How to Include Source Code in LaTeX

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List of Code

Code 1: Sample example of C programming language

```c
//=================================================
//sample example of C programming language
//=================================================

#include <stdio.h>

void main()
{
  int num;

  printf("Enter a number: \n");
  scanf("%d", &num);
  if (num > 0)
  printf("%d a positive number \n", num);
  else if (num < 0)
  printf("%d a negative number \n", num);
  else
  printf("0 is neither positive nor negative");
}

//=================================================
```

Listing 1

Code 2: Sample example of C programming language

```c
//=============================================
//sample example of C programming language
//=============================================

#include <stdio.h>

void main()
{
    int num;

    printf("Enter a number: \n");
    scanf("%d", &num);
    if (num > 0)
        printf("%d a positive number \n", num);
    else if (num < 0)
        printf("%d a negative number \n", num);
    else
        printf("0 is neither positive nor negative");
}

//=====================================================
```

Code 3: Sample example of C++ programming language

```cpp
//*************************************************************
//          sample example of C++ programming language
//*************************************************************

#include <iostream>
#include <cmath>
using namespace std;

int main() {

    float a, b, c, x1, x2, discriminant, realPart, imaginaryPart;
    cout << "Enter coefficients a, b and c: ";
    cin >> a >> b >> c;
    discriminant = b*b - 4*a*c;

    if (discriminant > 0) {
        x1 = (-b + sqrt(discriminant)) / (2*a);
        x2 = (-b - sqrt(discriminant)) / (2*a);
        cout << "Roots are real and different." << endl;
        cout << "x1 = " << x1 << endl;
        cout << "x2 = " << x2 << endl;
    }

    else if (discriminant == 0) {
        cout << "Roots are real and same." << endl;
        x1 = (-b + sqrt(discriminant)) / (2*a);
        cout << "x1 = x2 =" << x1 << endl;
    }

    else {
        realPart = -b/(2*a);
        imaginaryPart =sqrt(-discriminant)/(2*a);
        cout << "Roots are complex and different."  << endl;
        cout << "x1 = " << realPart << "+" << imaginaryPart << "i" << endl;
        cout << "x2 = " << realPart << "-" << imaginaryPart << "i" << endl;
    }

    return 0;
}

//*************************************************************
```

Code 4: Sample example of Matlab programming language

```
%=====================================================================
%       sample example of Matlab programming language
%=====================================================================
clear all;
clc;
     data = xlsread('Resultraw_nonorm_BC_newfit.xls','Data','A1:L70')
     conc =[];
     xo=data(:,4);
     m=data(:,3);
     T=data(:,12);
     xoo=xo(1)
     X_Diff_B=data(:,7);
     delx_B=X_Diff_B-xoo;
     delx2_B=delx_B.^2;
     X2_B=xo.^2;
     X_Diff2_B=X_Diff_B.^2;
     M2_B=m.^2;

figure1=figure( 'Name', 'm2vst' );
axes1 = axes('Parent',figure1,'FontWeight','bold','FontSize',12);
box(axes1,'on');
grid(axes1,'on');
hold(axes1,'all');
plot(T,M2_B,'b*')

xlabel( '$t$(s)','FontWeight','bold','FontSize',14,'fontname','times','
    Interpreter','Latex' );
ylabel( '$m^2(\mathrm{cm^2}\ \,)$','FontWeight','bold','FontSize',14,'
    fontname','times','Interpreter','Latex');
title('$m^2$ vs $t$','FontWeight','bold','FontSize',14,'fontname','times','
    Interpreter','Latex');
grid on
plotname1=['m^2 vs t plot Bluechannel method.png'];
saveas(gcf,plotname1);
hold off
plot(T,xo,'b*')

xlabel( '$t$(s)','FontWeight','bold','FontSize',14,'fontname','times','
    Interpreter','Latex' );
ylabel( '$x_0(\mathrm{cm}\ )$','FontWeight','bold','FontSize',14,'fontname'
    ,'times','Interpreter','Latex');
title('$x_0$ vs $t$','FontWeight','bold','FontSize',14,'fontname','times','
    Interpreter','Latex');
grid on
plotname2=['x_0 vs t plot Bluechannel method.png'];
saveas(gcf,plotname2);
%=====================================================================
```

