Annotated Bibliography

Primary Sources

American Howitzers Shell German Forces Retreating near Carentan, France. 11 July 1944.
 National Archives, www.archives.gov/files/research/military/ww2/photos/images
 /ww2-101.jpg. Accessed 20 Jan. 2020.

 This is a black and white photograph, dated July 1944, of an American howitzer shelling
 German forces retreating near Carentan, France. This photograph was made available by
 the National Archives, which is widely regarded as a reliable source of historical records.
 This photograph was included in the Historical Context (Extraordinary Demands of War)
 section of the website to show how artillery was successfully used by Americans during
 World War II and why this triggered the need for firing tables.

Bartik, Jean Jennings. *Pioneer Programmer: Jean Jennings Bartik and the Computer That
 Changed the World*. Edited by Jon T. Rickman and Kim D. Todd, Truman State UP,
 2013.

 This book is an autobiography of Jean Bartik, a member of the ENIAC Six. This book is
 a credible source because it provides Bartik's first-hand account of how the ENIAC Six
 programmed the ENIAC. This information and a quote from Bartik was used in the
 Historical Context (When Women Were Computers) section of the website. Another
 quote from Bartik was included in the ENIAC Six (Hidden Figures) section of the
 website.

Betty Snyder Holberton. *Engineering and Technology History Wiki*, ethw.org/Betty_Holberton.
 Accessed 20 Jan. 2020.

 This is a sepia-tone photograph of Betty Holberton, one of the original ENIAC
 programmers. The source of this photograph is an organization dedicated to the history of
 technology and therefore can be considered a reputable source. In the website, this
 photograph was included in both the Thesis and The ENIAC Six (Programming Pioneers)
 sections to show how Betty Holberton looked during the time she was programming the
 ENIAC in the 1940s.

A Bookkeeping Bonanza! Computer History Museum, www.computerhistory.org/revolution/
 punched-cards/2/8. Accessed 20 Jan. 2020.

 This is a black and white photograph of punch-card operators working at the Baltimore
 Social Security office in 1937. The source of this photograph is the Computer History
 Museum, which is well-regarded as a credible source for artifacts relating to the
 computer revolution. This photograph was included in the Historical Context (When
 Women Were Computers) section of the website to show how there were gender barriers

in the computing field before World War II that prevented women from advancing to higher prestige and paying positions.

Close-up View of ENIAC Parts. *Fortune Magazine*, fortune.com/2014/09/18/walter-isaacson-the-women-of-eniac/. Accessed 20 Jan. 2020.

This is a black and white photograph taken in 1947 that shows a close-up view of the ENIAC parts. This photograph is made available by Fortune magazine, which is generally considered a trustworthy source. This photograph was used in The ENIAC Six (Programming Pioneers) section of the website to provide a better view of the intricate parts of the ENIAC and emphasize the difficulty associated with manually programming the ENIAC.

Eckert, J. P., Jr, et al. *Description of the ENIAC and Comments on Electronic Digital Computing Machines*. *National Archives*, catalog.archives.gov/id/24519335/1/public?contribution Type=transcription. Accessed 20 Jan. 2020.

This technical report provides an overview of the ENIAC before it was released to the public. The authors are credible because they include the people who conceived of and designed the ENIAC. An excerpt from this technical report was used in the Historical Context (Extraordinary Demands of War) section of the website to show how existing machines before the ENIAC could only solve a limited class of problems.

ENIAC and Its Women Programmers. 1947. *Pennsylvania University Archives & Records Center*, dla.library.upenn.edu/dla/archives/detail.html?id=ARCHIVES_20021126012. Accessed 20 Jan. 2020.

This black and white photograph captures two members of the ENIAC Six programming the ENIAC. This photograph is available in the University of Pennsylvania's digital image archives, which is a reliable source because the ENIAC was conceived and designed at the University of Pennsylvania. The photograph was included in The ENIAC Six (Programming Pioneers) section of the website to show the complexity involved with programming the ENIAC.

"ENIAC Computer." *Footage File*, www.footagefile.net/media.details.php?mediaID=10424. Accessed 9 May 2020.

This a black and white video of the ENIAC programmers adjusting switches and cables on the ENIAC to execute a program. This video appears to be a copy of the original file footage filmed in the 1940s. This video was used in The ENIAC Six (Programming Pioneers) section of the website to show how the women had to learn how to manually adjust the ENIAC's switches and cables for each new program.

ENIAC Programming Chart. *Columbia University*, www.columbia.edu/cu/computinghistory/
eniac-program.gif. Accessed 20 Jan. 2020.

