DAA

Analysis Algorithm

Algorithm has 3 steps:

(i) Problem defination

(ii) Procedure (Mathematical defination)

(iii) Find Result

Role :- Problem Defination:-

A firm want to employee the people for management and lab jobs for management the Person must be graduated bur Post graduation no experience is required general experience is 05 years to apply.

For rural sindh, balochistan, NWFP and FATA 03 years experience is required.

Discrete analysis:-

$E = \{M, F\}$ → set of gender (male, female)

$J = \{Mat, LB\}$, $Deg = \{MBA, PhD\}$ → degree Programme

maps job specific department

$level = \{G, PG\}$ → education level (Graduate, Post-Graduate)

→ Data of completion of Degree date of birth

$Exp = \{0, KF>\}$

↓

levels to range

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Algo:-

Take correct data()

Process data()

Give output.

① A set of employees in a company, we want to define some properties, for jobs. For jobs person must be graduated as Manager, Engineer, and analyst.

Discrete analysis:-

$S = \{E_1, E_2 \dots E_n\}$

$D = \{M, F\}$

$P = \{Manager, Engineer, Analyst\}$

$Sal = \{0, 10000\}$

$E = \{Yes, No\}$

---

② A set of Students in a class learning some specific subjects. For learning these subjects their ages should be specific.

Discrete analysis:-

$S = \{S_1, S_2 \dots S_n\}$

$C = \{Math, Science, English\}$

$G_n = \{M, F\}$

$Grades = \{0, 100\}$

$Age = \{0, 30\}$

$E = \{Yes, no\}$

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(3) A set of cars by manufactures. For manufacturing some features must occur.

Discrete analysis:-

$C = \{car_1, car_2 \dots - car_n\}$

$T = \{Sedan, Suv, Truck\}$

$M = \{Toyota, Ford, BMW, Tesla\}$

$Y = \{1990, 2022\}$

price $\leftarrow P = \{0, 500000\}$

$L = \{Yes, no\}$

(4) A set of fruits with some Properties, we find the set of all red fruits.

Discrete analysis:-

$F = \{Apple, Orange, Banana, cherry, Grape\}$

$C = \{Red, Orange, Green, Purple\}$

$R = \{F \in F \mid color(F) = "Red"\}$

$L = \{Yes, no\}$

(5) A set of animals in Jungle we find the set of all herbivores and mamals.

Discrete analysis:-

A = { lion, Tiger, Elephant, Giraffe, zebra }

D = { Mammal, Reptile, Birds, Fish }

H = { Herbivores, Carnivore, Omnivores }

MAH = { ACA | classification (A) = "Mammal"
∧ diet (A) = "Herbivores" }

R = { Elephant,

. .

Java

Java is a computer language.

characteristics of code in C.

1- Readability
2- Writeability
3- Extendability
4- Orthoability

Syntax:-

```
Public class first {
Public static void main (string[]args){
    int a = 9;
    int b = 10;
    int c = 0;
     c = a+b
     System.out.println("sum is"+c);
    }
    //end main
    }
```

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①
```
public class Main{
    public Static void main(String[] a
        System.out.Println("Hello World");
    }
}
```

② Sum two number

```
import java.util.Scanner;
    public class SumProgram {
Public Static void main(String[]
    {
    Scanner input = new Scanner(
    System.out.print("Enter first num
    int num1 = input.nextInt();

    System.out.print("Enter Second nu
    int num2 = input.nextInt();

    int sum = num1 + num2;
System.out.println("The Sum is:
                    sum);
    }
    }
```

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Types of algo
Relation of algo with microprocessor
" " with OS
hard & soft real

Pointers-

No variable can be attached which any symbol other than underscore.

1 GHz = Billion

→ Algo are two types
  → Hungry
  → Greedy

→ insertion sort is a hungry sort.
→ Bubble sort not hungry nor greedy path selection.
→ In greedy we have select the most optional path.
→ In hungry approach steps are reduced.
→ But force the work is done at any cost.
→ Divide and conquer algo which divide the program.

(hard real time & soft real time algo)

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Types of algorithms:-

1- Brute Force Algorithm
2- Recursive Algorithm
(a) Divide and conquer Algorithm
(b) Dynamic Programming Algorithm
(c) Greedy Algorithm
(d) Backtracking Algorithm
3- Randomized Algorithm
4- Sorting Algorithm
5- Searching Algorithm
6- Hashing Algorithm

Brute Force Algorithm:-

→ Straight forward approach to problem

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