

sakl viTüal 1/2 PthinPj  
skesil asPkaryl dgel misybecKviTüa BtmanviTüa

karbNHoNpI

nig

kareRbR)asBtmanviTüakñ

sakl viTüal 1/2 PthinPj

11-13 kBa0 2001

raCFanPj

# 1> esckppn

bc, nänH tll rbsBtmanvitüaKWU)anTTV sÁI nig eRbR)aseRcheLg<sup>2</sup> EdI Ca  
 ]bkrNmlyyagsMansMabbMvisy esdæc© nig sgAnrsenArbseygSBEfTajmU .  
 edayKankarsgSyeLly GEdI eygFab)anKitTkCamm \L VenH)ankayCakarBiteTAehlydt  
 CakarTMak;TMgEdI eygBmmkERbR)asry<sup>3</sup>eBl rabEx CkkaI rhttdI rabqAMetvaEbrCaRTU  
 )andMnkarkgry<sup>3</sup>eBl xlnly eygGacniyay)anfa BrnWhtaTbeNñH . TnInngenaHedr  
 TMak;TMgbecRvitüaenAkgeragcRk shRKas KWgEtGPivDAenAbecRvitüarbsxñeGay  
 smRsbeTAngyKsmlyBtmanvitüaTñbenHedr . GPEdI RbeTsnanaenAel BPBel akkBg  
 cabGarmNenah KWareRbR)as;Internet eygGacniyay)anfaman Internet KWmanGPfTajGs; .

TnInngkarrkcMhbecRvitüaBtmanvitüaenAel bNpRbeTsnanael BPBel akeygenHk<sup>3/4</sup>  
 manRbeTsxñvisygenHkenAmankarGPivDAenyWenAeLly yagNamij kñsmakmnGasGaeKñy\_  
 kñcaHedr . niyayedayELkenAkmgæygenH mankarI MakkgkarGPivDAinvisy Btmanvitüa  
 ehlyeygkKWgBüayamGPivDAel EpikenHeTAdI RbCaCnkmæTajGs; )annlyfa karbNñ  
 bNpI BtmanvitüasMabGkTajGsKañ.

ehtoldenHehly GEdI eygel kykmbgøj enAkñskasil aenH KWppteTAel kar  
 bNñbNpI nigkareRbR)asBtmanvitüarbssakI vitüal yPñinPñBj edm,CYGPivDAsgñ  
 nigesdæc©sRbeTseyg .

## 2. Kal karNRKwénkarGnwtpBtmanvitüa

manneygbgaj kareRbR)as; nigkarbNpBnpl BtmanvitüaenAsakI vitüal yPbBj eygstheI kykTkEngFM énkargnwtpnigkareRbR)asyis yBtmanvitüaEdI kgenahmandt teTA<sup>3</sup>

### 1- BtmanvitüakgkarRKbRKg

enATenHeKal karNRKwéAeTaeI kareRbR)asBtmanvitüadCa

Btmanvitüakgkariyal y smanpitenATenHKwarkRKbRKgÉksar nig Thm y .

### 2- BtmanvitüakgeragcRk

ek)aneRbR)asBtmanvitüaenATenHkgkarpI itrbsrbrkgeragcRkeday

I kN<sup>3</sup> yRbvtplCa pl it Lan RKbRKgnigRtBhitü] bkrNeRKogynpcgniyayfaenATenH kargarkwarkRKgedaymnisSynpignig ] bkrN<sup>3</sup> yRbvtpl

### 3- bNbj

enATenHeKeRbR)asCamYngTKmnaKmn\_kBütWanbMTAKarRKb;

RKg énbNbj RKbrbPaBTagSénRbBhMak;TMgdCa kBütTAKBüt½ kBütTATÜS½ kBütTATÜSsar TSareTATÜSsar TUS½ eTATÜS½ EdI ek)aneRbR)asyagsMan;LüenH kgkargarTMak;TMgBaNCkmpedayCaBéSSKvbNbj Internet .

### 4- BtmanvitüakgkarRsavRCav

karRsavRCavedaykBüt½(Concept of Hardware and Software) eday

eRbR)asFmptaeTAKarCYdI karsresrRbRkam nig CYdI karsagsgcrnpxagkgénkBüt½.

