**ASSINGMENT OF SOFTWARE-ENGINEERING**

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**CLASS**

BS-CS 5TH (FALL 2017)



**AIR-UNIVERSITY |MULTAN-CAMPUS|**

**Buggy Code Solution -**

#include<iostream>

#include<conio.h>

using namespace std;

int main()

{

cout << "Solution For Buggy Code"

<< endl;

cout << "This program will crash"

<< endl;

// initialize the sum with the 0

int nSum=0; //MISTAKE CORRECTED.

int nNums;

// accumulate input numbers until the

// user enteres a negative number, then

// return the average

nNums = 0;

while(true)

{ // enter another number to add

int nValue;

cout << "Enter another number:";

cin >> nValue;

cout << endl;

// if the input number is negative...

if(nValue < 0)

{

// ... then output the average

cout << "Average is: "

<< nSum/nNums

<< endl;

break;

}

// not negative, add the value to

// the accumulator

// incrementing for getting nNums to find average

nNums++;

nSum += nValue;

}

cin.ignore(10000, '\n');

return 0;

}

**­Programming Mistake Solution –**

|  |
| --- |
| **//1: Undeclared Variables:** |
|  | #include<iostream> |
|  | using namespace std; |
|  | int main() |
|  | { |
|  | int x; |
|  | cin>>x; |
|  | cout<<x; |
|  | } |
|  |  |
|  | //"Huh? Why do I get an error?" |
|  | **Ans= The variable x is not inintialize.** |
|  |  |
|  | **2:// Uninitialized variables:** |
|  | #include<iostream> |
|  | using namespace std; |
|  | int main () |
|  | { |
|  | int count=40<<endl; |
|  | while(count<100) |
|  | { |
|  |  |
|  | cout<<count; |
|  | count++; |
|  | } |
|  | return 0; |
|  | } |
|  |  |
|  | //"Why doesn't my program enter the while loop?" |
|  | **Ans= You didnot initialise the count so that is why it was not entering the while loop.** |
|  |  |
|  | **//3: Setting a variable to an uninitialized value:** |
|  | #include<iostream> |
|  | using namespace std; |
|  | int main() |
|  | { |
|  | int a, b; |
|  | int sum=0; |
|  | cout<<"Enter two numbers to add: "; |
|  | cin>>a>>b; |
|  | sum=a+b; |
|  | cout<<"The sum is: "<<sum; |
|  | } |
|  | //When Run: |
|  | //Enter two numbers to add: 1 3 |
|  | //The sum is: -1393 |
|  |  |
|  | //"What's wrong with my program?" |
|  | **Ans= The sum were used early now it will produce the write answer.** |
|  | **//4: Using a single equal sign to check equality:** |
|  | #include<iostream> |
|  | using namespace std; |
|  | int main() |
|  | { |
|  | char x='Y'; |
|  | while(x=='Y' || x=='y') |
|  | { |
|  | //... |
|  | cout<<"Continue? (Y/N)"; |
|  | cin>>x; |
|  | } |
|  | return 0; |
|  | } |
|  |  |
|  | //"Why doesn't my loop ever end?" |
|  | **Ans= Because the operatoe used was not correct you used assignment operator instead of equal sign** |
|  |  |
|  | **//5: Undeclared Functions:** |
|  | #include<iostream> |
|  | using namespace std; |
|  | void menu(); |
|  | int main() |
|  | { |
|  | menu(); |
|  | return 0; |
|  | } |
|  | void menu() |
|  | { |
|  | cout<<"hello"; |
|  | } |
|  |  |
|  | //"Why do I get an error about menu being unknown?" |
|  | **Ans= you were getting the error because you didn't declare the function before main** |
|  | **//6: Extra Semicolons:** |
|  | #include<iostream> |
|  | using namespace std; |
|  | int main() |
|  | { |
|  | for(int x=0; x<100; x++) |
|  | cout<<x<<endl; |
|  | } |
|  | //"Why does it output 100?" |
|  | **Ans= No need for the semi colon after the for loop** |
|  | **//7: Overstepping array boundaries** |
|  | #include <iostream> |
|  | using namespace std; |
|  | int main() |
|  | { |
|  | int array[10]; |
|  | //... |
|  | for(int x=0; x<=9; x++) |
|  | cout<<array[x]<<endl; |
|  | } |
|  | //"Why doesn't it output the correct values?" |
|  | **Ans= An Array index always start with zero** |
|  |  |
|  | **//8: Integer division** |
|  | #include <iostream> |
|  | using namespace std; |
|  | int main() |
|  | { |
|  | //For example: |
|  | double half = 1/2; |
|  | cout<<half; |
|  | float half1 = 1.0/2.0; |
|  | cout<<half1; |
|  | } |
|  | //This code sets half to 0 not 0.5! Why? |
|  | **Ans= Because 1 and 2 are integer constants.** |
|  |  |
|  |  |
|  | **//9: Variable Name Styles** |
|  |  |
|  | //Take a look at the below program. Can you see anything wrong? |
|  |  |
|  | #include <stdio.h> |
|  | #include <string.h> |
|  |  |
|  | main() |
|  | { |
|  | char CatName[20] = "fluffy"; |
|  | char dogName[20] = "fido"; |
|  | char rat\_Name[20] = "fester"; |
|  | int Catage = 3; |
|  | int dogs\_age = 4; |
|  | int ratage = 1; |
|  | char myPet[20]; |
|  | int itsAge; |
|  |  |
|  | strcpy(myPet,rat\_Name); |
|  | itsAge = ratage; |
|  | printf("My pet is %s\n",myPet); |
|  | } |
|  |  |
|  | //Besides the obviously bizarre choice of having a pet rat, do you notice anything? |
|  | **Ans= It will print rat\_Name because of strcpy** |
|  |  |
|  | **//10 Misusing the && and || operators:** |
|  | #include <iostream> |
|  | using namespace std; |
|  | int main() |
|  | { |
|  | int value; |
|  | do |
|  | { |
|  | //... |
|  | value=10; |
|  | cout<<"hello"; |
|  | }while(!(value==10) && !(value==20)) |
|  | } |
|  |  |
|  | //"Huh? Even though value is 10 the program loops. Why?" |

**Ans = For checking both the conditions we have to use && operator.**

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