This is a photograph of the programming chart for the ENIAC, including the wiring
necessary to run programs within the ENIAC. This photograph is made available by
Columbia University, which is considered a reliable source. This photograph was
included in The Historical Context (When Women Were Computers) sections of the
website to show the complexity involved with programming the ENIAC and provides
support that the ENIAC were programming pioneers.

Francis Bilas Spence. *TeknoPLOF*, www.teknoplof.com/tag/frances-bilas-spence/. Accessed 20
Jan. 2020.

This is a black and white photograph of Frances Spence, one of the original ENIAC
programmers. It is unclear if Teknoplof is a reliable source. In the website, this
photograph was included in both the Thesis and The ENIAC Six (Programming Pioneers)
sections to show how Frances Spence looked during the time she was programming the
ENIAC in the 1940s.

Four Members of the ENIAC Six Programming the ENIAC. *ENIAC Programmers Project*,
eniacprogrammers.org/. Accessed 22 Jan. 2020.

This is a black and white photograph of four members of the ENIAC Six. The
photograph was made available on the ENIAC Programmers Project website. This
ENIAC Programmers Project was founded by Kathy Kleiman, a historian that helped
publicize the work of the ENIAC Six. Therefore, this source is credible and trustworthy.
This photograph was included in the home page of the website.

Front View of 240mm Howitzer. 30 Jan. 1944. *National Archives*, www.archives.gov/files/
research/military/ww2/photos/images/ww2-93.jpg. Accessed 20 Jan. 2020.

This is a black and white photograph of 240 mm howitzer just before firing into
German-held territory. This photograph was made available by the National Archives,
which is widely regarded as a reliable source for primary sources. This photograph was
included in the Historical Context (Extraordinary Demands of War) section of the
website to show how artillery was successfully used by Americans during World War II
and why this triggered the need for firing tables.

IBM 701 Electronic Analytical Control Unit. *IBM*, www.ibm.com/ibm/history/exhibits/
701/701_intro.html. Accessed 20 Jan. 2020.

This is a black and white photograph of the IBM 701 electronic analytical control unit
taken in 1953. This photograph was made available by the IBM digital archives, which is
a trustworthy source of original images of IBM computers. This photograph was included
in the Shattering Technological Barriers section of the website to provide an example of
the early programmable computers that were inspired by the ENIAC Six's pioneering
work.

Jean Jennings Bartik. *Cornell University Library*, wit.library.cornell.edu/show.html?id=30.
      Accessed 20 Jan. 2020.

> This is a color photograph of Jean Bartik, a member of the ENIAC Six. The source of this
> photograph is Cornell University Library, which is a well-regarded and credible source.
> In the website, this photograph was included in both the Thesis and The ENIAC Six
> (Programming Pioneers) sections to show how Jean Bartik looked during the time she
> was programming the ENIAC in the 1940s.

Kathleen McNulty Mauchly Antonelli. *Cornell University Library*, wit.library.cornell.edu/
      show.html?id=39. Accessed 20 Jan. 2020.

> This is a black and white photograph of Kathleen Antonelli, a member of the ENIAC Six.
> The source of this photograph is Cornell University, which is a well-regarded and
> credible source. This photograph was included in both the Thesis and The ENIAC Six
> (Programming Pioneers) sections of the website to show how Kathleen Antonelli looked
> during the time she was programming the ENIAC in the 1940s.

Kennedy, T. R., Jr. "Electronic Computer Flashes Answers, May Speed Engineering." *The New
      York Times*, 14 Feb. 1946. *Computer History Museum*, www.computerhistory.org/
      revolution/birth-of-the-computer/4/78/323. Accessed 20 Jan. 2020.

> This newspaper article, published in February 1946, covers the U.S. Army's public
> announcement of the ENIAC project. The publisher of this article, *The New York Times*,
> has been considered the world's leading newspaper known for its excellent editorial staff.
> This suggests that the information in this article was researched and reliable at the time it
> was published. An excerpt from this article was included in The ENIAC Six (Hidden
> Figures) section of the website to provide support that the ENIAC Six were not
> mentioned in press releases.

Left Side of the ENIAC. *U.S. Army Research Laboratory*, ftp.arl.army.mil/ftp/historic-
      computers/gif/eniac5.gif. Accessed 20 Jan. 2020.

> This is a black and white photograph of the left side of the ENIAC. This image was
> available in the U.S. Army historic computer image archives, which is a reliable source
> because the ENIAC was sponsored by the U.S. Army. This photograph was included in
> The ENIAC Six (Programming Pioneers) section of the website to provide a visual of the
> large number of switches and cables that the ENIAC Six had to work with to program the
> ENIAC.