### 5- BtmanvitüakgvitüasarSp

karRsavRCavvitüasarSpKakEngdFMYénGkeRbR)asBtmanvitüaedml

tWkarstil nig smbEpkeyaFa . kBüt½enATenHmanGanPaBxag smbBhdI karRsavRCav .

6- BtmanvitüaküjarkkSanp

eK)anbeglt kmpFenACMj PC ( Personal Computer ) EdI erbenAKEng  
enH sMabEI ,gkksanp sMab:| MhGarmN\_ CaBisseKeFRbBkamsWAEtAel GkkrbR)asekg<sup>2</sup>  
rñTadEI ,gkksanp sMabkarGbrpEdr . I .

7- BtmanvitüaküvisyKrekaSlü

vamanRKbEpkTadGsenkarbergonEdI erbR)asBtmanvitüa . va)an  
bMteTA GkkrbRgonBtmanvitüayagrsvk .

3> ed)atWngBtmanvitüa

k> TidBaBTETA

enAsakI vitüal yPthnPBJ rbseyg)anbeglt ed)atWngBtmanvitüaküjqam 1994-  
1995 Camykar]btñedayGgkar JICA. mñngkayCa ed)atWngBtmanvitüaenH vaenHCa  
ed)atWngmYEdI bMteTA ed)atWngepSg<sup>2</sup>dlCa KNitvitüa rlvitüa Khvitüa nig Clvitüa -qam  
1991-1994! .

erKayB)ankayCaed)atWngBtmanvitüaenHy Ggkar JICA)anbBñsarSpcaüS PKcitp  
nig]bkrNkMÜT<sup>2</sup>EfmTad)anCybNñbNñI sarSpcaü nig nisStEdI küqamhaHeyg)an  
erCserIsnisSteGaycu mkskSakükkMbrBaR<sup>2</sup>BtmanvitüacMh 35 nak; .

sarSpcaürbs; JICA nig sarSpcaüExp )anshkarKaryagstt mñnigyagstñhab;  
tsBUBar ]bsKadm,bNñbNñI nisStTadGsenah . CaGksI enAqam 997 JICA)anbBaS,  
karEckcay]bkrN\_ nig sarSpcaüCMaj erKayBkarebk)anry<sup>3</sup>eBI Brqam . bñpTahbl  
CaGgkarenH)anbBaSmmKragkeday k<sup>2</sup>sarSpcaürbseygenAkütdn; nig xdeTot  
)anbBaS<sup>2</sup>karSkSabbretsk)anbñbNñbNñI tamkmpFrb; JICA nig tamkarpsbñ<sup>2</sup>  
edml,sMbsM eTA tamsarSpcaüEdI eygkBgman .

rh<sub>tt</sub>mkdI eBl \L<sub>U</sub>enHeygmansarSp<sub>car</sub>ücmH 35nak; EdI mansmasPaBdtteTA man 1 nak; CabN<sub>tt</sub> 6 nak; CaGnbN<sub>tt</sub> nig 28 nak; CabrB<sub>tt</sub> . ehlyeyg)an bN<sub>tt</sub>bN<sub>tt</sub> edayeCaKCy/bCManmkehly EdI mancM<sub>tt</sub>nisstrh<sub>tt</sub>mkdI eBl enHCasr<sub>tt</sub>cmH 300 nak; ehlyB<sub>tt</sub>keKT<sub>tt</sub>ajGsenah x<sub>tt</sub>lkoyeTACasaR<sub>tt</sub>sp<sub>car</sub>üenATenaH x<sub>tt</sub>beF<sub>tt</sub>karenAk<sub>tt</sub>raCrd<sub>tt</sub>Pi)al x<sub>tt</sub>beF<sub>tt</sub>karenAtamR<sub>tt</sub>kmh<sub>tt</sub>nig Gg<sub>tt</sub>karnanak<sub>tt</sub>üRBHraCacR<sub>tt</sub>km&ca ehlyngx<sub>tt</sub>beTotbn<sub>tt</sub>kar<sub>tt</sub>skSaenAerKA RbeTs .

c<sub>tt</sub>N<sub>tt</sub>kc<sub>tt</sub>M<sub>tt</sub>nisstEdI eygk<sub>tt</sub>B<sub>tt</sub>g<sub>tt</sub>bN<sub>tt</sub>bN<sub>tt</sub> sB<sub>tt</sub>f<sub>tt</sub>q<sub>tt</sub>H mansr<sub>tt</sub>bRbEhI 800 nak; cabB<sub>tt</sub>q<sub>tt</sub>VI 1 dI ;q<sub>tt</sub>VI 4 .

