

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1. Installation of gcc on different Operating systems
2. Program Development Life Cycle [PDLC]
3. First Program in C
4. Structure of C Program
5. Steps involved in execution of C Program
6. C Compiler standards
7. Errors during execution

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### Installation of gcc on different Operating systems

- Windows OS – Installation of gcc using Mingw.
  - <https://www.youtube.com/watch?v=sXW2VLrQ3Bs>
- Linux OS – gcc available by default

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### Program Development Life Cycle [PDLC]

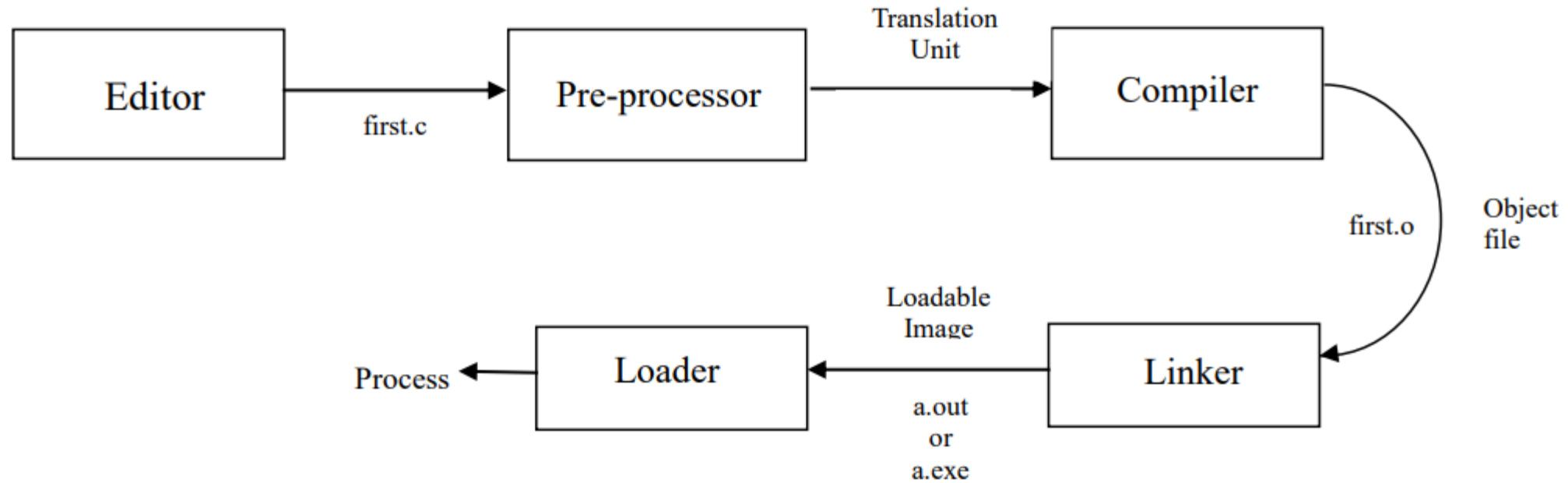


Fig 1: Phases involved in PDLC

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### First Program in C

```
#include<stdio.h>
int main()
{
    printf("Hello PES\n");
    return 0;
}
```

//Importance of int main and return values

## Program Structure

- Case sensitive
- Indentation is not a language requirement
- The main() is the starting point of execution
- Comments in C
  - Using // for single line comment
  - Using /\* and \*/ for multiline comment

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### Steps involved in execution of code

Way 1:

Step1: `gcc <filename> // image a.out is the output`

Step2: `./a.out` OR `a.exe`

Way 2: Creating the object files separately

Compile: `gcc -c <filename> // filename.o is the output`

Link: `gcc filename.o` OR `gcc <list of object files> -l <library>`

Execute: `./a.out` OR `a.exe`

Way 3: Renaming the object files

Step1: `gcc <filename> -o <imagename>`

Step2: `<imagename>`

### C Compiler standards

Standardized by ANSI and ISO: **C89, C99 and C11**

Using c99:

```
gcc -std=c99 program.c
```

Using c11:

```
gcc -std=c11 program.c
```

Use **\_\_STDC\_VERSION\_\_** we can get the standard C version



### Errors during Execution

- Compile time Error
- Link time Error
- Run time Error
- Logical Error

// One Example on each of these



# THANK YOU

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