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| **Unit:** Basics | **Turn In List:** **1. Terms and 2. Pde for Zoog, history of the computer** |
| *“I will be able describe the major events leading to the evolution of computer technology.”* | |

**Computer History: How it all began.**

**Content Objectives:** Students will be able to site the major events leading to modern technologies related information and information processing. We will also explore custom functions (methods) in Processing.

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| **Starter Activity** |
| 1. Students will change the code so that the entire body moves with the mouse in proportion. 2. Students will color background and body parts to their own preference. 3. Students will add four elements either to the character or the background that are fitting for the scene. 4. Students will increase the dimensions of the canvas to a width height between 500-900 pixels.   What would your approach be for making more Zoogs?  void setup () {  size(500, 900);  }  void draw() {  //background(255);  zoog(mouseX, mouseY);  zoog(mouseX-75, mouseY);  zoog(mouseX+75, mouseY);  zoog(width/2, height/2);  zoog(int (random(width)), int (random(height)));  }  void zoog(int x, int y) {  ellipseMode(CENTER);  rectMode(CENTER);  // Body  stroke(0);  fill(255, 50, 50);  rect(x, y, 20, 100);  // Head  fill(#E8FC0A);  ellipse(x, y-60, 60, 60);  // Eyes  fill(255);  ellipse(x-18, y-60, 16, 32); //left  ellipse(x+18, y-60, 16, 32); //right  fill(0);  ellipse(x-18, y-60, 8, 8); //left  ellipse(x+18, y-60, 8, 8); //right  // Legs  stroke(0);  line(x-10, y+50, x-25, y+65); //left  line(x+10, y+50, x+25, y+65); //right  stroke(0);  line(x-10, y-10, x-25, y); //left  line(x+10, y-10, x+25, y); //right  } |

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| **Key Terms:** | |
| Vacuum Tube | 1st generation computer – 1940s would store information in a binary state (on/off) very expensive and did not last long. |
| Transistor | 2nd generation computer – It is a device that stores a state of on/off – not used by themselves, but in a collection. |
| Integrated Circuit | 3rd generation – Uses hundreds of transistors in one named chip. |
| Microprocessor | 4th generation – Packing thousands and millions of transistors in one chip. |
| Punch Card | First effort at programming. |
| Mainframe | Centralized large computer that feeds many clients or dumb terminals. |
| PC | Early 70s dream to have a computer in every home. |

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| **Coding Terms:** | |
| function | Is a group of lines of code that is given a name. |
| parameter | Values that enhance the functionality of the method. |
| Function call | Using the code within the function. |

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| **Assignment Tutorial (Setup and Class Demonstration):** |
| Students will create a visual timeline in a new 900 x 400 document spotlighting 8 key events in the history of computers using <http://en.wikipedia.org/wiki/History_of_the_computer> as a reference. Use a custom function for each event to place on the timeline. You will need to refer to the “text()” function and the “String()” class in Processing reference. Create 4 events above and 4 events below the timeline and include a title (see example below).  Macintosh HD:Users:kkapptie:Desktop:Screen Shot 2013-09-16 at 9.40.28 AM.png |

Notes (Points of interest, mistakes, lessons learned, web resources, and thoughts):

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| //Jonathan Su | Computer Timeline  //Sept. 15, 2020  boolean hover = false;  PFont font;  void setup () {  size(900, 400);  background(255);  font = loadFont("TsukuBRdGothic-Regular-40.vlw");  }  void draw () {  background(255);  textFont(font);  println(hover);  println(mouseX + " " + mouseY);  drawRef();  histEvent(100, 200, 100, 25, "Zuse Z3 (1941)", "World's first working programmable, fully automatic digital computer completed in Berlin in 1941 by Konrad Zuse.", true);  histEvent(200, 275, 150, 25, "Colossus Mark 1 (1944)", "Designed by British engineer Tommy Flowers and used to break Lorenz ciphers used by Nazis during World War II. Not made public until 1970s. ", false);  histEvent(300, 200, 110, 25, "IBM ASCC (1944)", "Also called the Harvard Mark 1, conceived by Harvard professor and designed/built by IBM. \n The IBM ASCC was a room-sized general-purpose calculator.", true);  histEvent(400, 275, 100, 25, "ENIAC (1946)", "The ENIAC was 1000 times faster than any previous computer because of its electronic (as opposed to electromachanical) technology.", false);  histEvent(500, 200, 150, 25, "Manchester Baby (1948)", "The SSEC produced the moon position tables used in early planning of the 1969 Apollo XII moon landing.", true);  histEvent(600, 275, 100, 25, "EDSAC (1949)", "EDSAC was built at Cambridge University using vacuum tubes and mercury delay lines for memory.", false);  histEvent(700, 200, 100, 25, "CSIRAC (1949)", "First in the world to play digital music, and Australia's first stored-memory computer.", true);  histEvent(740, 275, 100, 25, "EDSAC (1949)", "First computer built following Von Neumann's plan, built at Cambridge University. It could store programs internally rather than using switches.", false);  }  void drawRef() {  //Title Text  textSize(40);  textAlign(CENTER);  fill(255, 0, 0);  text("Historic Computer Systems", width/2, 65);  //Timeline  strokeWeight(5);  stroke(#CFE844);  line(100, 250, 800, 250);  //Descriptive Text  textSize(15);  text("Describes major computer systems in the 19th century and beyond. \n Jonathan Su | 2020", width/2, 110);  //Draw tick marks  for (int i=100; i<801; i+=50) {  line (i, height\*0.6-5, i, height\*0.6+5);  }  }  void histEvent (int x, int y, int w, int h, String title, String description, boolean top) {  //Detect the location of the mouse  hover = (mouseX > x && mouseX < x+w && mouseY > y && mouseY < y+h);  //Draw a rectangle  strokeWeight(1);  if (hover == true) {  fill(0, 255, 0);  } else {  fill(255);  }  stroke(#CFE844);  rect(x, y, w, h, 5);  //Draw the title for the rectangle, description  fill(0);  textSize(12);  textAlign(LEFT);  text(title, x+5, y+20);  textAlign(CENTER);  if (hover == true) {  text(description, width/2, 350);  }  //Draw the connecting line  stroke(0);  if (top == true) {  line(x+20, y+25, x+35, y+50);  } else {  line(x+20, y, x+35, y-25);  }  } |