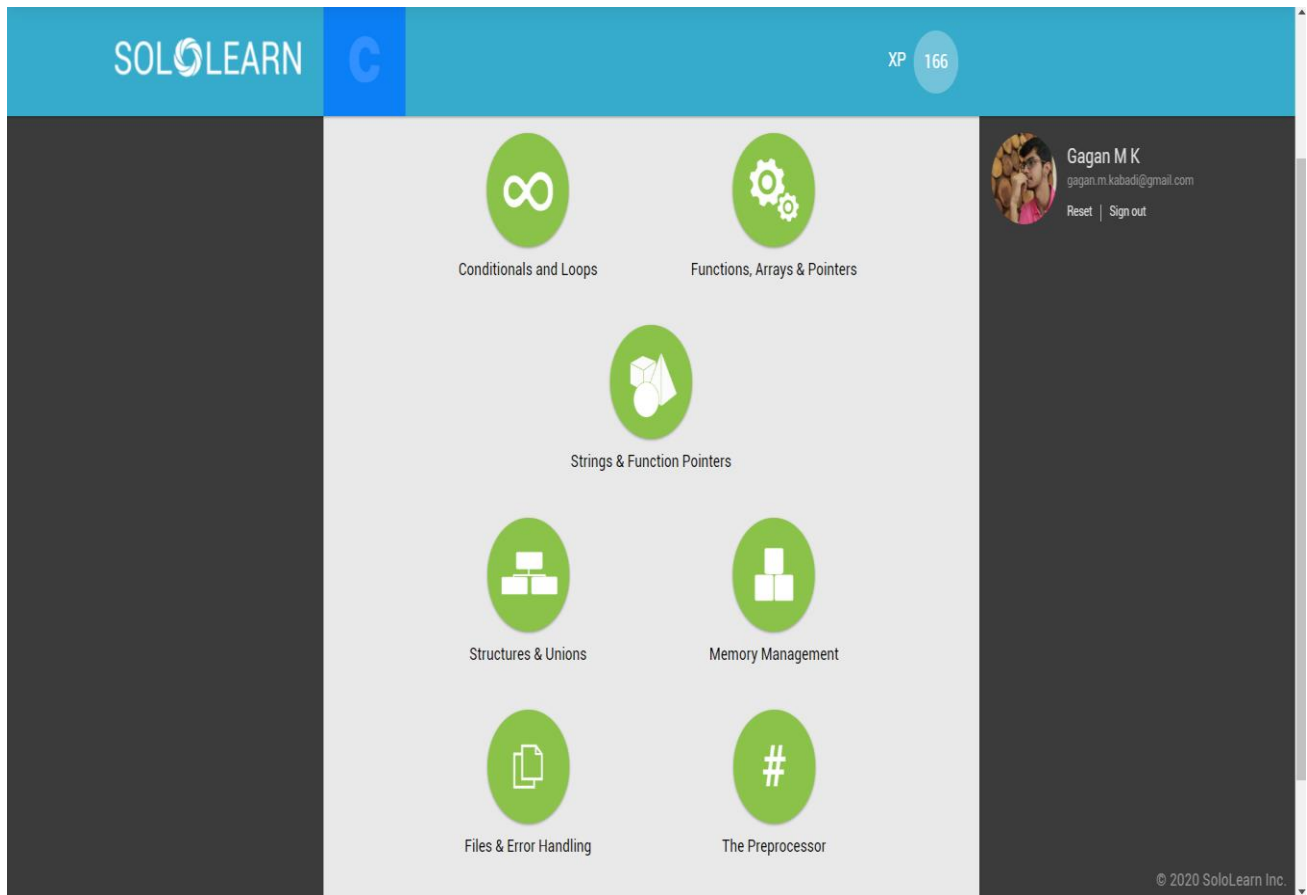


DAILY ASSESSMENT REPORT

Date:	20 June 2020	Name:	Gagan M K
Course:	C Programming	USN:	4AL17EC032
Topic:	<ul style="list-style-type: none">Files & Error HandlingThe Processors	Semester & Section:	6 th sem & 'A' sec
GitHub Repository:	Alvas-education-foundation/Gagan-Git		

FORENOON SESSION DETAILS

Image of session



Report – Report can be typed or hand written for up to two pages.