x> karbN<sub>tt</sub>bN<sub>tt</sub>I

1>karbN<sub>tt</sub>bN<sub>tt</sub>I Btmanv<sub>tt</sub>üaT<sub>tt</sub>TAenAk<sub>tt</sub>m&ca

K<sub>tt</sub>N<sub>tt</sub>sm, t<sub>tt</sub>nbec<sub>tt</sub>Rv<sub>tt</sub>üaBtmanv<sub>tt</sub>üa CaB<sub>tt</sub>essm<sub>tt</sub>xvCaT<sub>tt</sub>bK<sub>tt</sub>mnaK<sub>tt</sub>mn\_nig bN<sub>tt</sub>aj

)an edrt<sub>tt</sub>haT<sub>tt</sub>l yagsMan<sub>tt</sub>k<sub>tt</sub>üCv<sub>tt</sub>trsenAsB<sub>tt</sub>f<sub>tt</sub>q<sub>tt</sub>nig k<sub>tt</sub>c<sub>tt</sub>RarBaN<sub>tt</sub>C<sub>tt</sub>R<sub>tt</sub>mp<sub>tt</sub> . vaT<sub>tt</sub>ajGsenHmansar<sub>tt</sub><sup>3</sup> sMan;Nask<sub>tt</sub>ükarbN<sub>tt</sub>bN<sub>tt</sub>I FnFanmn<sub>tt</sub>sSenAk<sub>tt</sub>m&ca G<sub>tt</sub>B<sub>tt</sub>c<sub>tt</sub>N<sub>tt</sub>Hd<sub>tt</sub>g<sub>tt</sub>BitR)akdk<sub>tt</sub>üvCaT<sub>tt</sub>aj<sub>tt</sub>enH edml, eGay)anCyGPivD<sub>tt</sub>A<sub>tt</sub>esd<sub>tt</sub>k<sub>tt</sub>ü<sub>tt</sub>sRbeTs. el sBenHeT<sub>tt</sub>AeTotvaenHmanPaB<sub>tt</sub>rsrevkn<sub>tt</sub>igs<sub>tt</sub>ahab; s<sub>tt</sub>M<sub>tt</sub>abGPivD<sub>tt</sub>A<sub>tt</sub>mn<sub>tt</sub>sSCaerogr<sub>tt</sub>ht . karbN<sub>tt</sub>bN<sub>tt</sub>I sMan<sub>tt</sub>b<sub>tt</sub>tt<sub>tt</sub>k<sub>tt</sub>üEp<sub>tt</sub>kenHK<sub>tt</sub>Wec<sub>tt</sub>ReT<sub>tt</sub>ss<sub>tt</sub>M<sub>tt</sub>ab;FnFan mn<sub>tt</sub>sSenBtmanv<sub>tt</sub>üa . CakarBitkarbN<sub>tt</sub>bN<sub>tt</sub>I Btmanv<sub>tt</sub>üava)anC<sub>tt</sub>M<sub>tt</sub>ij eGayG<sub>tt</sub>k<sub>tt</sub>skSamanPaB<sub>tt</sub>s kmp<sub>tt</sub>srevkCam<sub>tt</sub>Yng<sub>tt</sub>c<sub>tt</sub>N<sub>tt</sub>Hd<sub>tt</sub>g<sub>tt</sub>énkarG<sub>tt</sub>nut<sub>tt</sub>p<sub>tt</sub><sup>3/4</sup> . RbCaCney<sub>tt</sub>gx<sub>tt</sub>l )anyI d<sub>tt</sub>g<sub>tt</sub>BP<sub>tt</sub>aBca<sub>tt</sub>Mac; é<sub>tt</sub>nk<sub>tt</sub>arGPivD<sub>tt</sub>A<sub>tt</sub>Btmanv<sub>tt</sub>üak<sub>tt</sub>üBP<sub>tt</sub>Bel ak ehlyng<sub>tt</sub>b<sub>tt</sub>tt<sub>tt</sub>beTotenHmkdI RbeT<sub>tt</sub>skm&ca . \L<sub>U</sub>enH manGg<sub>tt</sub>karCaerChT<sub>tt</sub>ajsaFarN<sub>tt</sub><sup>3</sup> T<sub>tt</sub>ajÉkCn)aneb<sub>tt</sub>kmC<sub>tt</sub>AmN<sub>tt</sub>ü rbseKedml, bN<sub>tt</sub>bN<sub>tt</sub>I Ep<sub>tt</sub>k Btmanv<sub>tt</sub>üaenH EdI mankm<sub>tt</sub>v<sub>tt</sub>F<sub>tt</sub>dtteTA<sup>3</sup>