Mandel, Lois. "The Computer Girls." *Cosmopolitan*, Apr. 1967, thecomputerboys.com/
        wp-content/uploads/2011/06/cosmopolitan-april-1967-1-large.jpg. Accessed 20 Jan.
        2020.

        This is an excerpt from an article titled "The Computer Girls" that was published in the
        April 1967 edition of Cosmopolitan magazine. The author of this website was a former
        Professor at the University of Pennsylvania and is therefore considered a reliable source.
        An excerpt from this article was included in the Shattering the Glass Ceiling section of
        the website to provide information on how women continued to advance in programming
        during the late 1960s.

Mark I Computer at Harvard University. *Harvard University*, sites.harvard.edu/~chsi
        /markone/futurism.html. Accessed 20 Jan. 2020.

        This is a sepia-tone photograph of the Mark I computer taken at Harvard University
        around the early 1940s. This was taken in the early 1940s. This photograph was made
        available by Harvard University, which is a well-regarded and credible source of
        historical information. This photograph was included the Historical Context
        (Extraordinary Demands of War) section of the website to show how machines that
        preceded the ENIAC, like the Mark I computer could not be programmed to perform
        different calculations.

Maryln Meltzer and Another ENIAC Programmer Wiring the ENIAC. *Columbia University*,
        www.columbia.edu/cu/computinghistory/eniac.html. Accessed 20 Jan. 2020.

        This is a black and white photograph of Marlyn Meltzer and another ENIAC programmer
        wiring the ENIAC. This photograph was made available by Columbia University, which
        is a credible source of historical information. This photograph was used in The ENIAC
        Six (Programming Pioneers) section of the website to show the numerous switches and
        cables that had to be adjusted to run a program on the ENIAC.

Marlyn Wescoff Meltzer. *U.S. Army Research Laboratory*, ftp.arl.army.mil/ftp/historic-
        computers/gif/eniac4.gif. Accessed 20 Jan. 2020.

        This is a black and white photograph of Marlyn Meltzer, one of the original ENIAC
        programmers, programming the ENIAC. This image was available in the U.S. Army
        historic computer image archives, which is a reliable source because the ENIAC was
        sponsored by the U.S. Army. In the website, this photograph was included in both the
        Thesis and The ENIAC Six (Programming Pioneers) sections to show how Marlyn
        Meltzer looked during the time she was programming the ENIAC in the 1940s.

President Truman Meeting with the ENIAC Team. *U.S. Army Research Laboratory*,
    ftp.arl.army.mil/ftp/historic-computers/gif/eniac8.gif. Accessed 20 Jan. 2020.

    This is a black and white photograph showing President Truman meeting with members
    of the ENIAC team. This image was available in the U.S. Army historic computer image
    archives, which is a reliable source because the ENIAC was sponsored by the U.S. Army.
    This photograph was included in The ENIAC Six (Hidden Figures) section of the website
    to show how the ENIAC Six were excluded from publicity events even though they
    played a critical role in making the ENIAC work.

Ruth Lichterman Teitelbaum. *Cornell University Library*, wit.library.cornell.edu/
    show.html?id=59. Accessed 20 Jan. 2020.

    This is a black and white photograph of Ruth Teitelbaum, one of the original ENIAC
    programmers. This photograph was made available by the Cornell University Library,
    which is a well-regarded and credible source. In the website, this photograph was
    included in both the Thesis and The ENIAC Six (Programming Pioneers) sections to
    show how Ruth Teitelbaum looked during the time she was programming the ENIAC in
    the 1940s.

Ruth Teitelbaum and Marlyn Meltzer Programming the ENIAC. *Army Research Laboratory*,
    U.S. Army, ftp.arl.army.mil/ftp/historic-computers/gif/eniac4.gif. Accessed 20 Jan. 2020.

    This black and white photograph captures two of the ENIAC Six programming the
    ENIAC. The supporting detail indicated that this was a photograph of Ruth Teitelbaum
    and Marlyn Meltzer. This primary visual source was available in the U.S. Army historic
    computer image archives, which is a reliable source because the ENIAC was sponsored
    by the U.S. Army. The primary visual source was used in The ENIAC Six (Programming
    Pioneers) section of the website to show the complexity involved with programming the
    ENIAC.

Teletype Operator Using the Complex Number Calculator. *Computer History Museum*,
    www.computerhistory.org/revolution/birth-of-the-computer/4/85/341. Accessed 20 Jan.
    2020.

