Hi Guys, Good After noon

Project Discussion

1) Selection of Projects Minimum Complexity

- You should use all the concepts we studied till know (Variables, If, Loops, Arrays and Functions).

- You are not allow to use other concepts we did not cover yet.

1(a) Users of your application

- There should be at least 2 Users of your application like we did for messaging system
- One user was Admin and other user was Agent

1(b)Total number of options in application ?

- Your application should contain at least 10 menu option for both type of users
- Like
  - Press 1 to add Product
  - Press 2 to Add Stock
  - Press 3 to Delete Product
  - Press 4 to Update Product
  - Press 5 to Search Product

1(c)Sorting

- Implementation of Sorting in your project is mandatory.

- Like if you are making **Product Sale Store Application** your application should have options to display product by price lower to high and high to low, Or Stock sorting etc

- Like if you are building a hospital management system your application should contain patient age vise sorting. Or medicine price sorting.
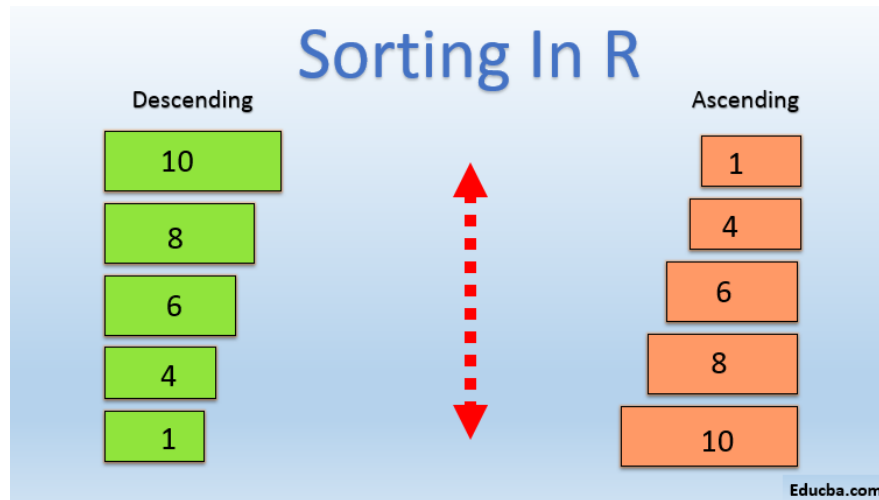
2) Project Ideas ?

- Mobile Shop Management System
- Hospital Management System
- Sports Shop Management System
- School Management System
- Tournament Management System
- Employee Management System
- College Management System
- Book Store
- Hotel Booking
- Social Messaging Application
- Hostel Management
- Pharmacy Management.

3. How to Proceed for Project

3.1 Writing Functional Requirements

- For example we are Developing Medical Store Software

- As an Admin, I shall add a new user so it can login to system and select from user options

- As an Admin, I can add Products

- As an Admin, I can Update and Delete Product

- As Employee I can sale products

- As Employee I can see Daily sale report

- As Employee I can add Stock for product

Example of Functional Requirements

University Management System Functional Requirements

- User must log-in with a username and password in order to use the system

- Admin can Add students and Teachers

- Teacher can add students

- Students can See Mark and Register subjects.

3.2 Design WireFrames

- You can make Wireframes using any Tool like Adobe XD or any other tool you are familiar.
- You can draw Wireframes on your note book but use ruler for proper wireframes.
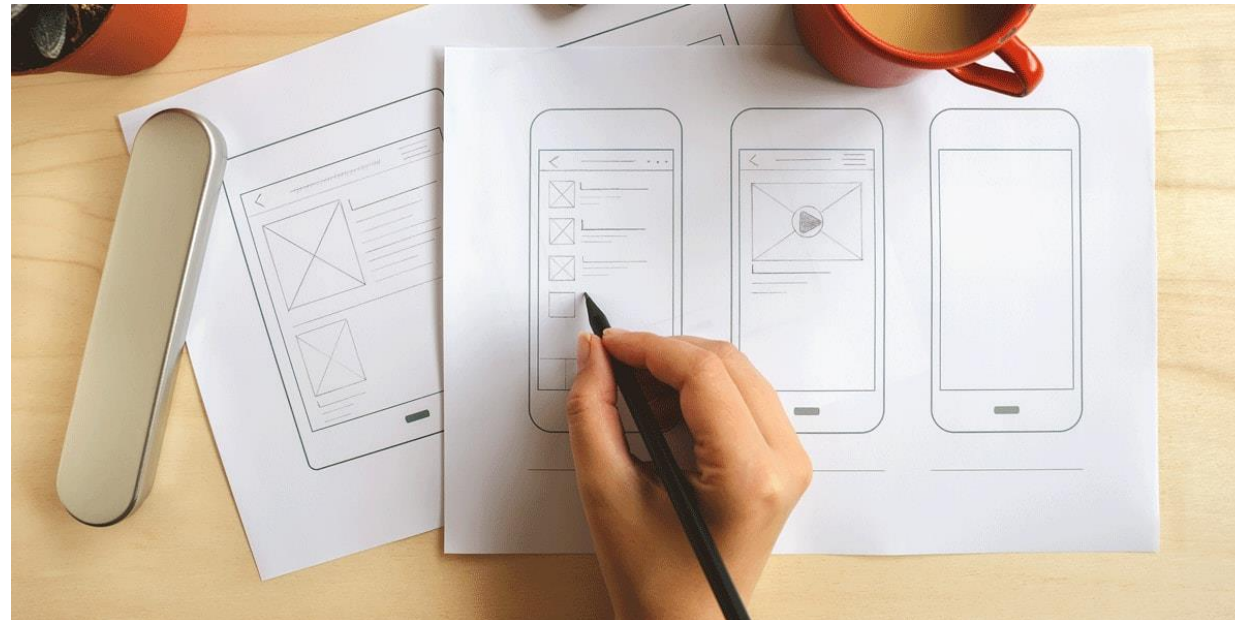
3.3. Get it approved.

