

AP Computer Science A- Summer Projects

Welcome to AP Computer Science class. I hope you are going to have a lot of fun programming with computers this Fall. The goal of the Summer Projects is to give you a glimpse into what is in store for you. I hope you will have a lot of fun doing the activities given below. At no point do I want you to get frustrated. Enjoy and explore! Remember we have the entire year to fix our mistakes, fine tune our skills and I will be with you to help you along.

1) Visit <http://www.greenteapress.com/thinkapjava/>

How to Think like a Computer Scientist. This is an excellent introduction to JAVA. It is a free online book. Good explanations for simple concepts. Please read Chapters 1-3.

2) Write a solution to the problem given below. It is due on the 1st day of school.

Write a program to simulate a cash register change calculator. Allow the user to enter a purchase price of up to 100 dollars. Then determine the best change to give back for a \$100 bill. Print the results to the screen as below, with no zero results displayed. Note: ignore the existence of half-dollars, \$2 bills and \$50 bills.

Assume that the purchase price is a whole amount

a) For a purchase price of \$52 and a \$100 bill tendered,

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Your change is $47
2 $20 bill(s)
1 $5 bill(s)
3 $1 bill(s)
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b) For a purchase price of \$38 and a \$100 bill tendered,

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Your change is $62
3 $20 bill(s)
2 $1 bill(s)
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Notes:

1. You can write a program in **any** programming language or script that you are familiar.
2. I will accept a program that is handwritten if you do not have a compiler available.
3. If you are very familiar with a programming language that has a good graphical user interface, by all means bring out a cool looking project! I will have fun playing with it!

4. If you are not familiar with any programming language you can write a step by step set of instructions in English on how you would go about solving the problem.

3) Visit www.alice.org

Click on “Get Alice 2.0”

Click on the latest version and download it. (Note: *You do not really need to have the latest version. If you are having difficulties with the latest version feel free to download previous releases.*)

Download the zip file and unzip it.

You should have an Alice folder with two applications (Alice and Alice Slow and Steady)

Double click on Alice to run application.

Choose a Tutorial, (I like the Penguin one) and go through the tutorial.

Optional:

Could you create a storyboard like the tutorial? Work on one and bring it to school.

HAVE FUN!!!! AND A WONDERFUL SUMMER!