    This is a black and white photograph of a female teletype operator using a complex
    number calculator during the 1940s. The source of this photograph is the Computer
    History Museum, which is well-regarded as a credible source for artifacts relating to the
    computer revolution. This photograph was included in the Historical Context (When
    Women Were Computers) section of the website to show how women served as human
    computers during World War II.

Three programmers setting switches on the ENIAC. *Fortune Magazine*, fortune.com/2014/09/18/
walter-isaacson-the-women-of-eniac/. Accessed 20 Jan. 2020.

> This a black and white photograph of three original programmers setting switches on the
> ENIAC to execute a program. This photograph is made available by Fortune magazine,
> which is generally considered a trustworthy source. This photograph was used in The
> ENIAC Six (Programming Pioneers) section of the website to show how the women had to
> learn how to manually adjust the ENIAC's switches and cables for each new program.

Two Women Operating the UNIVAC 1103 Computer in the 1950s. *The New York Times
Magazine*, www.nytimes.com/2019/02/13/magazine/women-coding-computer-
programming.html. Accessed 20 Jan. 2020.

> This black and white photograph shows two women operating the UNIVAC 1103
> computer in the 1950s. This photograph was published in *The New York Times Magazine*,
> which is considered a trustworthy and reliable source. This photograph was included in
> the Shattering the Glass Ceiling section of the website to show how more women were
> able to advance in the computing field in the forty years after the ENIAC.

United States Army, Ballistic Research Laboratory. *The Production of Firing Tables for Cannon
Artillery*. By Elizabeth R. Dickinson. *Defense Technical Information Center*,
apps.dtic.mil/dtic/tr/fulltext/u2/826735.pdf. Accessed 20 Jan. 2020.

> This is a Ballistic Research Laboratory research report, dated November 1967, covering
> the production of firing tables for cannon artillery. This report was made available by the
> Defense Technical Information Center, which is a reliable source of information related
> to the BRL. An excerpt showing the complex computations required to complete a
> cannon firing table was included in the Historical Context (Extraordinary Demands of
> War) section of the website to provide information on the complex calculations involved
> with producing artillery firing tables.

Vannevar Bush's Differential Analyzer. *Computer History Museum*, Vannevar Bush's differential
analyzer. Accessed 20 Jan. 2020.

> This is a black and white photograph of Vannevar Bush's differential analyzer with a man
> in the background taken in the 1930s. The source of this photograph is the Computer
> History Museum, which is well-regarded as a credible source for artifacts relating to the
> computer revolution. This photograph was included the Historical Context (Extraordinary
> Demands of War) section of the website to show how machines that preceded the
> ENIAC, like the differential analyzer, could not be programmed to perform different
> calculations.

War Department, Office of the Chief of Engineers. *Work of the Engineer Department. National Aeronautics and Space Administration*, crgis.ndc.nasa.gov/crgis/images/2/2f/1940-08-01 _Work_of_the_Engineer_Department.pdf. Accessed 20 Jan. 2020.

    This is a 1940 report prepared by the Office of the Chief of Engineers of the War Department sets forth the typical positions and salaries of civilian employees. The source of this report is NASA, which is a reliable source of historical government records. An excerpt from this report was included in the Historical Context (When Women Were Computers) section of the website to show that human computers were assigned subprofessional, or lower-level, status in the U.S. Civil Service in the 1940s.

War Department Bureau of Public Relations. "Ordnance Department Develops All-Electronic Calculating Machine." 16 Feb. 1946, americanhistory.si.edu/comphist/pr1.pdf. Accessed 20 Jan. 2020.

    This press release document discloses to the public the development of the ENIAC by the U.S. Army for a secret project to perform ballistic calculations during World War II. The source is reliable because the War Department, through the U.S. Army, sponsored the development of the ENIAC for a secret World War II project prior to its release to the public. An excerpt from this document was included in The ENIAC Six (Hidden Figures) section of the website to provide evidence that the War Department did not publicly recognize the contributions of the women who helped program the ENIAC.

Woman and Man Operating an IBM 360 Model 65 Computer. 1965. *Computer History Museum*, www.computerhistory.org/revolution/mainframe-computers/7/161/565. Accessed 20 Jan. 2020.

    This is a color photograph of a woman and man operating an IBM 360 Model 65 computer. The source of this photograph is the Computer History Museum, which is well-regarded as a credible source for artifacts relating to the computer revolution. This photograph was included in the Shattering the Glass Ceiling section of the website to show how more women were able to advance in the computing field in the forty years after the ENIAC.

Woman and Man Operating the IBM System/360. 1953. *IBM*, www.ibm.com/ibm/history/ibm100/ us/en/icons/system360/impacts/. Accessed 20 Jan. 2020.

