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General Tutorial Questions

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1 (General) Using the Editor to Write a Simple Program

1.1 Customizing the look and feel of jEdit

Task	OK
Gutter: Line Numbers On	
Text Area Font: 18 Point Courier New	
Tab Width=4 Indent Width =4	
Character Encoding: US-ASCII	
Backup: Save 99 backups, Backup: Frequency = 60 sec Backup: Directory: C:\backup	
Spit the screen to get 2 windows	

```
/* sdba.c simple program */
#include <stdio.h>
int main(void){
  int j, jon, jane;
  jon=1;
  for(j=0;j<5;j++){
    fprintf(stdout,"Hi...");
    jon++;
    jane+=jane+5*jon;
  }
return(0);
}
```

1.2 Using the gcc compiler

1.2.1 Enter the program (sdba.c) into your computer using jEdit

1.2.2 Compile, Link & Run the program. Make sure the program runs correctly.

1.2.3 Change the program and record the resulting error message below

	Change made	Error Message Received from Compiler
1		
2		
3		
4		
5		

1.3 Use the Debugger gdk to step through program

– Compile the program with the `-g` option

– Start the `gdb` debugger.

– Step through the program, display the value of `j`, `jon` and `jane`.at each step

When you have completed the work, ask the TA to check your work. Be prepared to demonstrate stepping through the program showing the value of all variables. Answer the questions of the TA. Once finished, please help other students.	**TA Stamp**

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2 (General) 1st Steps: Writing Commented or Pseudo-Code

2.1 Download joninlib.7z and decompress in c:\sdba

2.2 Pseudo-Code for the Falling Object

2.2.1 Copy the Commented Pseudo-Code from the slides

2.2.2 Compile, Link and Run your program

When you have completed the work, ask the TA to check your work. Be prepared to demonstrate compiling, linking and running your program.	**TA Stamp**

2.3 Commented Code for the Finding the Square Root of Two $\sqrt{2}$

2.3.1 Following the example of gravity, write Commented Pseudo-Code

2.3.2 Compile, Link and Run your program

When you have completed the work, ask the TA to check your work. Be prepared to demonstrate compiling, linking and running your program.	**TA Stamp**

2.4 Commented Code for Calculating the Height and Location of an Image

2.4.1 Following the example of gravity, write Commented Pseudo-Code

2.4.2 Compile, Link and Run your program

When you have completed the work, ask the TA to check your work. Be prepared to demonstrate compiling, linking and running your program.	**TA Stamp**

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3 (General) Variables: Declaring, Initializing, Using

3.1 Which of the following variable declarations are valid?

	OK?		OK?		OK?
`double jon;`	O	`float ABC;`		`int dogs2;`	
`double %c;`		`float int;`		`long cat_hi;`	
`char Chong;`		`int 2cat;`		`float nMan;`	

3.2 Which of the following assignments are valid, dangerous or wrong? Why?

	OK?		OK?		OK?
`ann=1956`	X (no ;)	`ann=sue;`		`ann=jim;`	
`sue=2012;`		`jim=ann;`		`sue=ann;`	
`ann = 24 hours;`		`2011=ann;`		`jim;`	

3.3 What is strange about the following pieces of code? Will they give a warning or error message? What warning or error will they give?

	Problem? Error Message?	Corrected Code

`int main(void){`
`  int jay;`
`  double fred;`
`  fred=6.2;`
`  jay=fred;`
`  return(0);`
`}`		

`int main(void){`
`  int jay;`
`  long paul;`
`  paul/=jay;`
`  return(0);`
`}`		

NOTE: `paul/=jay;` means `paul = paul/jay;`

When you have completed the work, ask the TA to check your work. Be prepared to demonstrate compiling, linking and running your program.	TA Stamp

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4 (General) Pointers. Consider the following code:

```
 1:#include <stdio.h>
 2:int main(void){
 3:  int fred, barney, wilma;
 4:  int *pebbles, *bambam;
 5:  int **dino;
 6:  fred = 1;
 7:  barney = 2;
 8:  wilma = 3;
 9:  pebbles = &fred;
10:  bambam = &barney;
11:  dino = &bambam;
12:  continue;
13:  return(0);
14:}
```

4.1 (before class) Draw a VP diagram for the code.

4.2 (before class) What is the value of the following expressions?

a) *pebbles=	b) bambam=	c) *dino=	d) wilma + *pebbles =

4.3 (before class) What happens if we add the following at line 12?

i) *bambam = *pebbles;
ii) bambam = pebbles;
iii) *dino = &wilma;

(Either give the answer or draw a VP diagram on the back of this page)

4.4 (in class) Which assignments give errors or warnings? What message?

a) fred = &pebbles;
b) pebbles = &fred;
c) pebbles = 5;
d) fred = 5;
e) dino = 5;
f) *dino = 5;
g) **dino = 5;
h) *dino = *pebbles;
i)*dino = pebbles;
j) *dino = &pebbles;

(Remember to test on a computer)

```
int main(void){
  int fred, barney, wilma;
  int *pebbles, *bambam;
  int **dino;
/* Add code to test here */
return(0);}
```