- Come up with all material we discussed in above slides and get it approved **by Laeeq Khan.**

- You may get rejected if your work did not satisfy the requirements we discussed above.

Deadline This Friday

3.4 Identify the Data Structure (Arrays that hold information)

price[]		quantity[]		revenue[]
1.99	*	56	=	111.44
4.95	*	38	=	188.10
2.99	*	42	=	125.58
14.95	*	20	=	299.00
28.95	*	17	=	492.15

3.5 Identify Functions

Identify you functions in your project like you are developing University management system than some function will be

```
menu();
display_students ();
add_students();
sort_students_by_marks();

Other way of write function name
displayStudent();
addStudent();
sortStudentByMarks();
```
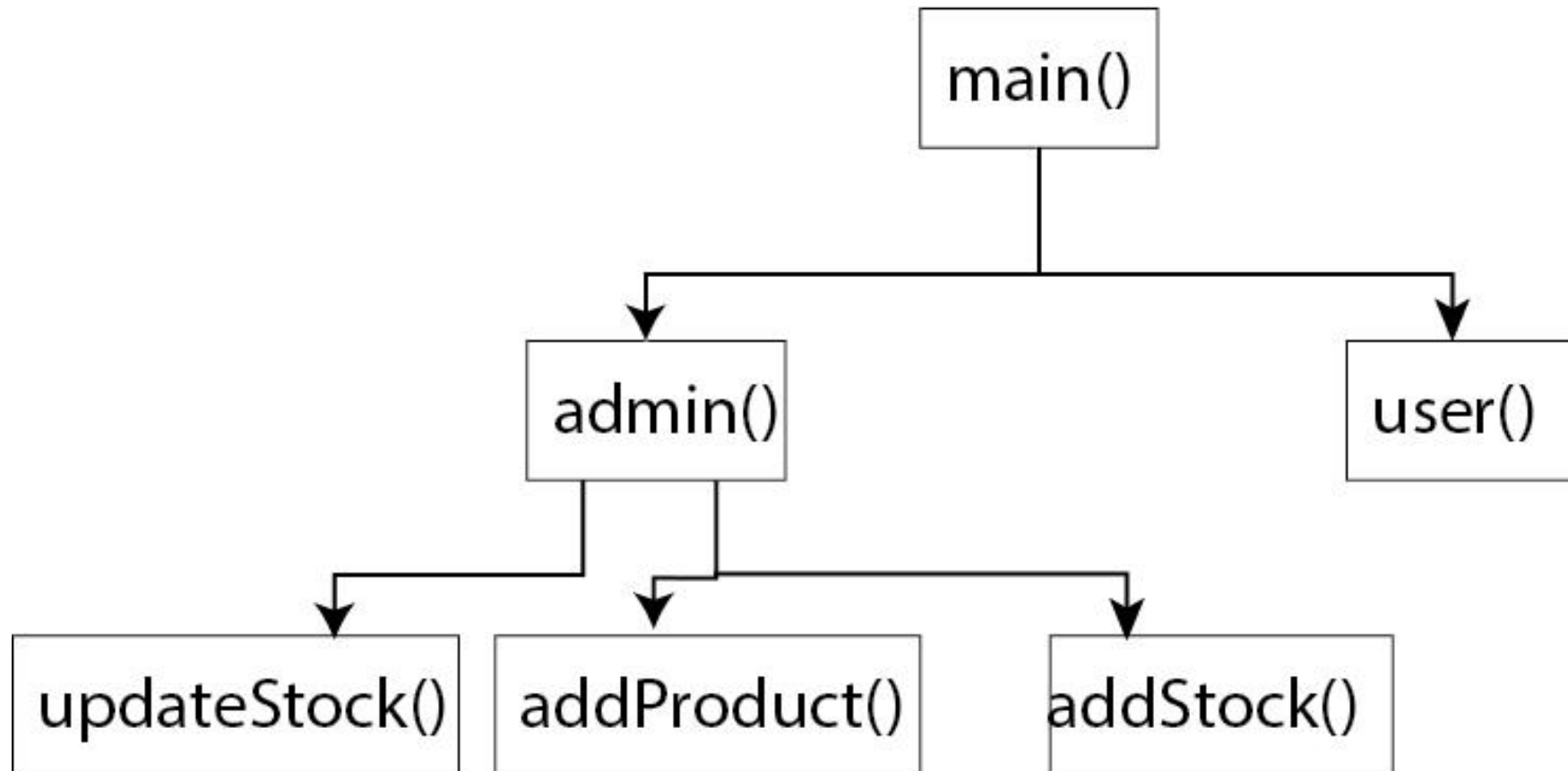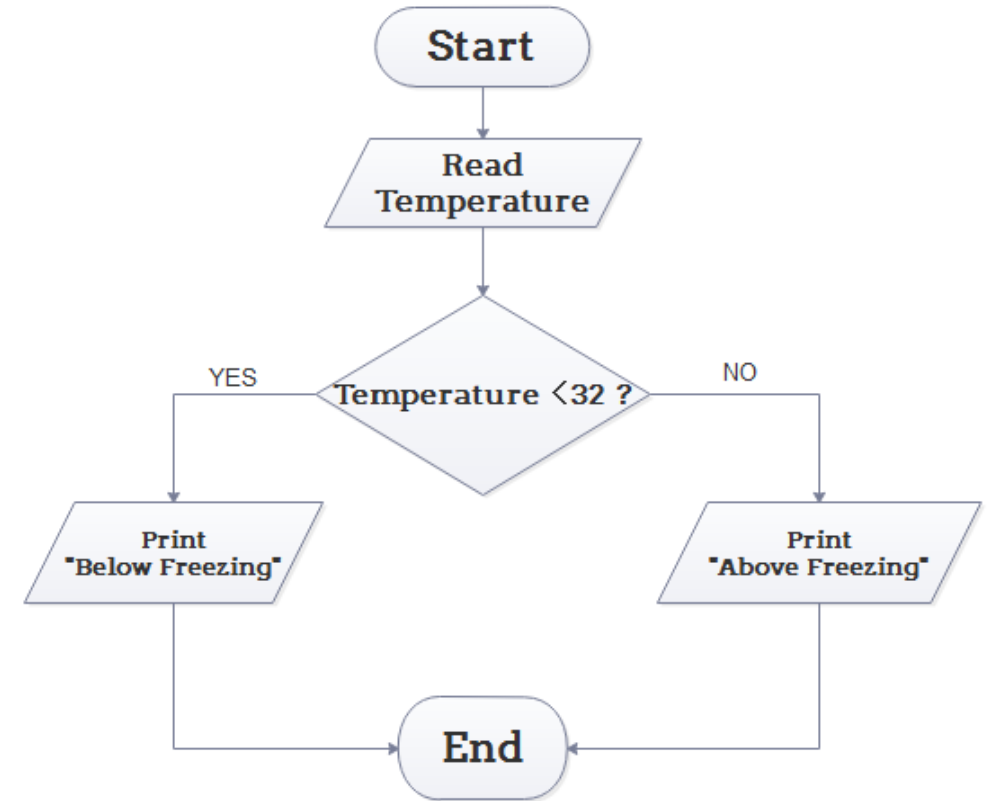
3.5 Make the Function Work Flow