    This is a color photograph of a woman and man operating the IBM System/360 in the 1960s. This photograph was made available by the IBM digital archives, which is a trustworthy source of original images of IBM computers. This photograph was included in the Shattering Technological Barriers section of the website to show an example of the early programmable computers that were inspired by the work of the ENIAC Six in the two decades that followed.

Woman Operating an IBM 1620 Data Processing System. 1958. *Calisphere,* calisphere.org
/item/ark:/13030/kt5n39s0kf/. Accessed 20 Jan. 2020.

      This is a color photograph of a woman operating an IBM 1620 data processing system.
      The source of this photograph is Calisphere, a site that makes available the University of
      California's digital collections. The site is well-regarded as a credible source for digital
      artifacts. This photograph was included in the Shattering the Glass Ceiling section of the
      website to show how more women were able to advance in the computing field in the
      forty years after the ENIAC

Women Learning Differential Equations at Ballistic Research Laboratory. *National Women's
History Museum*, www.womenshistory.org/resources/lesson-plan/getting-program.
Accessed 20 Jan. 2020.

      This is a black and white photograph of women computers learning differential equations
      at the Ballistic Laboratory during World War II. The source of this photograph is the
      National Women's History Museum, which is well-regarded as a credible source for
      artifacts relating to the women's role in American history. This photograph was included
      in the Historical Context (When Women Were Computers) section of the website to show
      how women served as human computers during World War II.

<u>Secondary Sources</u>

Abbate, Janet. *Recoding Gender: Women's Changing Participation in Computing*. MIT Press,
2012. This book reviews the history of women in the computing field during the period
from World War II to the late 20th century.

      The purpose of this book is to demonstrate how gender shaped the culture of computers
      during this period. The book was written by an Associate Professor at Virginia Tech and
      used many different sources to back up the author's claims. Therefore, this book can be
      deemed a credible source of information. This book provided information relating to how
      the ENIAC Six paved the way for other women to enter the programming field.
      Information about the programming achievements of the ENIAC Six and a quote from
      this source were included in the Historical Context (When Women Were Computers)
      section of the website.

Ceruzzi, Paul E. *Computing: A Concise History*. MIT Press, 2012.

      This book includes an overview of the debates about whether computing is a scientific,
      mathematical, or engineering discipline. It also provides a good history of the first
      computers, which includes the ENIAC. The book is credible and well-researched because
      its author is a Professor at the University of Eastern Finland, and the works cited page is
      extensive. This book was used to provide evidence and a quote in the Shattering
      Technological Barriers section of the website.

Collage of Photographs of the ENIAC Six. *Plainfield Girl Scouts*, www.plainfieldgirlscouts.org
/herstory.html. Accessed 20 Jan. 2020.

>This is an image displaying a collage of photographs of the ENIAC Six during their later
years. This image was retrieved from the website of the Plainfield Girl Scouts, which
suggests that the source is credible. This image was used in the Conclusion section of the
website.

The Computers. Produced by Kathy Kleiman, Kate McMahon, and Jon Palfreman, 2014. *ENIAC
Programmers Project*, eniacprogrammers.org/see-the-film/. Accessed 26 Dec. 2019.

>This documentary tells the story of how the ENIAC Six programmed the first
re-programmable electronic computer as a part of a classified World War II project. The
documentary is a reliable source of information because it included original interviews of
the ENIAC Six and was co-produced by Kathy Kleiman, the historian who first
publicized the work of the ENIAC Six. Pictures from this documentary were included in
the Home page of the website. Information from this website was used to support claims
made in The ENIAC Six (Hidden Figures) section of the website.

The Computer Tree. U.S. Army Research Laboratory, ftp.arl.army.mil/ftp/historic-computers/
drawings/big-comp-tree.gif. Accessed 20 Jan. 2020.

>This is a black and white image of a computer tree showing the evolution of computers.
The ENIAC is depicted as the root of the tree. This image was available in the U.S. Army
historic computer image archives, which is a reliable source because the ENIAC was
sponsored by the U.S. Army. This image was included in the Shattering Technological
Barriers section of the website to support how the ENIAC Six's programming
achievements helped inspire the modern computer revolution.

"ENIAC: The First Computer." *Youtube.com*, uploaded by University of Pennsylvania, 19 Aug.
2011, www.youtube.com/watch?v=k4oGI_dNaPc. Accessed 20 Jan. 2020.

>This video presents provides an overview of the history of the development of the
ENIAC. The video is a credible source because it was released by the University of
Pennsylvania, which was the school where the ENIAC was conceived and designed.
Information from this video about the impact of the ENIAC on the evolution of modern
computers was used in the Shattering Technological Barriers section of the website.