Code 5: Sample example of Python programming language

```
#=================================================================
#       sample example of Python programming language
#=================================================================
import os
import platform

global studentlist
studentlist = ["jason yap", "Jake ramos", "James Pascual", "Jester Paglinga
    "]

def studentmanagement():

  print("\n++++++ Welcome to Evanz College Student Management System
      ++++++\n")
  print("[Choice 1: Showing the List of Student]")
  print("[Choice 2: Add New Student]")
  print("]Choice 3: Searching Student]")
  print("[Choice 4: Deleting a Student]\n")

  try:
    x = int(input("Enter a choice: "))
  except ValueError:
    exit("\nHy! This is not a Number")
  else:
    print("\n")

  if(x==1):
    print("Student List\n")
    for students in studentlist:
      print("++ {} ++".format(students))

  elif(x==2):
    studentnew = input("Enter New Student: ")
    if(studentnew in studentlist):
      print("\nThis Student {} Already In The Table".format(studentnew))
    else:
      studentlist.append(studentnew)
      print("\n++ New Student {} Added Successfully ++\n".format(studentnew
          ))
      for students in studentlist:
        print("++ {} ++".format(students))

  elif(x==3):
    studentsearching = input("Choose Student Name To Search: ")
    if(studentsearching in studentlist):
      print("\n++ There is a Record Found of this Student {} ++".format(
          studentsearching))
    else:
      print("\n++ There is No Record Found Of this Student {} ++".format(
          studentsearching))

  elif(x==4):
    studentdelete = input("Choose a Student Name To Delete: ")
    if(studentdelete in studentlist):
      studentlist.remove(studentdelete)
```

Code 6: Sample example of Markdown

```
# LaTeX (MS Windows and Linux Mint/Ubuntu)

[Youtube install on windows](https://www.youtube.com/watch?v=gH7UgkWi7Hk&t=152s)

## Explore

Check first if all is prepared (see below 'preparing' for Linux or Windows).

When ready:

- clone this beginners project into your computer repos folder with Git: ‘git clone https://github.com/openSource4Brokers/LaTeX.git‘
- move into the new LaTeX directory, ‘cd LaTeX‘ (case sensitive on Linux!)
- open the project with vscode: ‘code .‘
- Or explore the *.tex files with Texmaker

## Preparing for Linux Mint

- [Install Git](https://git-scm.com/download/linux): ‘sudo apt-get install git‘
- [Install latexmk](https://www.ctan.org/pkg/latexmk/): ‘sudo apt install latexmk‘

### Preparing Texmaker

Download from the website the latest package (*.deb) for your Ubuntu/Mint installation or search for texmaker within the 'safe' program manager in Ubuntu/Mint (mostly this will install an older version of Texmaker):

- [Texmaker](https://www.xm1math.net/texmaker/)

### Preparing vscode

Same as for Texmaker. If you know what you are doing, get the latest (*.deb) or install via Program Manager

- [Visual Studio Code](https://code.visualstudio.com/)

#### VSC Extensions

- [Material Icon Theme](https://marketplace.visualstudio.com/items?itemName=PKief.material-icon-theme)
- [LaTeX Workshop](https://github.com/James-Yu/LaTeX-Workshop)

## Preparing for Windows

Get (*.exe) and install Git, Texmaker and/or vscode

- [Git](https://git-scm.com/)
- [Texmaker](https://www.xm1math.net/texmaker/)
- [Visual Studio Code](https://code.visualstudio.com/)

Install choco:

- [Chocolatey](https://chocolatey.org/)
```

```
49
50 With choco, install pandoc and all tools (beware! This takes a while):
51
52 - [Pandoc](https://pandoc.org/): `choco install pandoc`
53 - [rsvg-convert](https://wiki.gnome.org/Projects/LibRsvg): `choco install
       rsvg-convert`
54 - [Python](https://www.python.org/): `choco install python`
55 - [MikTex](https://miktex.org/): `choco install miktex`
56 - [Or all in one command line](https://pandoc.org/installing.html): `choco
       install pandoc rsvg-convert python miktex`
57
58 ### VSC Extensions on Windows
59
60 On Windows, the vsc LaTeX Workshop extension needs Perl
61
62 - [ActivePerl for LaTeX Workshop](https://www.activestate.com/products/perl
       /downloads/)
63
64 The extensions used:
65
66 - [Material Icon Theme](https://marketplace.visualstudio.com/items?itemName
       =PKief.material-icon-theme)
67 - [LaTeX Workshop](https://github.com/James-Yu/LaTeX-Workshop)
68
69 At this moment (august 2020) LaTeX Workshop pdf view does not work and you
       can get around with extension:
70
71 - [vscode-pdf](https://github.com/tomoki1207/vscode-pdfviewer)
72
73  This will do the job but LaTeX Workshop will complain with a warning about
        incompatibility with the vscode-pdf. Just ignore because it does work
       ... Remove or disable vscode-pdf later when LaTeX Workshop gets fixed
       for pdf view problem.
```