1. Programming Software
2. Software Package
3. Network Administration and Application
4. Application Software
5. Database Management and Database Application
6. Internet Programming

-stheml Éksareyag Ep<sub>tt</sub>k k!

## 2> karbNlbNpl Btmanvitüaköjsakl vitüal k/PhinPibj

karbNlbNpl enAköed)atWgenH kögeKal edACaGikÉkeTsnigTTI sBaöÖk  
brBaöÖk Btmanvitüaköry<sup>3</sup>eBl 4qalMedl karbNlbNpl enHmankm/Fldt.eTA<sup>3</sup>

- RkMen Programming: kmpFenH)annaMIsSteGayerRbR)as; nig sresrRbRkameday  
PaSa C/C++ enAel masln PC dacedayELk<sup>2</sup>BKä .
- kMtxSén Programming<sup>3</sup> kökmpF)annaMIsSteTACaGiksresrkmpFI (Software)  
ehlykvaMTCaGik Develop Software CaBéSSStabBkeKEdl eFlkareTael I  
Database System and Networking . kmpFenHngppl eGay nisStmankMtxS;  
kökarsresrkmpFI (Software) eTAngcMNdngBitR)akdrbsBkeK .
- System Analysis and Design: kmpFenH)annaMIsSteGayerRbR)as; nig sresrRbRkameday  
System Analysts . vaenH)anbNlbNpl Concept of Business, Information  
System Development and Design Software . kmpFenH)aneqlytbeTAngkar  
GPvDAnbecRvitüaBtmanfFddCa<sup>3</sup>
  - Object Oriented Programming with Java
  - Object Oriented Software Engineering
  - Software Computer Design
  - Object Distributed Design
  - Object Oriented System Development

TnHnngenHedreybg)anBRgk kmpFrbseylgeGayRtUtamTpSarBtmanvitüabcö, nñcöBal  
saRspcarü nig nisSt edaysgt.eI 14 cMcdtxagerKamenH

### Internet/Intranet

- Introduction to Internet
- Use Internet Service
- HTML and Web Site

- Internet and Technologies
- Intranet

#### Networking

- Introduction to Computer Network
- Network Operating System
- LAN Technology
- Network Management
- Built up Network Service ( Implement Service)
- Network Design

#### Software Development

- Database System
- Database Design
- SQL
- Java
- Web Programming ( Java Applet, CGI, ASP, PHP,.....)
- Client/Server System
- Multimedia Technology
- Project Management

#### General Knowledge

- Usage of Computer
- Office Software
- GroupWare
- Management Information System

4> Kragénkarbegt mCÄmNÄ BtviTüasMab,sakI viTüal %PthinPÄBj  
 k> sÄnPaBénkareRbR)asBtmanviTüaenAkügsakI viTüal %PÄBj

enAsakI viTüal %PÄBj )aneRbR)askBüÜTzMH 173 eRK0g RbePTkBüÜTzCaI kÄN<sup>3</sup>  
 bNÄj man 2 EdI mYerbbNÄj NT nig mYeToteRbbNÄj Linux. Server TäJBr enH  
 )aneRbR)asenAküged)atmgBtmanviTüabNÄH. nisStGaccU eTARSavRCavBtmannigemeroneI  
 Internet Caerogral éf(SAr-edayerbR)as;NT Server CamYngkar Dial Up to Camnet ISPnH  
 CamY Proxy Server to share . eygBManman E-mail Server, Web Server, and Database  
 Sever eT . ehlyk(BüÜTzened)atMgnmY<sup>2</sup>kBManmankarPäbrvagKänigKäenAeLly ehly  
 TnmY rbs;ed)atMgnmY<sup>2</sup>eRbR)asdacedayELk<sup>2</sup>BKä .

x>KragénkartMlg

dGik)aneXlj Rsabehly GldI eyg)aneRbR)asnigGldI eygkMgmanbBaaxageI  
 enH dtenHehly)anCaeygmankragtMlgmCÄmNÄ enH sMab,sakI viTüal %PthinPÄBj  
 kügeKal bNÄgdtteTA<sup>3</sup>

- CamCÄmNÄ E-mail Server
- CamCÄmNÄ Web Server
- CamCÄmNÄ karEckcay Database eTAGikeRbR)asenAkügbNÄj enH .