Female Participation in Computer Science. *Times Higher Education*, 21 Jan. 2016,
www.timeshighereducation.com/sites/default/files/female-participation-in-computer-scie
nce-210116-large.jpg. Accessed 20 Jan. 2020.

This is an image of a graph showing the percentage of female participation in computer
science in the U.S. and UK during the years 1970 to 2014. This graph was prepared by
Times Higher Education, which is a reliable source of higher education data for research
institutions. This graph was included in the Shattering the Glass Ceiling section of the
website to provide evidence that more women chose to study computer science from
1970 to 1985 because there were greater computing opportunities for them during this
period.

Five Generations of Computers. *KmacIMS*, www.kmacims.com.ng/identify-different-
generation-of-computers/. Accessed 20 Jan. 2020.

This is a color image showing the five generations of computers. The first generation of
computers includes the ENIAC. KmacIMS is an education annex and therefore can be
considered a reliable source. This image was included in the Shattering Technological
Barriers section of the website to support how the ENIAC helped inspire the evolution of
the modern computer from the first generation to the current fifth generation.

Fritz, W. Barkley. "The Women of ENIAC." *IEEE Annals of the History of Computing*, vol. 18,
no. 3, 1996, pp. 13-28, pdfs.semanticscholar.org/d3ca/9f1ad9d139151a582742eb
95ee29322dde4a.pdf. Accessed 20 Jan. 2020.

This journal article publishes the personal stories of the ENIAC Six regarding how they
got involved with the ENIAC project and what their experiences were like on the project.
The article is a reliable source because the author was the ENIAC branch chief from
1948-1955, so he is considered one of the leading authorities on the history of the
ENIAC. Information from this article about the pioneering work of the ENIAC Six was
used to support the claims in The ENIAC Six (Programming Pioneers) and Shattering
Technological Barriers sections of the website.

Girls Who Code Members Who Participate in the College Loops Program. *Girls Who Code*,
girlswhocode.com/collegeloops/. Accessed 20 Jan. 2020.

This is a color photograph of Girls Who Code members who participate in the College
Loops program. The photograph came from the Girls Who Code website and is therefore
a reliable source of the photograph. This photograph was included in the Shattering the
Glass Ceiling section of the website to show an example of a group that currently tries to
to continue the groundbreaking work of the ENIAC Six.

Haigh, Thomas, et al. *ENIAC in Action: Making and Remaking the Modern Computer*. MIT Press, 2016.

>   This book provides an overview of the conception and development of the ENIAC, discusses the programming role of the ENIAC Six, and how the ENIAC influenced the generation of computers that followed. This a well-researched and reliable source because the authors include a Professor at the University of Wisconsin-Milwaukee and two independent researchers who have authored articles for reputable publications. A quote from this book was included in the Shattering Technological Barriers section of the website to provide support that the ENIAC helped paved the way for stored-program computing.

Henn, Steve. "When Women Stopped Coding." *National Public Radio*, 21 Oct. 2014, www.npr.org/sections/money/2014/10/21/357629765/when-women-stopped-coding. Accessed 20 Jan. 2020.

>   This website article discusses the reasons for the decline of women studying computer science starting in 1984. An image of a graph will be used that shows the percent of women by academic major during the years 1965 to 2015. This article was published by NPR, which is a reputable source of information. This information and graph were included in the Shattering the Glass Ceiling section of the website to support the argument that more women chose to study computer science up until the mid-1980s because there were opportunities to advance in the computing field.

Isaacson, Walter. "Walter Isaacson on the Women of ENIAC." *Fortune*, 18 Sept. 2014, fortune.com/2014/09/18/walter-isaacson-the-women-of-eniac/. Accessed 20 Jan. 2020.

>   This magazine article covers how the ENIAC Six were recruited to work on the project and demonstrated that computer programming was just as significant as hardware design. The author is a Professor at Tulane University and therefore is deemed a credible source of historical information. Information from this article about how the ENIAC Six's contributions were not recognized for many decades was used to support the claims made in The ENIAC Six (Hidden Figures) section of the website.

Jones, Brad, and Luke Larsen. "Long Before Gates or Jobs, 6 Women Programmed the First Digital Computer." *Digital Trends*, 1 Mar. 2019, www.digitaltrends.com/computing/remembering-eniac-and-the-women-who-programmed-it/. Accessed 20 Jan. 2020.

>   This is a web page that includes an article about the ENIAC programmers and how they contributed to the birth of programming. This article provides information on how the ENIAC Six's contributions were hidden for decades before historians began publicizing their achievement. A quote from this article was included in the Shattering the Glass Ceiling section of the website to show how the ENIAC Six continue to inspire women today.

