**Pakistan School, Kingdom of Bahrain**

**E- Support and Learning Material / Session 2020-2021**

**10th Computer Science Chapter 1 Programming Techniques**

**Lectures week1**

**Objectives:** **Students will be able to define and analyze the problem**

**Students will be able to plan the solution of a problem**

**Students will be able to define the canded solutions of problem**

**Related Questions**

**Q. steps to define the problem?**

* Carefully read the problem to understand what it tells
* Find out what the problem is ask to do
* What information can be obtain from the problem
* What is required to calculate as the solution

**Q.how we can analyze the problem?**

* Is it possible to solve the problem on computer?
* What is to be done to find the solution of the problem?
* Proper sequence of steps to solve the problem?
* What is input and what is output?
* How many solutions are possible?
* Which is best and why is best?
* How solution will be implemented?

**Q.how to plan a solution for problem?**

* **Talk to right person**
* **Focus on talking about the problem with product or service**
* **Stay calm and reasonable.**
* **Explain problem in detail**
* **Tell them what outcome you required**
* **Expect the questions**
* **Listen their response, ask for time to consider it if you need to**

**Q. what is candid solution?**

* All possible solution of a problem that produce correct result are known as candid solution
* Fir this programmer has to look towards different methods

**Q.how we can select the best solution?**

 **Best solution is based on the following**

* **Speed:** the selected solution of the problem should be efficient.it means when the solutions implemented in programming language, the program should run fast.
* **Cost**: it should provide a cost-effective way of implementation.
* **Complexity:** it should not be complicated, it should contain minimum numbers of instruction/simple steps

**Q. Define Computer?**

**Ans**: A computer is a general-purpose electronic machine invented to help people to solve various problems. Computer must be programmed by human being to perform various tasks.varios- techniques are used for solving problems on computer.

**Q. Define algorithm?**

Step by step procedure to solve the problem is called algorithm.it is very easy to understand and follow.

**Q. what is flowchart?**

Flow chart is the diagrammatic representation of algorithm .it describe that operations are required to solve a given problem

**Q. What are the advantages of using flowcharts?**

Flowchart illustrates the sequence of operations to be performed to solve a problem in the form of diagram.

Computer programmers draw flowcharts before writing computer programs.

Flowchart provides an easy way to analyze and find solutions of problems.

Flowcharts is very helpful in communicating the problem solving to other people

**Home work**

Search on YouTube the importance of problem understanding and write a note on it

**Objectives:** **Students will be able to define algorithm**

**Students will be able to describe the role of algorithm in problem solving**

**Students will be able to describe the criteria for measuring efficiency of algorithms**

**Students will be able to write the algorithms for problem**

**Related questions**

**Q. define algorithm?**

* Step by step procedure, method, techniques, or plan to solve a problem is called algorithm
* It is very easy to understand and follow.

**Q. Role of algorithm in problem solving?**

* Algorithm is a first step for developing a computer program
* Computer programming is the process of talking and algorithm and coding it in programming language
* Algorithms plays very import role in computer programming for understanding of problem and solution methods

**Q. write algorithm for sum, product and average of five numbers?**

Step1: start

Let the five numbers be A=5,B=10,C=20,D=30,E=40

Step2: FIND sum (SUM)

SUM=A+B+C+D+E

Step3: FIND the product (PROD)

PROD=A\*B\*C\*D\*E

Step4: FIND the average (AVG)

AVG=SUM/5

Step5: output SUM, PROD, AVG

Step6: Stop

**Assignment #1**

Write the algorithm for factorial of number

**Assignment #2**

Write algorithm for temperature from Fahrenheit to Celsius

Hint: use the formula C=5/9(F-32)

**Home work**

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| 2 Write algorithm for larger of 2 numbers |

1. Write algorithm for pass or fail of a students on the basis of marks