GikeRbR)as;TäJGsenahman nisSt saRspcarü bkÄ krbs;sakI viTüal %TäJGs;  
 kartMlggenHmanBrdMakkal<sup>3</sup>

- dMakkal TmY<sup>3</sup> KlygtMlgMab,sakI viTüal %PthinPÄBj mY -sthemll  
 Krag I GitenAÉksareyag X ;
- dMakkal TBr<sup>3</sup> kartMlggenHnigPäbeTAsaxaTäJGsrbs;sakI viTüal %PthinPÄBj  
 dGCa bNÄI %semp htm Esn mCÄmNÄ PasaGnpCati nig

sakl vItüal yPthinPibj TBr . kōdNak;TBrenH Center enHngkayeTACa  
mCÄmNØ mYEdI maneKal edA dtteTA<sup>3</sup>

- IT Research and Development
- IT Service
- Distance Learning ( Virtual Education)

## 5> bBað nig sMht

kōkartWlgentH eygmantWkarddtteTA<sup>3</sup> mashkWüÜ½ ]bkrN\_ Network  
nigGikCmaj kar . edml,eGayKfagenHdNrkar)anqabrH½ eygsthGßavnaveTAracrdap)al  
nig Ggkar kōnigerkARbeTsnana eFshRbtbtkarCamYsakl vItüal yeyg´TadEpik  
]bkrN\_BtmanvItüa nig FnFanmnisS . el IsBenHeTæTot CyppI GaharrWbkrNdl nisSt  
nig saRspcarükWepikenHeGay)aneRch TadJkarskSa ry<sup>3</sup>eBl xhigry<sup>3</sup>eBl Evg .

## 6> snidlan

dtEdI eyg)aneXlj rcmkehly GßkareRbR)asnigbNßbNßI BtmanvItüakōsakl  
vItüal yPthinPbseygentH enAmanI kN<sup>3</sup>kMtenAeLly . edml,eGaymCÄmNØ enH kōyCa  
mCÄmNØ bNßbNßI FnFanmnisSepkbtmanvItüa edml,CyGPiDAdI esdteic nig sgñkmCa  
eygsmhBrdI racrdap)al GgkarCatiGnpCatinana dtCa UNESCO, JICA, UNDP, CICC,  
CISCO, nig bNßknhmanadCa IBM CyEckcay]bkrNkWüÜ½ nigkarbNß  
bNßI saRspcarünignisSt rbseyg eGay manKINPaBxS;kōry<sup>3</sup>eBl xhoy<sup>3</sup>EvgNamly .

eygsgomfa racrdap)al nigCyEckcaykarPabbNßj Internet eTASal kvItüal y  
eyg´ edml,eGaysaRspcarünignisSt)anRsavRCavkanEt)anTU MU ay ehlyeygk½sgompg  
Edrfa karxNoyERogrbbsracrdap)al eyg nig eygTadGskakōepikenH nig nabGayvisyentH  
rkcmh ehlyEfmTadjesdteic nig sgñénRbetseygGPiDæTAmx yagqab:

## Éksæyag k<sup>3</sup>

### Training Courses of IT in Cambodia

1. Programming Software	Percent
Visual Basic	50%
C/C++	30%
Delphi	3%
Others programming	17%

2. Software Package	Percent
Microsoft Office	70%
Graphic ( Corel Draw, PhotoShop, AutoCAD)	12%
Others Software	18%

3. Network Administration and Application	Percent
NT, Win9x, Win2K	80%
Linux	15%
Novel Netware	5%

4. Application Software	Percent
QuickBook	70%
Finance and Accounting	20%
Others Software	10%

5. Database Management and Database Application	Percent
Access	70%
SQL Server	20%
FoxProx, FileMaker	5%
Others	5%

6. Internet Programming	Percent
Internet Usage	50%
Homepage Initialization Design	30%
Java Applet Programming	5%
ASP, CGI, PHP	15%