Kim, Meeri. "70 Years Ago, Six Philly Women Became the World's First Digital Computer
     Programmers." *PhillyVoice*, 11 Feb. 2016, www.phillyvoice.com/70-years-ago-six-
     philly-women-eniac-digital-computer-programmers/. Accessed 20 Jan. 2020.

     This webpage includes an article written about the ENIAC programmers on the 70th
     anniversary of the ENIAC. The author is a science writer who writes for well-regarded
     newspapers and therefore is likely a credible source. A quote from this article was
     included in The ENIAC Six (Programming Pioneers) section of the website to provide
     evidence supporting the complexity involved with programming the ENIAC.

Kode with Klossy Members Learning How to Code. *Kode with Klossy*, www.kodewithklossy.
     com/impact. Accessed 20 Jan. 2020.

     This is a color photograph of Kode with Klossy members learning how to code. This
     photograph was made available on the Kode with Klossy website, which is a reliable
     source for this photograph. This photograph was included in the Shattering the Glass
     Ceiling section of the website to show an example of the recent groups that serve to
     continue the ENIAC Six's legacy and encourage girls to pursue careers in computing.

Light, Jennifer S. "When Computers Were Women." *Technology and Culture*, vol. 40, July
     1999, pp. 445-83, beforebefore.net/scima200/media/light.pdf. Accessed 20 Jan. 2020.

     This journal article reviews how women served as low-level human computers
     (computing numbers) during World War II and why this led to the ENIAC Six being
     selected to serve as programmers for the ENIAC. The author is a Professor at the
     Massachusetts Institute of Technology and serves on the editorial board of the IEEE
     Annals of the History of Computer. These qualifications suggest that the author is a
     credible source and qualified to write about the roles of women in the computing field
     during World War II. A quote from this author was included in the Historical Context
     (When Women Were Computers) section of the website. Also, information from this
     source on the roles of women in the computing field prior to the work of the ENIAC Six
     was used to support claims in the Historical Context (When Women Were Computers)
     and The ENIAC Six (Hidden Figures) sections of the website.

Little, Becky. "The First 1940s Coders Were Women - So How Did Tech Bros Take Over?"
     History.com, A&E Television Networks, 29 Aug. 2018, www.history.com/news
     /coding-used-to-be-a-womans-job-so-it-was-paid-less-and-undervalued. Accessed 20 Jan.
     2020.

     This website article reviews how Kathy Kleiman, a computer programmer historian,
     discovered that the ENIAC Six were the first modern computer coders. This website
     article was included in the History channel website, which is a credible source of
     historical information. A quote from this author was included in the Shattering the Glass
     Ceiling section of the website to show how the ENIAC Six paved the way for more
     women to become programmers after World War II.

McCartney, Scott. *ENIAC: The Triumphs and Tragedies of the World's First Computer*. Berkley
    Publishing Group, 1999.

    This book provides an overview of the challenges associated with the development of the
    ENIAC. The author used many different sources to back up his claims, so the book can
    be deemed a credible source of information about the ENIAC. A quote and information
    from this book was included in the Shattering Technological Barriers section of the
    website to support claims that the ENIAC inspired the revolution of modern computers.

Moye, William T. "ENIAC: The Army-Sponsored Revolution." *Army Research Laboratory*, U.S.
    Army, Jan. 1996, ftp.arl.army.mil/~mike/comphist/96summary/. Accessed 20 Jan. 2020.

    This is a website article that provides an overview of why the U.S. Army funded the
    development of the ENIAC during World War II. The author is a historian for the U.S.
    Army Research Laboratory, which suggests that he is a credible source and qualified to
    write about the history of why the U.S. Army funded the development of the ENIAC.
    Information about how the ENIAC was the result of a World War II assigned was used to
    support claims made in the Historical Context (Extraordinary Demands of War) section
    of the website.

1942 Edition of Abbreviated Firing Tables for 105-mm Howitzer. *American Heritage*,
    www.americanheritage.com/girl-computers.

    This is a digital image of the front cover and a single page from the 1942 Edition of the
    Abbreviated Firing Tables for the 105-mm Howitzer. This digital image was made
    available by American Heritage magazine, a trusted and respected provider of historical
    information. This image was included in the Historical Context (Extraordinary Demands
    of War) section of the website to show what a firing table looked like during World War
    II.

Plutte, Jon. "Human Computers." *Computer History Museum*, 2011, www.computerhistory.org
    /revolution/calculators/1/65/2209. Accessed 20 Jan. 2020.

