

Day 1: Intro to Programming

1.Hello World

– Write a Program to Print “Hello World” on the console.

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
    printf("Hello world!\n");
    return 0;
}
```

2.Math Example

– Using mathematical functions explicitly , write a program to print the sum of two numbers.

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
    printf(1+2);
}
```

3.Variable Example

-Write a program to [print a message with a variable value in-line](#).

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int a;
    a = 10;
    printf("I am in %dth Standard",a);
    return 0;
}
```

4.User Input

-Write a [program to take user input and write a message displaying the input in-line](#).

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
    float a;
    printf("Enter your height in Centimeter\n==>");
    scanf("%f",&a);
    printf("\n I am in %f inches tall",a/2.54);
    return 0;
}
```

```
}
```

5.Commenting

-Some commenting guidelines ,more will be discussed in class.

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  /* Comments Can be Paragraphs
4  Hi , this is a sample program for Summer IoT 2019
5  */
6  int main()
7  {
8      int a,b;
9      int temp;
10     a = 10;
11     b = 20;
12     temp = a*a;
13     if (b>temp)
14     {
15         printf("Squares Overload");
16     }
17     else
18     {
19         printf("Circles Win");
20     }
21     return 0;
22 }
23
```

// Comments can also be in-line
// Align all comments for readability
// Do not comment everything.
//Indicate function of temporary variables , here temp will store result.
//Store square of a in temp
//Check if square is greater than b.
//Print if b is greater
//You can use short hand for comments , as long as its understandable.
//Print if a^2 is greater

6.Conditional Control Flow – IF Statement

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  /*
4  This Program verifies your age.
5  */
6  int main()
7  {
8      int a;
9      printf("Enter Your Age==>");
10     scanf("%d",&a);
11
12     if (a>18)
13     {
14         printf("You are allowed to enter.");
15     }
16     else
17     {
18         printf("STOP");
19     }
20     return 0;
21 }
22
```

// Comments can also be in-line
// Align all comments for readability
//Variable to store age
//
//Scan input
// If age is above 18 , allow entry
//
// Else stop , else if can also be used.
//
//Return 0 to indicate successful execution

7.Loop Control Flow – WHILE Statement/DO-WHILE

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  /*
4  This Program verifies your age.
5  */
6  int main()
7  {
8      int a,i;
9      i=0;
10     printf("Enter Max Value\n");
11     scanf("%d",&a);
12     while(i < a)
13     {
14         printf("\n==%d==",i+1);
15         i++;
16     }
17     return 0;
18 }
19
```

// Comments can also be in-line
// Align all comments for readability
// Variable to store age , temp counter variable
// Reset Counter
// When i is smaller than entered number
// Print Numbers from 1 up to entered max
// Increment i
// Return 0 to indicate successful execution

8. Loop Control Flow – FOR Statement

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  /*
4   This Program verifies your age.
5   */
6  int main()
7  {
8      int a;
9      printf("Enter Max Value\n");
10     scanf("%d",&a);
11     for(int i=0; i<a ;i++)
12     {
13         printf("\n==&d==",i+1);
14     }
15     return 0;
16 }
17
```

// Comments can also be in-line
// Align all comments for readability
// Variable to store age , temp counter variable

// When i is smaller than entered number

// Print Numbers from 1 up to entered max

// Return 0 to indicate successful execution

9. SWITCH-CASE Statement

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  /*
4   This Program uses Switch-Case and Functions.
5   */
6  void select(int x){
7      int b;
8      switch(x){
9          case 1:
10             printf("\nAn Apple a Day , Keeps the doctor away\n");
11             b=scan();
12             select(b);
13             break;
14          case 2:
15             printf("\nApples to Oranges , eh?\n");
16             b=scan();
17             select(b);
18             break;
19          case 0:
20             break;
21          default:
22             printf("\nYou seem out of focus today.Try Again\n");
23             b=scan();
24             select(b);
25             break;
26      }}
27
28  int scan(){
29      int a;
30      printf("\n\nChoose from following:\n1.Apples\n2.Oranges\n0.Exit\n");
31      scanf("%d",&a);
32      return a;
33  }
34
35  int main()
36  {
37      int a;
38      a = scan();
39      select (a);
40      return 0;
41  }
42
```

//Function to print selection
//Temporary Variable for Re-entry
//Define Switch variable
//Use cases to control selection flow of program

//Scan Again
//Endless Input Loop - Recursion - Function calling itself

// Print Message

// Case to Exit Loop

//In case input is out of range
//Scan Again

//Function to Scan Input - Return Type int
//This variable has scope only in this code block
//Take User Input

// Comments can also be in-line
// Align all comments for readability
// Variable to store age , temp counter variable
// Use function to return value to variable

// Return 0 to indicate successful execution