# Lap2

1. **Take a grade from user from (0 : 100) and print Excellent**  **90 : 100. Very Good**  **80 : 90.**

Good  65 : 80. Pass  50 : 65. Fail  Less Than 50.

1. **Take a number from user and print if Even OR Odd.**
2. **Take a number from user and get Factorial :- (5** **5\*4\*3\*2).**
3. **Take 2 number from user and perform mathematical operation on them (+**

, - , \* , / ) . (/)  cannot divide by zero.

1. **Take a number from user and check if prime number or not.**
2. **Take 5 number from user and get sum of 5 numbers.**

# Lap3

1. **Menu (Loop) :-**

print menu to user ( New , Display , Exit ). And user can enter char if user enter (n,N || d ,D) :- show the menu again , if (e,E)close the menu, if

another char print (Invalid choice).

1. **Take a number of element of array from user , take the elements of this array , get (Min , Max , Sum).**
   * **Take Number from user and search about it if found in any index of array or not found.**
2. **Create Method calc the factorial of number , take a number from user and use method to calc Factorial of this number.**
3. **Create method calc the power of two numbers , take two numbers from user and use method**  **(2^3) = 8.**
4. **Create method check if number is prime or not prime number , take a number from user and use method to check if prime or not.**
5. **Create methods to count number of prime numbers number user entered in program may be 10**

count the prime numbers from 10 to 2(less than 10).

for Example (10) prime numbers less than 10(2 , 3 , 5 , 7) count :4.

1. **You have an elements of array and need to get the Max distance between any to prime number.**

# Lap4

1. **Create Method to Swap values between two numbers**  **x = 10 , y = 20 Get x = 20 and y =10.**
2. **Create Method and use an array as a parameter in this Method.**
3. **Create Class Employee(id ,name ,age ,salary) use Getter & Setter age by default =30 , salary (if <6000) salary 6000. And print Data of Employee.**
4. **Create Class Bank Account ( id, name ,balance) , Create Two Method Deposit & Withdraw.**
5. **Create Class Complex Number (4+5j) using Getter & Setter and print data.**

# Lap5&6&7

1. **Use Class Complex as a struct.**
2. **Class Complex Number get Count of object & use operator overloading .**
3. **Fraction Number use operating overloading and simplify the result.**
4. **Class Person (id , name , age ). Employee : Person(Salary**  **6000 )**

Student : Person (grade 60).and use override on method print .

person p1 = new (employee  create object employee , student  create object student).

1. **Create classes (shape , rectangle , triangle , square , circle ) use inheritance and override to CalcArea() of all of this Shapes.**
2. **Use Singleton design pattern**  **Create one only object from the class.**
3. **Class Duration (int h ,int m ,int s ) , use operator overloading of 2 durations and when the number of minute <60 Calc it in Hour and the same of second .(1h: 75m:10s)****(2h : 15 m : 10s).**

(2h:10m:65s)(2h : 11m : 5s).and print the duration.