C Programming:

1. Accessing Files:

- An external file can be opened, read from, and written to in a C program. For these operations, C includes the FILE type for defining a file stream. The file stream keeps track of where reading and writing last occurred.
- The stdio.h library includes file handling functions:
- FILE Typedef for defining a file pointer.
- fopen(filename, mode) Returns a FILE pointer to file filename which is opened using mode. If a file cannot be opened, NULL is returned.
- Mode options are:
 - r open for reading (file must exist)
 - w open for writing (file need not exist)
 - a open for append (file need not exist)
 - r+ open for reading and writing from beginning
 - w+ open for reading and writing, overwriting file
 - a+ open for reading and writing, appending to file
- fclose(fp) Closes file opened with FILE fp, returning 0 if close was successful. EOF (end of file) is returned if there is an error in closing.

2. Reading from a File:

- The stdio.h library also includes functions for reading from an open file.
- A file can be read one character at a time or an entire string can be read into a character buffer, which is typically a char array used for temporary storage.

3. Writing to a File:

- The stdio.h library also includes functions for writing to a file. When writing to a file, newline characters '\n' must be explicitly added.

4. Binary files:

- Binary file mode options for the fopen() function are:
- - rb open for reading (file must exist)
- - wb open for writing (file need not exist)
- - ab open for append (file need not exist)
- - rb+ open for reading and writing from beginning
- - wb+ open for reading and writing, overwriting file
- - ab+ open for reading and writing, appending to file

5. Controlling the File Pointer:

- There are functions in stdio.h for controlling the location of the file pointer in a binary file:
- ftell(fp) Returns a long int value corresponding to the fp file pointer position in number of bytes from the start of the file.

6. Exception Handling:

- Central to good programming practices is using error handling techniques. Even the most solid coding skills may not keep a program from crashing should you forget to include exception handling.

7. The exit Command:

- Using exit to avoid a program crash is a good practice because it closes any open file connections and processes.

8. Using errno:


- To output the error code stored in errno, you use fprintf to print to the stderr file stream, the standard error output to the screen.
- Using stderr is a matter of convention and a good programming practice.

9. EDOM and ERANGE Error Codes:


- Some of the mathematical functions in the math.h library set errno to the defined macro value EDOM when a domain is out of range.

10. The feof and ferror Functions:

- In addition to checking for a NULL file pointer and using errno, the feof() and ferror() functions can be used for determining file I/O errors:
- feof(fp) Returns a nonzero value if the end of stream has been reached, 0 otherwise. feof also sets EOF.
- ferror(fp) Returns a nonzero value if there is an error, 0 for no error

# The Preprocessor
Module 8 QuizXP 146

5/5



What is the output of this code?

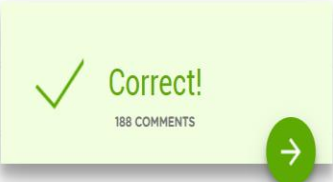
```
#define sqr(x) x*x  
int x = 16/sqr(4);  
printf("%d", x);
```



☐ 0

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☒ 16



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How a Preprocessor works in C?

- A Preprocessor is a system software (a computer program that is designed to run on computer's hardware and application programs).
- It performs preprocessing of the High Level Language(HLL). Preprocessing is the first step of the language processing system. Language processing system translates the high level language to machine level language or absolute machine code(i.e. to the form that can be understood by machine).

1. The #include Directive:

- stdio input/output functions, including printf and file operations.
- stdlib memory management and other utilities
- string functions for handling strings
- errno global variable and error code macros
- math common mathematical functions
- time/date utilities.

2. Formatting Preprocessor Directives:

- When using preprocessor directives, the # must be the first character on a line. But there can be any amount of white space before # and between the # and the directive.
- If a # directive is lengthy, you can use the \ continuation character to extend the definition over more than one line.

3. Predefined Macro Definitions:

- In addition to defining your own macros, there are several standard predefined macros that are always available in a C program without requiring the #define directive:
- `__DATE__` The current date as a string in the format Mm dd yyyy
- `__TIME__` The current time as a string in the format hh:mm:ss
- `__FILE__` The current filename as a string
- `__LINE__` The current line number as an int value
- `__STDC__` 1

4. Conditional Compilation Directives:

- Conditional compilation of segments of code is controlled by a set of directives: #if, #else, #elif, and #endif.

5. Preprocessor Operators:

- The C preprocessor provides the following operators.
- The # Operator
- The # macro operator is called the stringification or stringizing operator and tells the preprocessor to convert a parameter to a string constant.
- White space on either side of the argument are ignored and escape sequences are recognized.

6. The ## Operator:

- The ## operator is also called the token pasting operator because it appends, or "pastes", tokens together.

Certificate:

CERTIFICATE

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Issued 20 June, 2020

This is to certify that

Gagan M K

has successfully completed the

C Tutorial course



Yeva Hyusyan
Chief Executive Officer

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