    This is a video clip of how computers once referred to humans who performed
    mathematical calculations. The source of this video clip is the Computer History
    Museum, which is well-regarded as a credible source for artifacts relating to the
    computer revolution. An excerpt from this video was included in the Historical Context
    (When Women Were Computers) section of the website to provide information on how
    the ENIAC Six were computers before they were selected to program the ENIAC.

Plutte, Jon. "Jean Bartik: ENIAC's Programmers." *Computer History Museum*, 2011,
www.computerhistory.org/revolution/birth-of-the-computer/4/78/2258. Accessed 20 Jan.
2020.

This is a video clip of an interview with Jean Bartik. The source of this video clip is the
Computer History Museum, which is well-regarded as a credible source for artifacts
relating to the computer revolution. An excerpt from this video was included in The
ENIAC Six (Programming Pioneers) section of the website to provide information on the
process for programming the ENIAC.

"Then and Now." *Hagley Museum and Library*, 1960, digital.hagley.org/VID_1985261_
B130_ID01_02. Accessed 20 Jan. 2020.

This is a video clip of the original "Then and Now" documentary that provides
information on the creation of the ENIAC and how it has impacted computers that
followed it. This clip was made available by the Hagley Museum and Library, which is a
reliable source of historical information. An excerpt from this video was included in the
Shattering Technological Barriers of the website This video provides evidence that there
was a computer boom following the ENIAC, leading to more than 5,000 computers by
1967.

Thompson, Clive. "The Secret History of Women in Coding." *The New York Times Magazine*,
13 Feb. 2019, www.nytimes.com/2019/02/13/magazine/women-coding-computer-
programming.html. Accessed 20 Jan. 2020.

This online magazine article provides an overview of how women, including the ENIAC
Six, played a key role in developing the coding field and suggests that women began to
be forced out of the programming field around 1984. *The New York Times Magazine* is
considered an unbiased source of information and the author is reported to be one of the
most influential technology journalists. Therefore, this article can be deemed to be a
credible source. Information from this article about how the ENIAC Six broke gender
barriers was used to support claims in the Shattering the Glass Ceiling section of the
website.

U.S. Army, Army Research Laboratory. *50 Years of Army: Computing from ENIAC to MSRC*.
Edited by Thomas J. Bergin. *Semantic Scholar*, pdfs.semanticscholar.org/6ce4/
572f49a5356781274afbf614fad1d29ce592.pdf. Accessed 20 Jan. 2020.

This is a government publication that includes transcripts of the symposium held in
November 1996 to commemorate the 50th anniversary of the dedication of the ENIAC.
The publisher was the U.S. Army, which is a credible source because ENIAC was
sponsored by the U.S. Army. The information from this publication was used to support
claims in The ENIAC Six (Programming Pioneers) section of the website relating to the
complexity involved with programming the ENIAC.

Weik, Martin H. "The ENIAC Story." *History of Computing Information. U.S. Army Research Laboratory*, ftp.arl.army.mil/~mike/comphist/eniac-story.html. Accessed 20 Jan. 2020. Originally published in *Ordnance*, Jan.-Feb. 1961.

        This is a reprinted journal article on the story of the ENIAC written by Martin Weik that was originally published in 1961. Martin Weik worked with the ENIAC at the Ballistic Research Laboratory and therefore is considered a reputable source. This article provides information on why the U.S. Army funded the ENIAC. A summary of the information and quote from this article was used in the Historical Context (Extraordinary Demands of War) section of the website.

"The World's First Programmers, the Women of the ENIAC, to Come to NYC February 23 to Speak about the History of Women in Computing and Harvard's President Summer's Recent Controversial Comments." *Women in Technology International*, 31 Jan. 2005, witi.com/center/aboutwiti/press/downloads/pr2005NewYorkENIACevent.pdf. Accessed 20 Jan. 2020.

        This is a press release announcing that Kathleen McNulty and Betty Jennings will be speaking at a Women in Technology International (WITI) meeting about women in computing. The source is reliable because it came directly from the WITI website. A quote about how they started programming as a career was used in the Shattering the Glass Ceiling section of the website to show how programming as a career began with the ENIAC Six.

Zachary, Joseph L. *Introduction to Scientific Programming: Computational Problem Solving Using Maple and C*. Electronic Library of Science, 1996.

        This book is an educational guide for students to use computational techniques to solve certain problems. The author is a Professor at the University of Utah and is therefore considered a reliable source of computing information. A quote on the time required to perform the firing table calculations was included in the Historical Context (Extraordinary Demands of War) section of the website to show why the BRL needed a machine, like the ENIAC, to meet the growing demands for firing tables during World War II.