• In this step define which function will be call by which function

3.6 Write Algorithm and Draw Flow Chart for Each Function

- Do this for individual function

3.7 Final Documentation Template

- Project Title (Cover Page) We will provide you the cover page template

- Project Functional Requirements

- Wireframes

- Data structure identification

- Functions identifications

- Functions workflow

- Algorithm and every function flow chart
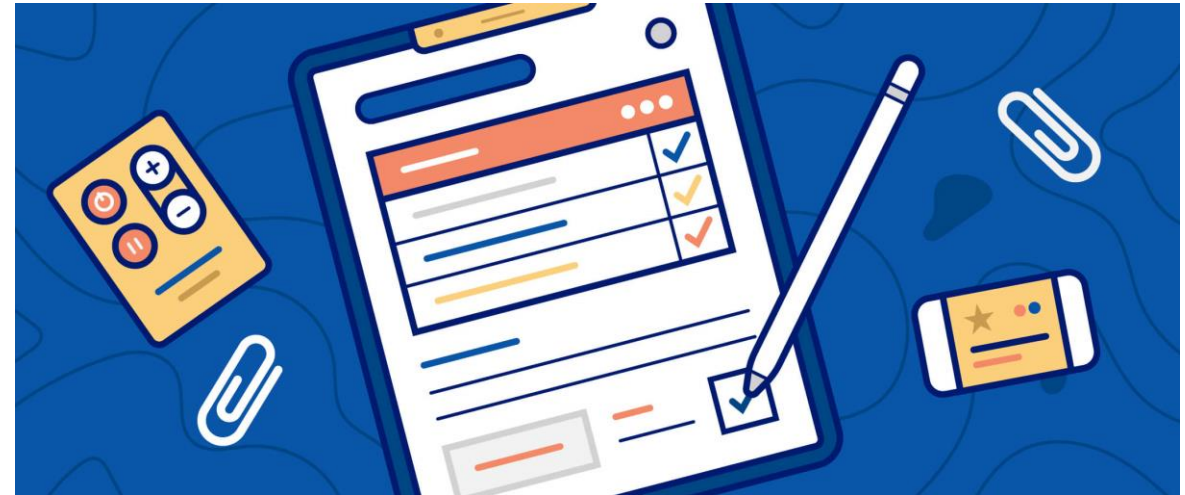
4. Writing Code

- Great you done most difficult part of your project.

- Now lets move to easy and interesting part
  - Start writing code and make it happened.
  - But before start coding lets discuss some important professional practices for writing code

4.1 Coding Style

Variable and Function Names Conventions

- Start variable and function name with small letter and spate two words use in variable by camel case or underscore.

- For example to store product name in variable

- product_Name   OR produtName

- For example to store student marks

  student_marks   OR studentMarks

If condition

```cpp
int x=1;
if(x>2){
    cout<<"This is wrong"; }


int x = 1;
if(x > 2){
    cout<<"This is correct ";
}
```

Loops

```cpp
for(int i=0; i<10; i++){
    cout<<"This wrong coding style";}

for(int i = 0; i < 10; i++){
    cout<<"This is good coding style";
}
```

```cpp
#include<iostream>
#include<conio.h>
#include<string.h>

using namespace std;

int main(){

    cout<<"Welcome to UET "<<endl;
    int val1, valu2;
    cout<<"Enter value 1";
    cin>>val1;
    cout<<"Enter value 2";
    cin>>valu2;

    //Loop will execute 10 time
    for(int i=0; i< 10; i++){
        cout<<" Welcome to counter "<<i<<endl;
        cout<<"Enter a value ";
        int x;
        cin>>x;
        if(x > 5){
            cout<<"Value was greater then 5";
            cout<<"See the indent of code";
        }// end of if statement
    }//end of for loop
}//end of main body
```

4.2 Variable Names

- Variable names for your project should be relevant you are not allow to use variable names like a, b, c.

- **How to Choose variable name ?**

- Like you are developing Store Management Application your variable names should be relevant and give sense to code reader.

- product_name

- product_price

- currentStock

4.3 Indentation

- To enhance readability you code should be well indent like if you are writing something in for loop you all code inside for loop should have same indent. Indent mean gap of your code from Editor left side.

- VS Code provide you auto indent if you do not remove it by user self.

Good and Bad Indent Example

```cpp
int a = 5;
if(a > 10){
    for(int i=0; i<10; i++){
        cout<<"This is good indent example ";
    }
}



int a = 5;
if(a > 10){
 for(int i=0; i<10; i++){
cout<<"This is bad indent example";
}
}
```

4.4. Comments within the code

- Comments are very important part of professional coding. Make it your habit to write comment when write any logic even its hard or easy for your. Specifically write comment on each function header to define what is happening inside function.

- Don't write comment at end of project completion to satisfy just project requirements.

    //   One line comment

    /*
     This is multi line comment
    */

Example of Comment

```
// function to sum two numbers
int sum(int number1, int number2){

    int result = number1 + number2;
    return result;
}
```

Important Note

- Points we discussed like coding style, comments, indentations etc. will be evaluated.

5. Project Display

- Now your project is ready to Display to Audience.
- Your Seniors, Your Department Teachers are your audience.

5.1 Poster

- Design a poster for your project
- We will provide you the basic template for poster, what to include and what not to include in poster

5.2 Presentation

- Presentation Day

    - Come up with project and poster.
    - Get well dress.
    - Present your project.
    - Get your project review

6. Timeline with details

Milestone	Deadline	
Functional Requirements + Wireframes	9 November 2020	-> 1PM
Approval + Algorithm + Flow Charts of functions	16 November 2020	-> 1 PM
Project Competition	23 November 2020	-> 1 PM
Presentation	25 November 2020	1 to 4 PM